



Enterprise-1 Exploration Drilling Program Environmental Plan Summary

Revision	Date	Reason for issue	Reviewer/s	Consolidator	Approver
0	20/4/2020	Submission to DJPR			YD

THE THREE WHATS
What can go wrong?
What could cause it to go wrong?
What can I do to prevent it?

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Abbreviations

Terms/acronym	Definition/expansion
ALARP	As low as reasonably practicable
BHA	Bottom hole assembly
CO ₂	Carbon dioxide
CFA	Country Fire Authority
CHMP	Cultural heritage management plan
CMO	Beach Energy integrated and centralised Health, Safety and Environment information system used to track and monitor all related HSE regulatory compliance processes.
CRG	Community reference group
DELWP	Victorian Department of Environment, Land, Water and Planning
DJPR	Victorian Department of Jobs, Precincts and Regions
DMP	Drainage Management Plan
EP	Environment plan
EPA Victoria	Environment Protection Authority (Victoria)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ERD	Extended reach drilling
ERIP	Emergency Response Interface Plan
ERP	Emergency response plan
ERR	Erath Resources Regulation
FFG Act	Flora and Fauna Guarantee Act 1988
HAZID	Hazard identification
HDPE	High-density polyethylene
HSE	Health, safety and environment
HSEMS	Health, Safety and Environment Management System
ILUA	Indigenous land use agreement
kg/m ³	Kilogram per cubic metre
LCM	Loss Circulation Material
MSL	Mean sea level
NPAC	National Parks Advisory Council
OGP	Otway Gas Plant
PCNP	Port Campbell National Park
PSDA	Petroleum Special Drilling Authority
SBM	Synthetic based mud
SDS	Safety Data Sheets
SEP	Stakeholder engagement plan

Terms/acronym	Definition/expansion
SWL GMA	South West Limestone Groundwater Management Area
TMP	Traffic management plan
Victorian OPGGS Act	Victorian <i>Offshore Petroleum and Greenhouse Gas Storage Act 2010</i>
Victorian OPGGS Regulations	Victorian <i>Offshore Petroleum and Greenhouse Gas Storage Regulations 2011</i>
WBM	Water based mud
WECS	Well Engineering Construction System
WOMP	Well Operation Management Plan

Glossary of key terms

Key Terms	Explanation
The drilling activities	The drilling activities associated with the Enterprise-1 Exploration Drilling Program as defined in Section 0 of this document.
The Project	The exploration drilling of the Enterprise-1 well including construction, operations and decommissioning.
The Project area	Includes the Enterprise-1 wellsite, exploration well and access point.
The Rig	Rig 931 operated by Ensign International Energy Services and contracted to drill the Enterprise-1 exploration well.

1 Introduction

This Environment Plan (EP) Summary document has been prepared in accordance with Regulation 13E of the Victorian *Offshore Petroleum and Greenhouse Gas Storage Regulations 2011* (Victorian OPGGS Regulations) as required by the *Offshore Petroleum Greenhouse Gas Storage Act 2010* (Victorian OPGGS Act).

As the Enterprise-1 Exploration Drilling Program ('the Project') includes both an onshore and offshore component, a single EP was prepared to satisfy the applicable onshore and offshore legislation. The Enterprise-1 Exploration Drilling Program Environment Plan was approved by the Minister for Resources on 5 April 2020 under the Victorian OPGGS Act.

1.1 Scope of this Document

In accordance with Regulation 13E(4) of the Victorian OPGGS Regulations, this EP Summary includes details about the location and nature of the activity, the receiving environment, consultation undertaken, the environmental impacts, risks and associated control measures, monitoring and environmental performance measures and emergency response arrangements.

While the Enterprise-1 Exploration Drilling Program EP was prepared to address both onshore and offshore legislative requirements, a summary document is only required under the Victorian OPGGS Regulations. As such, the focus of this EP Summary relates primarily to aspects of the Project relevant to the offshore environment and is not a summary of the complete EP.

Relevant activities include drilling of the Enterprise-1 exploration well, well testing activities and decommissioning (pending outcomes of the drilling program). Other activities required for the exploration program not relevant to the offshore jurisdiction and outside of the scope of this EP Summary include wellsite preparation, an onshore vertical seismic profile and operation of an existing temporary accommodation camp area.

1.2 Nominated Titleholder and Liaison Person

Beach Energy Limited (**Beach**) is the titleholder and operator of the offshore exploration permit VIC/P42(V). Beach acquired the previous title holder Lattice Energy (**Lattice**) (previously named Origin Energy Resources Limited (**Origin**)) on 31 January 2018.

In accordance with the Regulations 13E(4)(ix) of the Victorian OPGGS Regulations, the details of the titleholder's nominated liaison person for the activity is provided below:

The Titleholder's nominated liaison person is:

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2 Description of the Activities

The Enterprise-1 Exploration Drilling Program will drill a single exploration well into exploration permit area VIC/P42(V) to explore and appraise Beach's commercial gas resources. This section provides an outline of the Project activities relevant to the offshore jurisdiction.

The nearshore Enterprise prospect is located about 2 km offshore within Victorian State waters and about 2.1 km below the seafloor. The well will be drilled from an onshore wellsite, approximately 3.5 km from the prospect, using extended reach drilling (ERD). This technique eliminates the need for disturbance to the seabed and the marine environment.

2.1 Location of Activities

The onshore wellsite is located approximately 4 km west of Port Campbell, approximately 7 km east of Peterborough and approximately 200 km southwest of Melbourne within the Shire of Corangamite and outside of exploration permit area VIC/P42(V). Beach has obtained a Petroleum Special Drilling Authority (PSDA) under the onshore Victorian *Petroleum Act 1998*, which was granted on 9 July 2019 (6846) and is shown in Figure 1.

The coordinates of the well and temporary accommodation camp are provided in Table 1 and the Project location is shown in Figure 1

Table 1: Location Coordinates

Location	Easting	Northing
Enterprise-1 well	E670154	N5724700
Accommodation site	E654540	N5733050

Coordinates based on MGA94, Zone 54H. *Exact location of the well is subject to minor alteration.

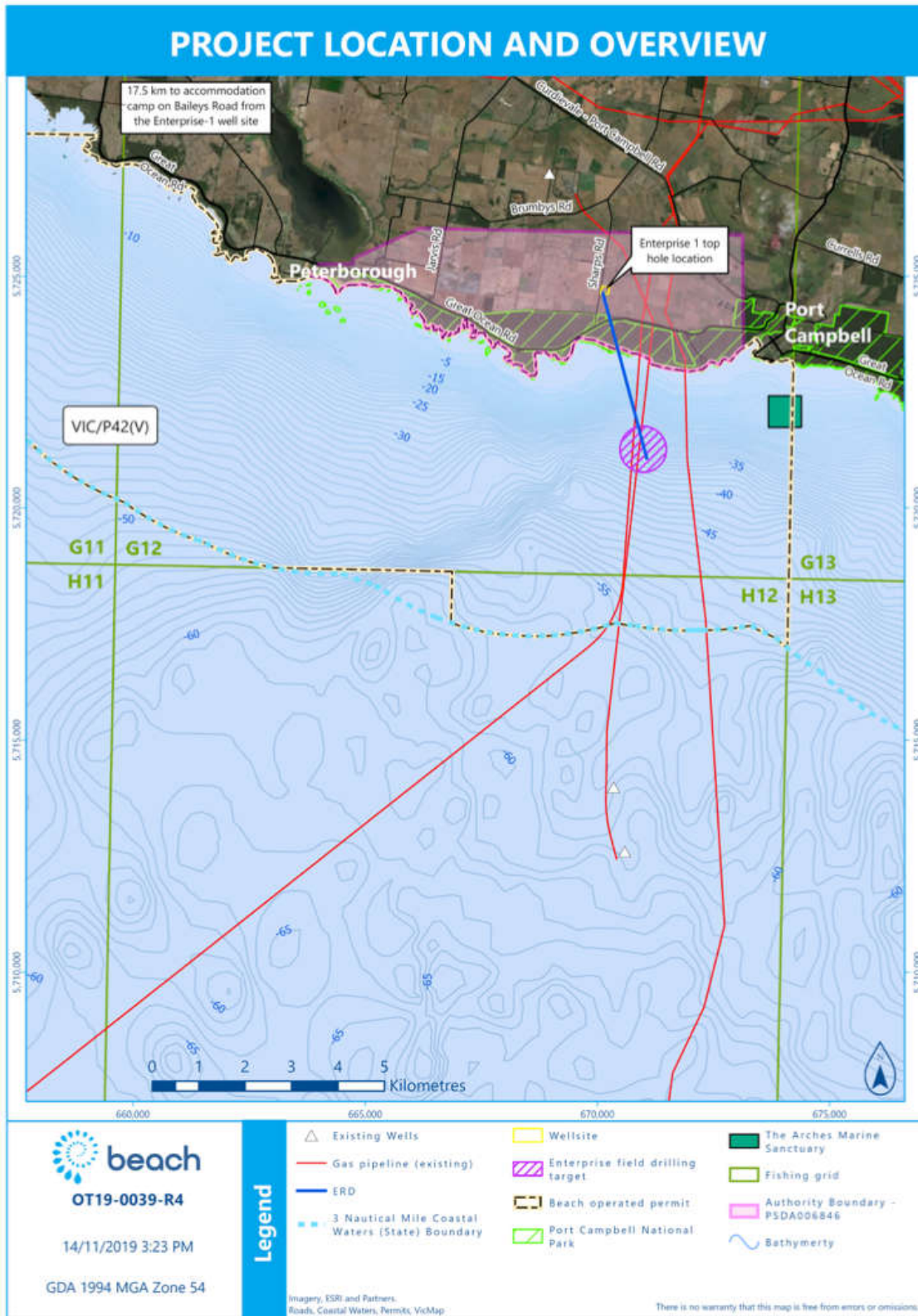


Figure 1: Project Location and Overview

2.2 Relevant Activities

This section describes the activities that are of most relevance to the offshore environment. As described below, the ERD methodology to be used removes interaction with the marine environment; however, activities which may interact with the coastal/offshore environment are still included in the following section for completeness.

2.2.1 Extended Reach Drilling

The Enterprise offshore gas reservoir target will be accessed by drilling from an onshore wellsite. The target is located approximately 3.5 km laterally from the wellsite (see Figure 1). Drilling will commence onshore approximately 1.1 km from the coastal high tide mark. The Enterprise-1 well path will begin to traverse beneath the onshore coastal section at a depth of 350 m below mean sea level (MSL) and will get progressively deeper until it crosses the coast at a depth approximately 1.3 km below MSL (Figure 2). The well path will continue to get progressively deeper until the well reaches a total depth of approximately 2.7 km below MSL depth (Figure 2), where the water depth is approximately 40 m. The Project concept is illustrated in Figure 3.

Beach will use specialised bottom hole assembly (BHA) equipment to steer the drill bit through to the gas reservoir target. The BHA tools provide directional control, geological information and drilling data in real time while drilling.

The Enterprise-1 well has been designed in accordance with the Beach Well Engineering Construction System (WECS). Several technical reviews of the well design have been completed, as well as utilising the experience of the successful drilling, completion and operation of Halladale-2, Speculant-1 and Speculant-2ST1 and planning for Black Watch-1 using the Ensign 931 drilling rig. Recognised industry experts have been engaged to make recommendations on project design issues such as directional drilling practices and drilling fluid design. Drilling the Enterprise-1 well from an onshore location reduces the complexity and logistics of the Project, limits susceptibility to weather delays, and significantly lowers the risk to the marine environment.

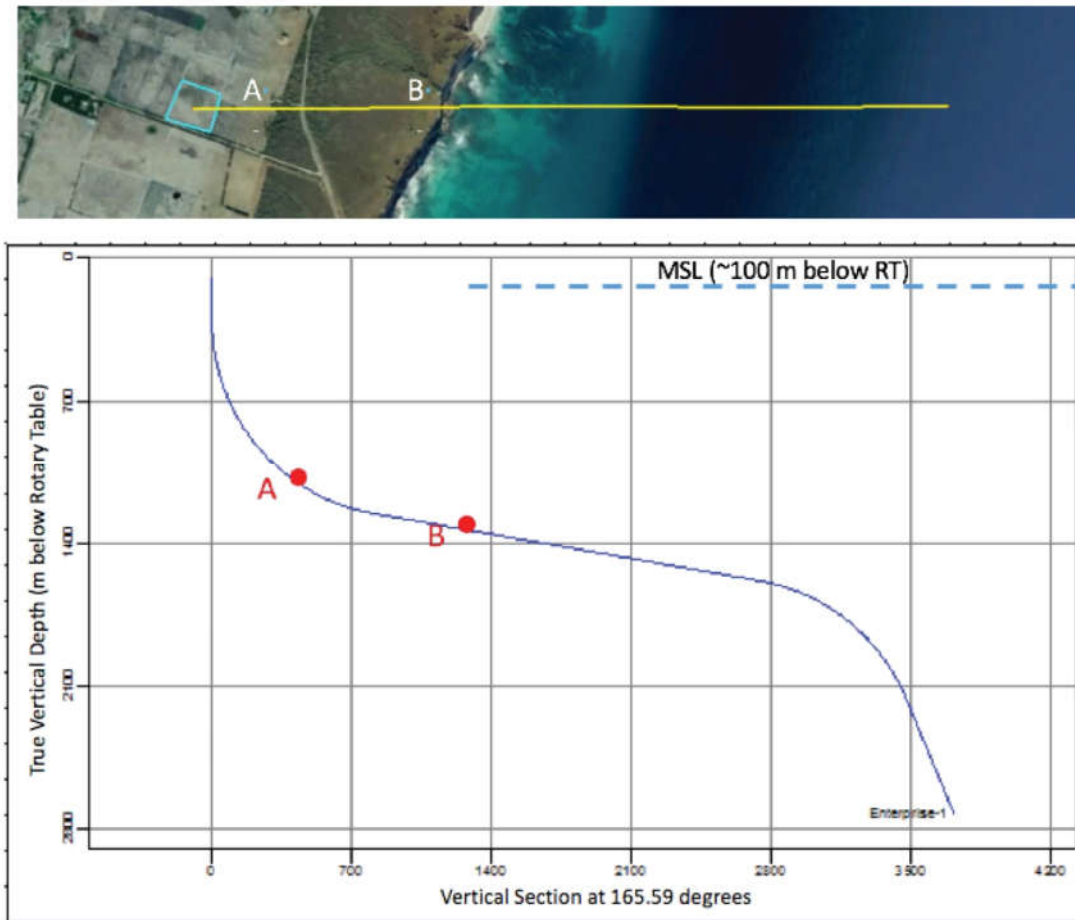


Figure 2: Enterprise-1 Exploration Well Reach Distance and Depth Profile*

*Figure for illustration purposes only. The trajectory is yet to be finalised and is subject to change.

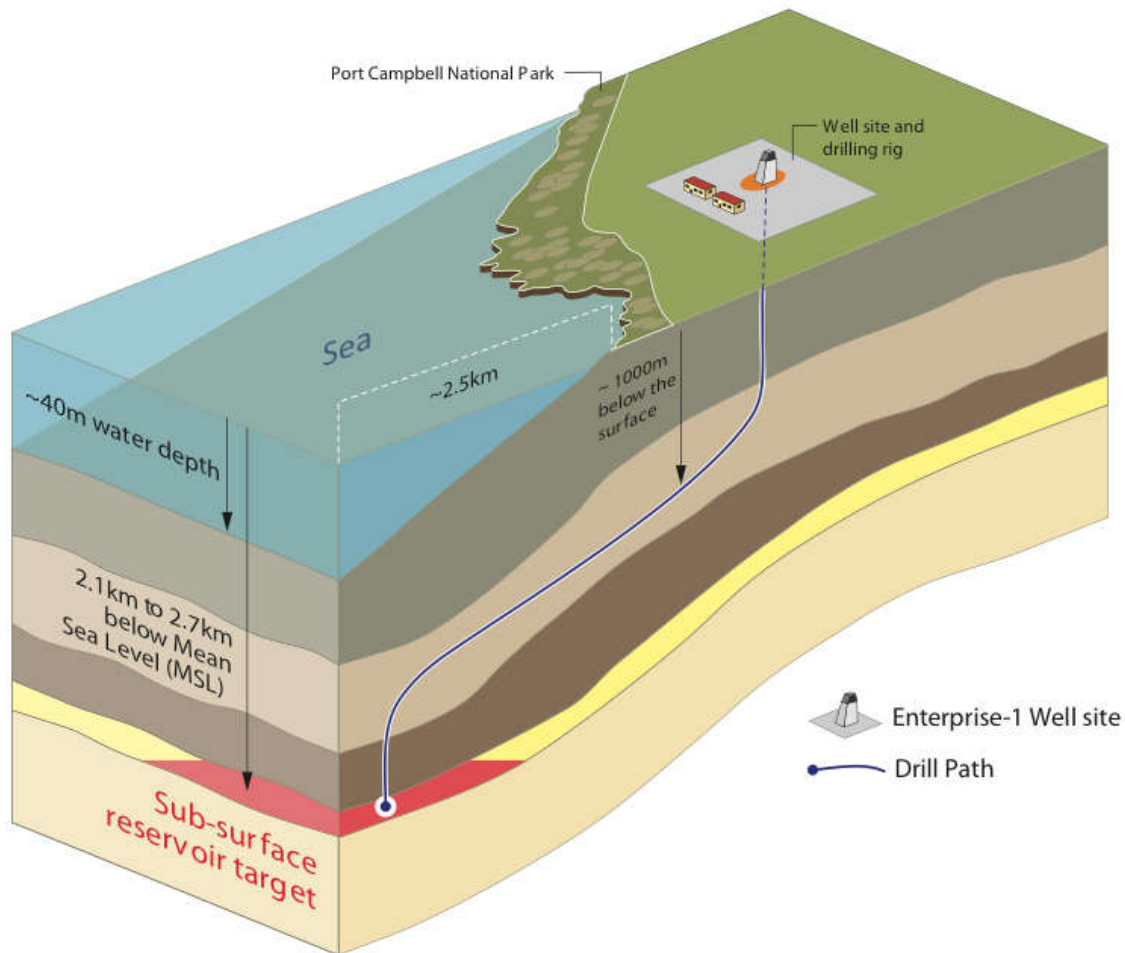


Figure 3: Conceptual Project Diagram

2.2.2 Drill Rig Equipment

Beach has contracted Rig 931 ('Rig'), operated by Ensign International Energy Services, to undertake the exploration drilling activities for Enterprise-1. Ensign operates the Rig under Ensign's Global Risk Management System Health Safety Environment and Security Manual (Version 3) and Rig standard operating procedures. Ensign 931 was utilised to drill the Halladale and Speculant wells and will be used for the Blackwatch-1 ERD program in 2020. The Rig is adequately specified to meet the drilling requirements of the well.

Drilling will continue on a 24 hour per day/7 days per week basis for a period of approximately 90 days. All onshore drilling activities will be confined to the wellsite inside a fenced area.

2.2.3 Drilling Fluids Program

Drilling fluids are used to transport drilling cuttings to the surface, prevent well-control issues, preserve wellbore stability, and cool and lubricate the drill bit and drill string during drilling. Both water-based mud (WBM) and synthetic based mud (SBM) will be required for the Enterprise-1 exploration well. Indicative information on the composition of WBM and SBM is listed in Table 2.

Table 2: Indicative Composition of WBM and SBM

Mud Type	Component	Function	Indicative Concentration (kg/m ³)
WBM (36", 24" and 17.5" hole)	Bentonite	Lubricity and hole stability (formation of filter cake)	60.0
	Caustic soda	pH control	0.3
	Polymers	Viscosity and gel strength for suspension of solids	3.0
	Potassium chloride	Shale stability (if required)	45.0
	Soda ash	Improve yield, gel strength and fluid loss properties	0.3
SBM (12.25" and 8.5" hole)	Ester base oil component	Lubricity and hole stability	240
	Olefin base oil component (synthetic paraffin)	Lubricity and hole stability	550
	Barite	Mud weight additive	100
	Viscosifier	Barite and cuttings suspension	5
	Calcium chloride	Mud weight additive	15.5
	Emulsifier	Stabilise fluid	1.4
	Fluid loss additive	Dehydration control	0.7
Completion Brine	Sodium chloride	Mud weight additive and inhibitor	165
	Oxygen scavengers	Corrosion control	20
	Biocides	Biodegradation control	20

Drilling fluid formulations are proposed by third party mud specialists to meet the Project health, safety and environment (HSE) and technical requirements. This is done by the following:

- Chemicals are proposed based on technical performance, then assessed based on their risk to environment and selected as outlined in the Beach WECS Standards.
- Reviewing the safety data sheets (SDS) for each product.

Water based mud will be used to drill the 36", 24" and 17.5" hole sections with an expected volume of around 1,000m³. Synthetic based mud will be used for the 12.25" and 8.5" hole sections, which are to be drilled through clay layers at high angle. The expected volume of SBM required is approximately 500 m³. The superior inhibition characteristics of SBM are critical to the success of the Enterprise-1 well due to the long open hole sections and the extended period the hole will

be exposed to the drilling fluid. The use of SBM will also reduce drag, torque and friction as a result of the improved lubrication that this type of fluid offers when compared to WBM.

Offset well data will be reviewed to ensure potential loss zones have been identified so that well designs, drilling parameters and lost circulation material (LCM) programs are implemented to limit any contamination of the environment.

Losses are most likely to be encountered in the top hole sections (WBM sections down to 17.5" hole). Fluid volumes are continually monitored and drilling parameters managed to minimise losses through these hole sections. To protect the shallow aquifers and maintain well integrity, loss control measures will be implemented in accordance with the procedures and strategies in the WECS.

At the completion of the drilling phase, the SBM will be displaced out of the wellbore in preparation for completion and testing operations. The SBM will be removed from the site in mobile tankers and processed by the drilling fluids supplier for future re-use. The mud tanks will be cleaned and all SBM and waste captured will be removed from site by Beach's licensed waste disposal company.

2.2.4 Cuttings Management

Shale shakers will separate cuttings and fluids. Water based mud cuttings and residual WBM will be transferred from the cuttings chute to secondary solids control equipment to recycle residual fluids. Cuttings from the secondary control equipment will be collected and transported to an EPA licensed waste facility or to the lined sump adjacent the Rig. A 1-m freeboard will be maintained in the sump and a vacuum truck will be used to empty the sump if sediment reaches the 1-m freeboard mark and it will then be transported to an EPA licensed waste facility.

SBM cuttings circulated to surface will exit the fully enclosed mud system at the Rig's shakers and will then be further separated from the liquid SBM by means of additional mechanical separation (centrifuge/cuttings dryer). The SBM cuttings will be transferred to enclosed holding bins. Spillage of SBM from the separation process will be contained on plastic matting below the Rig floor and Rig tank area.

Haulage of SBM cuttings will be managed and operated by an approved Waste Management Contractor to transport the bins containing dry SBM cuttings offsite to a licensed Victorian EPA waste facility. Any SBM liquid waste will be transported by fully enclosed vacuum trucks to a licensed Victorian EPA waste facility. Surplus unused SBM will be returned to the supplier.

2.2.5 Casing Designs

The casing design for Enterprise-1 was generated in accordance with the Beach WECS. The casing placement has been selected as below:

- The 30" conductor casing will be set at sufficient depth to isolate the shallow aquifer zones in the Port Campbell Limestone, to avoid washout under the Rig when drilling the subsequent 24" hole section, approximately 50 m deep (± 20 m).
- The 18 5/8" casing will be set in the Narrawaturk formation to isolate any unstable zones and losses in the upper Gellibrand Formation.
- The 13 3/8" casing in the Massacre Shale with good leak off test results, therefore providing adequate kick tolerance when drilling the 12 1/4" section into the reservoir (isolating shallower aquifers including the Dilwyn and Pebble Point formations)
- The 9 5/8" casing will be set at the top of the reservoir target.

- A 5.5" liner will be set across the reservoir.

The casing will be selected to mitigate well integrity issues due to casing corrosion as per the WECS Standards.

2.2.6 Cementing Program

The cement will be placed as per the Beach WECS standard to ensure isolation of aquifers and reservoir sections to ensure well integrity. The 30" conductor casing will be cemented from the base of the 36" conductor hole section to ground level for aquifer protection (from surface). To ensure these objectives are met, an excess of up to 200% cement will be pumped down hole. In the event that this volume does not provide cement returns a top-up job will be conducted from surface down the annular space between the 30" conductor and open hole.

The 18 5/8" casing will be cemented from the base of the 24" hole section to the base of the cellar for well integrity and aquifer protection purposes. To ensure these objectives are met a 100% cement excess will be pumped down hole.

The 13 3/8" casing will be cemented from the base of the 17 1/2" hole section to the 18 5/8" casing shoe for well integrity and aquifer protection. To ensure these objectives are met a 30% cement excess will be pumped down hole.

The 9 5/8" casing will be cemented to isolate any permeable gas bearing zones in the 12 1/4" hole. To ensure these objectives are met a 30% excess will be pumped down hole.

2.2.7 Aquifer Protection – Conductor and Surface Hole Section

Protection of the aquifer zones will be managed by the:

- Use of a WBM system for shallow aquifers.
- Monitoring of mud returns at surface to determine if losses are occurring and at what rate.
- Use of LCM to stop losses.
- Isolation of aquifer systems via casing and cement to ensure they are not exposed while drilling subsequent hole sections.

2.2.8 Well Control

Beach's WECS Standards are the internal mandatory requirements which dictate how wells are to be designed and constructed. The WECS Standards provide the standards that well designs and operations must conform to, to ensure fit-for-purpose wells delivery with integrity assurance at all lifecycle stages (construction, maintenance, production, suspension and abandonments).

2.2.9 Well Completion

After the exploration drilling phase is finalised Beach will assess whether the Enterprise-1 prospect should be brought into production. If it is determined that the well is not economic while the Rig is on location, the well will be plugged and abandoned, and the Rig will be demobilised. If the decision is made to proceed to completion and well testing (post rig operations) and the resource is subsequently found to be uneconomic, the well will be suspended until a suitable rig is remobilised to site to plug and abandon the well.

If the well is not to be plugged and abandoned, the Rig will cement the production liner across the target interval to the well total depth or a dedicated lower completion will be installed. The completion may consist of:

- A standalone installation of screens and base pipe relying on packers for zonal isolation.
- A cemented liner that will be perforated subsequently for production.

After the lower completion is installed, wellbore clean-up operations will be undertaken to remove debris from the well and to displace the drilling SBM with a kill weight completions brine. The upper completion will then be installed in the well with the production packer set above the primary target. After the upper completion is run, the temporary Christmas tree will be installed and pressure tested and preparations will be made at site to undertake the subsequent well testing operations.

2.2.10 Well Clean-up and Flow Testing

It is not planned to flare the well during the drilling phase which ends once total depth on the well has been reached and hole conditioning operations are completed. Upon completion of drilling, well clean-up will be undertaken to remove remaining drilling fluids. This will involve some flaring of associated gas from the reservoir. Flow testing will occur for up to four days and will be undertaken to reduce formation impairment and to measure flow-rate of well effluent. During flow testing the well fluids (liquid and gas) may be either flared in the flare pit or captured for later disposal. The well test separator will capture any liquids prior to flaring. Following well testing the sacrificial clay liner and high-density polyethylene (HDPE) liner from the flare pit will be removed and disposed of at an EPA licensed waste facility and the flare pit will be rehabilitated.

2.2.11 Associated Activities

The storage and use of fuels and chemicals will be managed to minimise the risk of an accidental release and measures will be promptly implemented to address these impacts should a release occur.

Oil fuel, chemicals and other hazardous substances will be stored in designated areas with secondary containment measures in accordance with SDS and legislative requirements.

All hazardous chemicals, corrosive substances, toxic substances, gases, dangerous goods and flammable and combustible liquids will be stored and handled in accordance with the relevant legislative requirements and Australian Standards.

2.2.12 Waste Management

The Project contractors will comply with the requirements of the Health Safety Environment Management System (HSEMS) Standard 19 Waste Management, Environmental Effects and Management.

The Waste Management Plan (WMP) developed for Project activities complies with the *Environment Protection Act (1970)* Victoria, and *Environment Protection (Industrial Waste Resource) Regulations 2009*, applying the waste management hierarchy including avoidance, reduction, reuse, recycling, recovery, treatment and disposal. The WMP addresses both general and hazardous wastes generated by Project activities.

The total containment, transport, disposal and cleaning process of cuttings will be executed by a waste management contractor that has met HSE pre-qualification requirements, has a proven and robust management system in place and is experienced with executing the work scope.

2.2.13 Christmas Tree

Upon completion of drilling activities, a temporary Christmas tree may be constructed on the wellhead if the Enterprise-1 well is successful. The temporary Christmas tree will allow the well testing and suspension, awaiting change out to a production tree of suitable material specification to allow for future production.

2.2.14 Field Development Schedule

The drilling of Enterprise-1 is anticipated to commence in April 2020. The well testing and well completions activities are planned to take place in June 2020.

3 Existing Environment

Due to the application of the ERD methodology no activities will occur within the marine environment. As such, description of the offshore environment is not discussed in the EP, as no impacts on marine life are expected from drilling activities at these depths. Despite limited information being available for drilling noise in isolation of platform noise, source levels are generally low, with studies having been conducted on sources such as geotechnical drilling operations (Erbe and McPherson, 2017). When the drill rig is situated on land, and the drill string is entirely below the seafloor (as will be the case for the Project), the only potential noise source in the marine environment would be vibration from drilling translated into the water column through the seafloor. For the Enterprise-1 well, the drill string will be between 1.3 and 2.7 km below the seafloor. At such depths, attenuation within the underlying seabed material will result in negligible vibration being perceived at the seafloor and as such negligible sound will be emitted into the water column (C. McPherson (JASCO), pers. comm., January 2020). Therefore, noise and vibration produced from subsurface drilling activities will not be above the range for ambient conditions in the nearshore marine environment. Impacts to marine fauna are therefore not expected.

The existing environment description below summarises the onshore location for reference, with the broader geology, landform and groundwater environment also summarised for context.

3.1 Physical Environment

3.1.1 Climate

The climate of the region is temperate and characterised by warm, dry summers and cool wet winters. Prevailing winds of the Project area are from the north to northwest in the mornings and south to southwest in the afternoons.

3.1.2 Geology and Landforms

The Project is located in the South East Coastal Plain Bioregion which includes the Gippsland Plain, Otway Plain and Warrnambool Plain. The Project area is within the Warrnambool Plain, characterised by a cliffed coastline and low calcareous dune formations, dissected by rivers, inlets and swamplands (DELWP, 2018)

The Project area is located in geomorphological unit 6.2.2 – dissected plains (Heytesbury) which features ridges and swales and curved tributaries which run northwest to southeast, perpendicular to rivers draining southwest (Agriculture Victoria, 2019).

Soil types in the dissected plains (Heytesbury) region include acidic mottled texture contrast soils (Kurosols), acidic gradational soils (Dermosols), some sandy and some with high organic matter content (Podosols).

The Enterprise-1 well path will be drilled from the onshore top-hole location (within Port Campbell Limestone) to the offshore gas-bearing sands of the Upper and Lower Waarre Formation, a sequence of marginal marine to fluvial-deltaic sandstones, siltstones and mudstones.

3.1.3 Surface Water Environment

There are some modified and natural ephemeral drainage lines and sinkholes in the surrounding area; however, no permanent surface water flows exist within the immediate vicinity of the wellsite. The ephemeral drainage lines generally run northeast to southwest terminating at the coast or into the Peterborough Coastal Reserve located 5 km to the west. The sinkholes which dot the area may hold water for most of the year, while others drain quicker.

3.1.4 Groundwater Environment

The Project area is located within the Hopkins Corangamite groundwater catchment in the Otway Basin and falls within the South West Limestone Groundwater Management Area (SWL GMA) which applies to the management of groundwater in the southwest Victorian upper mid-Tertiary limestone aquifer. The limestone aquifer in this region falls entirely within the Otway-Torquay Basin and extends across parts of the Glenelg, Portland and Hopkins-Corangamite groundwater catchments. Groundwater flow is generally from the north to the south, discharging across the coast.

Groundwater resources in the SWL GMA are important for domestic and stock use, irrigation, commercial and industrial purposes, urban supply and the environment. These aquifers currently provide approximately 50% of the total water used for farming, industry and potable water supplies for cities and towns in the region. Groundwater extraction within the SWL GMA occurs predominantly from the Port Campbell Limestone which is used extensively for pasture irrigation, stock and domestic use in this area. The aquifer usage is covered by regulations within the South West Limestone Local Management Plan and groundwater extractions from the aquifer are capped.

The deep aquifers are also recognised as significant water resources and the main groundwater aquifer relevant to the Project area is the Dilwyn Formation Aquifer, a lower Tertiary Aquifer, which occurs below the Port Campbell Limestone Aquifer. The Dilwyn Formation Aquifer is separated by over 300 m of low permeability calcareous clays belonging to the Gellibrand and Narrawatuk Marls. This aquifer provides town water for Port Campbell and Peterborough as well as Dartmoor, Heywood, Timboon, Portland and Port Fairy and is managed through the Paaratte Local Management Plan.

The drilling activities will intersect the Port Campbell Limestone, Clifton Formation and the Dilwyn Formation aquifers and potentially the Gellibrand Marl, Mepunga Formation and Pebble Point Formation aquifers. The Port Campbell Limestone aquifer is assessed to extend to a depth of approximately 80 m below the wellsite. Between the base of the Port Campbell Limestone and the top of the Dilwyn Formation there is estimated to be a thickness of about 463 m of Heytesbury Group and Nirranda Group strata, which are primarily low permeability formations but may contain minor aquifer units. The Dilwyn Formation is assessed to be encountered at approximately 480 m depth and has a thickness of approximately 240 m.

3.2 Biological Environment

The Project is located within the Warrnambool Plain bioregion, characterised by a distinctive cliffed coastline and low calcareous dune formations, dissected by rivers, inlets and swamplands. Almost none of the historic vegetation remains due to a long history of agricultural development for dairy farming.

The wellsite is located on privately owned agricultural (pastoral) land. Almost all native vegetation has been cleared and replaced by predominantly exotic grasses. In contrast, the road reserve of Sharps Road supports native vegetation along almost its entire length. Breaks in this vegetation occur where existing entry points to the property on the eastern side of Sharps road have been established. The Sharps Road road reserve likely offers important habitat for local fauna species and provides connectivity to the Port Campbell National Park (PCNP) located around 400 m to the south of the Project area.

3.2.1 Flora

There are two distinct vegetation communities within the Project area. One of these communities is found within the private property and the other is found within the Sharps Road road reserve.

Field surveys (Ecolink, 2019) recorded 39 exotic flora species within the private property. As a result of historical use as a dairy farm, the wellsite contains very few, if any, native plant species. The dominant exotic grasses include perennial rye grass (*Lolium perenne*), cocksfoot (*Dactylis glomerata*), couch (*Cynodon dactylon var. dactylon*), bromes (*Bromus* spp.), and

annual meadow grass (*Poa annua*), which make up an estimated 75% of vegetation cover. Other exotic plants recorded include capeweed (*Arctotheca calendula*), ribwort (*Plantago lanceolata*), spear thistle (*Cirsium vulgare*) and flatweed (*Hypochaeris radicata*). No native flora was observed within the private property.

In contrast, the Sharps Road road reserve contains a mix of native and exotic species (34 and 29 respectively). Native vegetation generally dominated the road reserve with overstorey species including brown stringybark (*Eucalyptus baxteri*) and messmate stringybark (*Eucalyptus oblique*), and a midstorey of shrubs including silver banksia (*Banksia marginata*), coast beard-heath (*Leucopogon parviflorus*), prickly tea-tree (*Leptospermum continentale*), and scrub sheoak (*Allocasuarina paludosa*). Compared to ecological vegetation class benchmarks, the understorey did not include a substantial number of small shrubs, but did contain austral bracken (*Pteridium esculentum*) and coast saw-sedge (*Gahnia trifida*). The surveyed extent of the road reserve contained both high and low quality native vegetation.

Exotic flora found within the road reserve included exotic grasses kikuyu (*Cenchrus clandestinus*), panic veldt-grass (*Ehrharta erecta*) and some of the pasture grasses found within the private property. Blackberry (*Rubus fruticosus* spp. agg.) was also present, although this appeared to have been largely killed by herbicide application.

None of the observed flora species are considered threatened, and no threatened flora has been previously recorded along the Sharps Road road reserve. Thirty-two threatened flora species are however known to or potentially occur in the local area and these have been identified in Section 3.2.4. While no threatened flora species were recorded in the Sharps Road road reserve, flora protected under the Flora and Fauna Guarantee Act 1988 (FFG Act) does occur. Protected flora include relatively common species such as the wattles, daisies and heaths. There were 65 instances of protected flora recorded along the road reserve which included mostly coastal beard-heath (*Leucopogon parviflorus*, 51 individuals) as well as myrtle wattle (*Acacia myrtifolia*, 4 individuals), hop wattle (*Acacia stricta*, 1 individual), prickly moses (*Acacia verticillata*, 3 individuals), scented paperbark (*Melaleuca squarrosa*, 2 individuals) and Austral grass-tree (*Xanthorrhoea australis*, 4 individuals).

3.2.2 Fauna

Field surveys (Ecolink, 2019) recorded the presence (or evidence) of 27 fauna species during surveys of the private property and road reserve (Table 3). Fauna recorded included 20 native and 4 introduced bird species, and 1 native and 2 introduced mammal species (Ecolink, 2019). Very few observations occurred within the private property, most observations were of birds within the Sharps Road reserve. It is likely that the Sharps Road reserve also provides habitat to nocturnal tree-dwelling mammals (e.g., possums and bats). Further, it is expected that common reptile species would also occur within the study area when moving between habitats. None of the observed species are considered threatened. Although, as for flora species, a number of threatened fauna species are predicted to occur within the local area (predominantly from the PCNP).

Table 3: Fauna Species Recorded in the Project Area in Spring 2018

Category	Common Name	Species Name
Native Birds	Australasian Grebe	<i>Tachybaptus novaehollandiae</i>
	Australian Shelduck	<i>Tadorna tadornoides</i>
	Pacific Black Duck	<i>Anas superciliosa</i>
	Little Pied Cormorant	<i>Microcarbo melanoleucos</i>
	Masked Lapwing	<i>Vanellus miles</i>
	White-necked Heron	<i>Ardea pacifica</i>
	Long-billed Corella	<i>Cacatua tenuirostris</i>
	Crimson Rosella	<i>Platycercus elegans</i>

Category	Common Name	Species Name
	Superb Fairy-wren	<i>Malurus cyaneus</i>
	Brown Thornbill	<i>Acanthiza pusilla</i>
	White-browed Scrubwren	<i>Sericornis frontalis</i>
	Yellow-faced Honeyeater	<i>Lichenostomus chrysops</i>
	New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>
	Grey Fantail	<i>Rhipidura albiscapa</i>
	Grey Shrike-thrush	<i>Colluricincla harmonica</i>
	Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>
	Australian Magpie	<i>Cracticus tibicen</i>
	Little Raven	<i>Corvus mellori</i>
	Fairy Martin	<i>Petrochelidon ariel</i>
	Silvereye	<i>Zosterops lateralis</i>
Native Mammals	Eastern Grey Kangaroo	<i>Macropus giganteus</i>
Introduced Fauna	Eurasian Skylark	<i>Alauda arvensis</i>
	Common Starling	<i>Sturnus vulgaris</i>
	House Sparrow	<i>Passer domesticus</i>
	European Goldfinch	<i>Carduelis carduelis</i>
	Cat	<i>Felis catus</i>
	Rabbit	<i>Oryctolagus cuniculus</i>

Bass Strait and the nearshore coastal environment provide habitat for a range of migratory bird species which could utilise the nearby terrestrial environment. There are 50 listed threatened and or migratory species with potential to occur in the area. An additional seven non-threatened migratory bird species may also occur in the Project area. Threatened and migratory fauna are discussed further in Section 3.2.4.

Two significant hooded plover (*Thinornis rubricollis*) nesting sites exist on Clifton (14 km southeast) and Rivernook beaches (20 km southeast). Mutton Bird Island (8 km southeast) also supports a breeding colony of short-tailed shearwaters (*Puffinus tenuirostris*). The Twelve Apostles Marine National Park provides feeding and roosting habitat for 11 threatened bird species including the wandering albatross (*Diomedea exulans*), little egret (*Egretta garzetta*) and Australian bittern (*Botaurus poiciloptilus*).

3.2.3 Port Campbell National Park

The PCNP contains some of the most important areas of native vegetation remaining between Portland and the Otways. The park forms a narrow coastal strip and contains a range of remnant coastal vegetation types including important coastal heathlands, shrubby sand dunes, clifftop grasslands and shrublands, open forests, woodlands and swamps. The diversity of environments support a high diversity of plants within the park and provides a valuable link between other patches of remnant vegetation in the area. In the surrounding region there has been extensive depletion of native vegetation and many plant species in the area are of regional significance. Retention of the adjoining nature of the vegetation within the regional protected area is important in ensuring that sub-populations of species do not become internally isolated (Parks Victoria, 1988).

Sites of botanical significance have been identified in the PCNP (Parks Victoria, 1988). Species of national significance include the scented spider-orchid (*Caladenia fragrantissima*), swamp greenhood (*Pterostylis tenuissima*), clover glycine (*Glycine latrobeana*), wingless raspwort (*Haloragis exalata* subsp. *exalata*), lime fern (*Pneumatopteris pennigera*), and metallic Sun-orchid (*Thelymitra epipactoides*). Eight species of state significance have also been identified within the park.

The PCNP supports small populations of nationally significant fauna species such as the nationally threatened hooded plover (*Thinornis rubricollis*) (also FFG Act listed) and twelve species of state significance including important populations of rufous bristlebird (*Dasyornis broadbenti*) (also FFG Act listed), swamp antechinus (*Antechinus minimus maritimus*), swamp skink (*Lissolepis coventryi*) and glossy grass skink (*Pseudemoia rawlinsoni*). Well-established tea-tree heathlands are important to the rufous bristlebird, while wetland areas provide food and nesting sites for the Australian bittern (*Botaurus poiciloptilus*), Lewin's rail (*Rallus pectoralis pectoralis*) and swamp skink. Dense vegetation within the park provides shelter for eastern grey kangaroos which frequently move into nearby farmland to feed (Parks Victoria, 1988).

The proposed Project activities will involve extended reach drilling which will extend beneath the PCNP with the well trajectory reaching no closer than 1,000 m below the PCNP, shown in Figure 2 (Section 2).

3.2.4 Threatened Ecological Communities and Threatened and Migratory Species

Three nationally threatened ecological communities were identified as potentially occurring within 5 km of the Project area. This included Giant Kelp Marine Forests of South East Australia, Subtropical and Temperate Coastal Saltmarsh and Assemblages of Species Associated with Open-coast Salt Wedge Estuaries of Western and Central Victoria. No direct or indirect impacts to these ecological communities are expected to occur from the Project activities which are either not found in the local area or are outside the area that may be impacted by the Project.

Threatened species are those listed as threatened under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), FFG Act or listed on the Department of Environment Land Water and Planning (DELWP) threatened species advisory lists. Migratory species are those listed under the EPBC Act. There were 96 species of threatened terrestrial fauna, flora and migratory bird species identified with potential to occur within 5 km of the Project area which included 50 birds, 2 frogs, 9 terrestrial mammals, 32 plants, 2 reptiles and 1 invertebrate. Figure 4 shows the location of observations of threatened terrestrial flora and fauna and migratory birds recorded within 5 km of the wellsite obtained from the Victorian Biodiversity Atlas (DELWP, 2019). Note that this figure does not include marine fauna records as there are no Project activities within the marine environment.

Targeted flora surveys conducted in spring 2018 and 2019 confirmed that threatened flora were not found on the wellsite or within the disturbance footprint required for the construction of the wellsite access point (Ecolink, 2019). Of the threatened and migratory fauna identified as potentially occurring in the Project area, those that could be potentially impacted by the Project were the chestnut-rumped heathwren (*Calamanthus pyrrhopygius*), rufous bristlebird (*Dasyornis broadbenti*), white-footed dunnart (*Sminthopsis leucopus*), southern brown bandicoot (*Isodon obesulus obesulus*) and swamp antechinus (*Antechinus minimus maritimus*).

While the orange bellied parrot, southern bent wing bat and growling grass frog have been threatened species of interest to other similar projects in the region, these species are considered unlikely to occur on the wellsite or along the Sharps Road road reserve and so were not considered relevant to the Project.

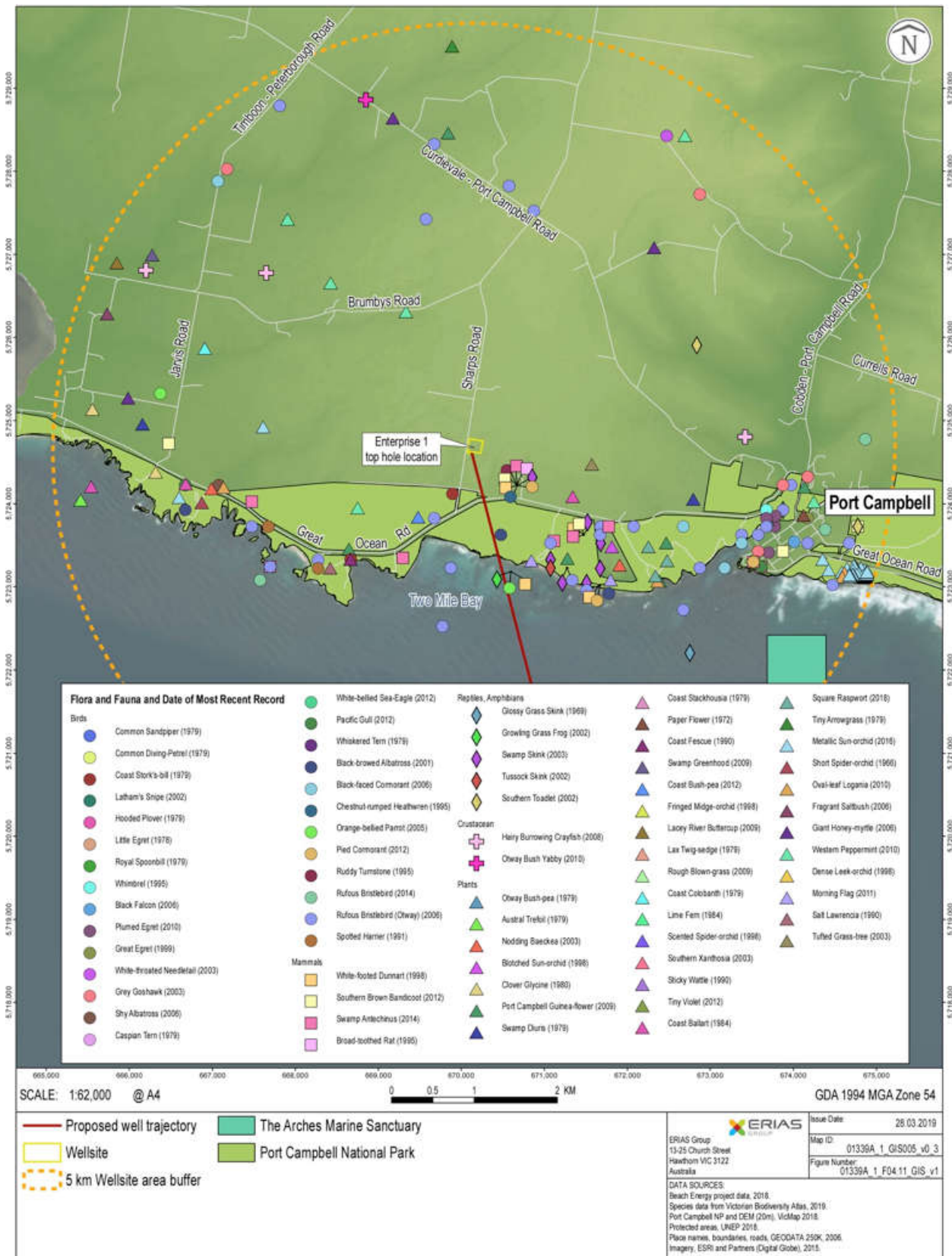


Figure 4: Threatened Terrestrial Flora and Fauna and Migratory Birds Recorded Within 5 km of the Wellsite

3.2.5 Invasive/Introduced Species and Pathogens

Three weed species that are listed as 'noxious' within the Glenelg Hopkins Catchment Management Area, approximately 60 km west of the wellsite, were present within the study area. These included African boneseed (*Chrysanthemoides monilifera* subsp. *Monilifera*) and blackberry (*Rubus fruticosus* spp. *agg.*) which are listed as 'Regionally Controlled' within the catchment, as well as variegated thistle (*Silybum marianum*) which is listed as 'Regionally Restricted' within the catchment. The proponent is required to 'control the spread' of all 'Regionally Controlled' species from their property, and there are limitations on taking and trading 'Restricted' species (Agriculture Victoria, 2017). African boneseed and blackberry are also listed as 'Weeds of National Significance', although there are no legislative obligations to manage weeds under this listing.

Phytophthora (*Phytophthora cinnamomi*), commonly known as dieback, is an introduced water mould that attacks the root system of susceptible native plants. This can have direct effects on flora and indirect effects on other fauna species that rely on the plants for food or shelter. Dieback is predominantly spread through anthropogenic means, such as the transportation of contaminated plants or soils (either when imported as bulk material or attached to earthmoving machinery). Dieback is listed as a threatening process under the FFG act.

3.3 Socio-economic Environment

The regional economy of southwest Victoria is dominated by primary industry such as grazing (sheep and beef and dairy cattle), broad-acre cropping, forestry, and fishery. In total, these key industries account for 57% of the jobs in the region. The Project is located within the Corangamite Shire where agriculture, forestry and fishing are the largest industry sectors, with the dairy industry at its core, which supports other industries such as agricultural services, transport and logistics and manufacturing.

The wellsite is located on a conventionally managed intensive dairy farm which is divided into small grazing paddocks to facilitate grazing and pasture management. The landholder runs a closed herd of milking cows. Paddocks adjacent the dairy are used as 'night paddocks' for the cattle. Calving season occurs from May to August.

Near neighbours on adjacent farms and blocks include dairy farming and other land use activities such as sheep farming, beef grazing and hobby farms. There are also three residential properties nearby.

3.3.1 Petroleum Exploration and Production

The southwest Victoria region has a long history of gas exploration and development projects both onshore and offshore. The first wells were drilled in the Otway Basin from the 1920s to 1940s in the Anglesea and Torquay areas. The first commercial oil and gas discoveries in the Otway Basin (Port Campbell region) commenced with the North Paaratte Field in 1979. Onshore gas production from the Victorian Otway Basin commenced in 1986 when production began from the North Paaratte field. In 1988 Beach discovered the Iona gas field within the Port Campbell Embayment, which commenced production in 1992.

Offshore Otway Basin exploration and development activities accelerated with the discovery of commercial gas accumulations at Geographe and Thylacine in 2001. These successes were rapidly followed by the Casino discovery in 2002 and Blackwatch, Henry and Halladale in 2005. The Halladale/Speculant discovery in 2014 is the most recent development to provide gas to the energy market in southeastern Australia. To date more than 300 wells have been drilled within the Victorian portion of the Otway Basin (Mehin and Kamel, 2002).

3.3.2 Primary Industry

Primary industry dominates land use within the Corangamite Shire, with agriculture employing just under one third of the shire population. Sheep, grains, beef and dairy cattle are the largest subsectors. The Corangamite Shire is the largest milk producer in the South-West Victorian Dairy region.

Forestry and fisheries are also key industries in the region, with major timber processing industries in Portland, Milltown and Colac. Key fisheries in the region include abalone and southern rock lobster. A variety of finfish and eels are also caught and abalone farms are found in the far west. Recreational fishing is also popular in the region.

3.3.3 Tourism

Tourism is a major economic driver for Corangamite Shire, particularly along the southern coast and hinterland region. This is driven by iconic attractions along the Shipwreck Coast including the Twelve Apostles, the Great Ocean Road and The PCNP and other natural features such as craters and lakes. The accessible coastline provides recreational activities for locals and visitors, including fishing, surfing and hiking. Peak tourism occurs in the warmer months from November to April.

3.4 Cultural Environment

3.4.1 Aboriginal Cultural Heritage

As the Project is considered a high impact activity under the *Aboriginal Heritage Regulations 2018* and the well path passes below an area of cultural heritage sensitivity, a Cultural Heritage Management Plan (CHMP) has been developed and was approved by Aboriginal Victoria in July 2019 (CHMP 16255).

During the site assessment one subsurface stone artefact was located within one excavation pit on a rise (inside the wellsite boundary) during the complex assessment. This artefact comprised a flint flake, identified at a depth of 200 to 250 mm in sandy silt. No other Aboriginal cultural heritage was identified during the assessment.

The Project area falls within a registered Native Title claim by the Eastern Maar People (VC2012/001). The claim asserts rights for Eastern Maar People to access and use Crown land for traditional purposes including protecting sacred sites, holding ceremonies, hunting, fishing and camping in accordance with existing laws. The area under negotiation stretches from near Port Fairy along the Great Ocean Road, up to Ararat in the north, and to Colac in the East.

3.4.2 Non-aboriginal Cultural Heritage

Two sites of national significance are located within the Project area. This includes the Great Ocean Road and Scenic Environs (listed on the National Heritage List and protected under the EPBC Act) and the Great Ocean Road listed on the Heritage Register. The well will pass under these heritage places at a depth of approximately 1,000 m below the surface so no impacts to these heritage places are anticipated.

The closest known shipwreck to the Project area is the *Newfield*, a barque, which sunk in 1892, located one mile east of Curdies Inlet, other shipwrecks to the west of the *Newfield* include the *Schomberg* (1855) and *Falls of Halladale* (1908). To the east of the Project area are the *PS Napier* (1878) and the *Loch Ard* (1693), one of Victoria's best known shipwrecks. As there will be no marine activities associated with the Project no impacts to these shipwrecks are anticipated.

4 Stakeholder Consultation

4.1 Stakeholder Engagement Plan

Beach has prepared a Stakeholder Engagement Plan (SEP) for the Enterprise-1 Exploration Drilling Program to engage with stakeholders enabling matters raised to be considered and addressed as appropriate within the EP. The objectives of the SEP are to:

- Meet regulatory compliance requirements for stakeholder consultation.
- Achieve and maintain social licence for the program.

The SEP includes the method and procedures for engagement with community stakeholders to facilitate preparation of operations and environment plans (among others) required for Victorian State Government regulatory approvals.

Beach has prepared a Landholder Engagement Plan for engagement with Enterprise-1 Exploration Drilling Program landholders which sets out a strategic approach to identifying and mitigating impacts, based on the location of the wellsite and nature of adjacent farming operations by the landholder.

A process for feedback, complaints, claims or grievances is managed in accordance with the Beach Feedback and Complaints Procedure.

4.1.1 Identification of Stakeholders

The Beach - Otway stakeholder database is a comprehensive list of parties who have been identified in previous projects as impacted, involved, interested or, to be informed. The stakeholder database was reviewed for the preparation of the Enterprise-1 Exploration Drilling Program SEP and additional desktop research was carried out to identify further stakeholders. The stakeholder groups identified are listed in Table 4.

Table 4: Stakeholder Identification

Stakeholder	Functions and Activities
Impacted stakeholders	
Primary landholders	Farm production, farm planning and management.
Secondary landholders adjacent to primary landowners	Farming with residents on farm. Small lifestyle allotments.
Other near neighbours	Farming with residents on farm. Small lifestyle allotments. Tourism accommodation and business.
Tourism Businesses and Associations	Accommodation, retail, restaurants, boat charter, motor touring, tour guides, event organisers, helicopter flights, etc.
Involved stakeholders	
Beach staff and contractors	Work at Otway Gas Plant and live locally.
Otway Gas Plant (OGP) - Community Reference Group	Community engagement forum for Otway Gas Plant, surrounding assets and projects. Chaired by Corangamite Shire Councillor.
Corangamite Shire Council	Administer local planning laws and approvals.
Moyne Shire Council (accommodation camp)	Administer local planning laws and approvals. Led Community Engagement Committee for the HBWS project.

Stakeholder	Functions and Activities
Eastern Maar Aboriginal Corporation	Traditional owner group who are party to an Indigenous Land Use Agreement with Beach relating to OGP and PL250 pipeline route.
Country Fire Authority (South West Regional Commanders; Port Campbell, Peterborough, Nirranda South, Nullawarre, Timboon)	Volunteer fire prevention and response.
Parks Victoria - Port Campbell	Manage Port Campbell National Park, boat ramps and public beach access.
Vic Roads – Regional Roads	Peak industry body for Victorian country roads.
Wannon Water	Regional water and sewerage authority.
Southern Rural Water	Regional rural water authority.
Other stakeholders	
Government/Agencies	
now Department of Jobs, Precincts and Regions (DJPR)	Victorian state economic development. Assessment agency for State waters Environment Plan.
Department of Environment, Land, Water and Planning (DELWP)	Protection and preservation of Victoria's native landscape.
Commonwealth Department of Environment and Energy	Protection of matters of National Environmental Significance.
Parks Victoria	Management of state parks, reserves and waterways.
National Parks Advisory Council (NPAC)	Legislated advisory body to the Minister.
Regional Development Victoria	Warrnambool office servicing Moyne Shire and Geelong office servicing Corangamite Shire. Oversees state funding for regional projects.
Aboriginal Victoria	Protection of native title and cultural heritage.
Port Campbell Visitor Information Centre	Local government run tourism information centre.
Warrnambool City Council	Local Government Authority (LGA) for the large regional hub.
Victorian Farmers Federation	Farming industry representative body.
Australian Communications Management Authority	Regulator - telecommunications, broadcasting, radio communications and the internet.
Australian Energy Market Operator	Regulator - electricity market.
Civil Aviation Safety Authority	Aviation safety regulator.
Commonwealth Department of Agriculture and Water Resources	Regulator - agriculture and water resources.
Commonwealth Department of Defence	Manages all Australian defence activities.
Commonwealth Department of Industry, Innovation and Science	Oversees policy and programs to facilitate the growth and productivity of globally competitive industries.
Energy and Water Ombudsman Victoria	Dispute resolution service regarding complaints about energy and water issues.
Energy Safe Victoria	Technical and safety regulator.
EPA Victoria	Environmental protection regulator.

Stakeholder	Functions and Activities
Essential Services Commission Victoria	Essential services regulator.
State Member for Polwarth	Local representative in State Parliament for Polwarth. Constituents may have an interest or be affected by the Project.
Federal Member for Wannon – Minister for education	Constituents may have an interest or be affected by the Project.
Office of the Minister for Agriculture, Regional Development	Minister responsible for Agriculture and Regional Development portfolios.
Office of the Minister for Resources and Northern Australia	Minister responsible for Resources portfolio.
Office of The Premier	Constituents may have an interest or be affected by the Project.
Office of the Victorian Minister for Energy, Environment and Climate Change, Solar Homes	Minister responsible for Energy, Environment and Climate Change and Solar Homes portfolio.
Tourism Victoria	Tourism body.
National Native Title Tribunal	Native title applications, and Indigenous land use agreements (ILUAs)
Community, Tourism and Recreation	
Great Ocean Road Regional Tourism	Regional tourism association for Shipwreck Coast.
Heytesbury and Districts Land Care Network	Local biodiversity and conservation organisation.
Twelve Apostles Tourism and Business Group	Membership group for local tourism operators.
Port Campbell Progress Group	Representative group focused on town amenity for residents and protecting local culture and way of life.
Port Campbell Community Group	Small membership group focused on environment conservation.
Port Campbell Surf Lifesaving Club	Membership and volunteer based surf lifesaving club, provides rescue services for 60 km of local coastline.
Port Campbell Board Riders Association	Recreational surfing club.
Port Campbell Rifle Range	Rifle club with small membership and long history.
Great Ocean Road Touring	Tourism accommodation and tour services operator.
Port Campbell Boat Charters	Based in Port Campbell, operates dive and fishing charter boat services.
Peterborough Residents Group	Community group - focus on amenity for residents.
Peterborough Golf Club	Golf club within region.
Port Campbell Historical Society	Provides historical information about the Port Campbell area and district extending to Timboon, Simpson, Princetown, Peterborough and other significant areas.
Timboon Action Group	Community group - focus on amenity for residents.
First Nations Legal & Research Services Ltd	The Native Title Service Provider for Victorian Traditional Owners.
Nirranda and Districts Recreation Centre	Local sports and community centre.

Stakeholder	Functions and Activities
Nullawarre and District Primary School	Local primary school.
Nullawarre Inc	Small community group.
Nirranda Football Club	Local sporting group.
Timboon Recreational Fishing Club	Local fishing group.
Local Business	
Warrnambool Cheese and Butter Factory Co Ltd	Local dairy processor.
Acme Rural Supplies	Local fertiliser supplier.
Reid Stockfeeds	Local stockfeed manufacturer.
McDowall's Friendly Grocer Store	Local grocer.
Childers Restaurant	Local restaurant.
Nullawarre Veterinary Clinic	Local vet.
Schomberg Inn	Local accommodation.
Peterborough General Store and Takeaway Food	Local café.
Peterborough Licensed Grocers	Local grocer.
Peterborough Airport	Only charter helicopter operators in the area.
Australia Post - Port Campbell LPO (Port Campbell Shopping)	Local post office.
Southern Ocean Motor Inn	Local accommodation.
Frying Nemo Fish and Chips	Local fish and chips.
Port Campbell Take Away	Local fish and chips.
Sea Foam Villas Port Campbell	Local accommodation.
Loch Ard Motor Inn	Local accommodation.
Café on Lords	Local restaurant.
Nico's	Local restaurant.
Port Central Apartments	Local accommodation.
Grassroots Deli Café	Local restaurant.
Port Campbell Trading Co.	Local surf shop.
Independent Port Campbell	Local service station.
Waves Cafe, Bar and Restaurant	Local accommodation/restaurant.
The Alcove Café	Local restaurant.
Port O' Call Motel	Local accommodation.
Port Campbell Hotel	Local accommodation/restaurant.
Australia Post – Timboon	Local post office.
Timboon Motors	Local car dealer.
Popes Consolidated Bus lines	Local bus charter.
Warrnambool Bus Lines	Local bus charter.
Matthews Petroleum	Local fuel and lubricants distributor and retailer.

Stakeholder	Functions and Activities
Bega	Dairy company. Safety, logistics or fleet manager in the region have an interest in road activities on the Project.
Bulla Dairy	Dairy company. Safety, logistics or fleet manager in the region have an interest in road activities on the Project.
Fonterra	Dairy company. Safety, logistics or fleet manager in the region have an interest in road activities on the Project.
The Midfield Group	Dairy company. Safety, logistics or fleet manager in the region have an interest in road activities on the Project.
The Beacon Newsletter	Local newsletter.
Gateway Motor Inn	Local accommodation.
Landmark (CFA member)	Experts in the Australian agricultural industry, including precision farming services, marketing livestock and wool, agricultural services, finance, insurance, merchandise and real estate.
Western District Crane Service	Crane rental agency in Victoria.
Conservation Interests	
Victorian National Parks Association	Conservation of national parks.
Friends of Bay of Islands Coastal Park	Community group engaged in care of the park.
Environment Victoria	Functions to protect Victoria's environment.
Sustainable Agriculture and Communities Alliance	Group composed of farmers and community members. Active for eleven years on water conservation, agrichemical issues, and healthy safe food production.
Wilderness Society	Non-profit organisation securing better laws for ecosystems and protections for Australia's wild places.
Emergency Services	
Port Campbell Police	Law enforcement.
Port Campbell SES	Emergency support.
Warrnambool Coast Guard	Coast guard station.
Camperdown Police	Law enforcement.
Industry - Gas	
Lochard Energy	Gas plant adjacent Otway Gas Plant.
BHP Billiton	Nearby proponent with pipelines and current operator of Minerva gas processing plant.
Cooper Energy	Proponent with nearby offshore permits and drilling projects. Recent investment in Minerva processing plant.
CO ₂ CRC	Carbon capture and storage project in Otway region.
SEAGas	Gas pipeline asset owner.
APA	Gas pipeline asset owner.
APPEA	Oil and gas industry association.
AEMO	Body corporate responsible for the administration and operation of the wholesale national electricity market in accordance with the National Electricity Code.
Esso Australia (ExxonMobil subsidiary)	Adjacent titleholder in Otway Basin through former operatorship of Minerva Gas Plant.
Industry - Other	
Global Resource Recovery	Waste management service.

Stakeholder	Functions and Activities
Other	
Community members	Local community members, business owners.

4.2 Consultation during Preparation of Environmental Plan

A number of key stakeholders, including government agencies, conservation, industry peak bodies and landowners, near neighbours and community groups, were consulted during the preparation of the EP to discuss the technical aspects associated with the Project and assist with the identification of key issues for consideration.

The consultation strategy involves informing stakeholders who are known to operate or have an interest in the area of the intended scope of work and to undertake ongoing consultation to address any concerns they may have.

4.3 Consultation Summary

All consultation is recorded in the Project consultation log. The log includes the identification of the stakeholder, a description of the nature of consultations, an outline of the level of information provided and any actions taken to resolve identified issues. A summary of the stakeholder consultation undertaken up to December 2019 is presented in Table 5.

Table 5: Stakeholder Consultation Log

Stakeholder	Most Recent Engagement	Method of Communication	Issues Raised by Stakeholder	Beach Assessment and Response
Impacted Stakeholders				
Primary Landholders				
Landholder A	27/06/19	Site visit Email Phone call Meeting Community information session	<ul style="list-style-type: none"> Potential farming and amenity impacts from Project activities including: noise; dust; light; traffic; drainage management on the site; general environment protection measures. Planning for different Project phases and timings. 	<ul style="list-style-type: none"> Site location determined after consultations with land holder and further adjustments to location made to minimise possible drainage impacts. Potential farming impacts have been assessed by two separate agricultural consultants and the land holder's preferred approach to mitigation has been reflected in an agreement. Noise impacts assessed by modelling and further on-site consultation with acoustic engineer and mitigation plan has been agreed. Close engagement will be maintained throughout the Project.
Near Neighbours				
Near Neighbours	17/06/19	Site visit Emails Phone calls Meetings	<ul style="list-style-type: none"> Potential amenity impacts from Project activities including: noise; dust; light; and traffic. Some have shown interest in what routes the heavy vehicles will take and what they can expect to see and hear during the drilling campaign. No major concerns have been raised. 	<ul style="list-style-type: none"> Noise impacts assessed by modelling and further on-site consultation with acoustic engineer and mitigation plans relevant to each land holder. Beach will ensure advanced notice is provided for commencement of Project, mobilisation of heavy vehicles, erection of drill rig, flaring and other Project activities as appropriate. Close engagement will be maintained throughout the Project.

Stakeholder	Most Recent Engagement	Method of Communication	Issues Raised by Stakeholder	Beach Assessment and Response
Involved Stakeholders				
Government Agencies including Federal				
Departments and Elected Officials				
DPIR/Victorian Gas Program	29/01/19	Email	None raised	<ul style="list-style-type: none"> Tour of HBWS site and have been kept informed of BW and Enterprise-1 projects through stakeholder advisory panel. Communication will be maintained regarding timing of approvals.
VGP Stakeholder Advisory Panel Members	1/2/19	Email	None raised	<ul style="list-style-type: none"> Tour of HBWS site and have been kept informed of BW and Enterprise-1 projects through stakeholder advisory panel. Communication will be maintained regarding timing of Project.
DJPR – ERR (Petroleum Act)	27/06/19	Site visit Emails Phone calls Meetings	<ul style="list-style-type: none"> Potential community engagement challenges. Critical importance of community consultation at the time of the drill site being locked in. 	<ul style="list-style-type: none"> Beach has consulted regularly with DJPR-ERR throughout the process of developing its Operations Plan and has provided regular updates on the progress of community consultation which has throughout the engagement period, been predominantly positive. Beach is committed to working with landholders and community stakeholders as part of its ongoing consultation commitments.
Geological Survey of Victoria, Earth Resources Economic Development, DJPR	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with Assessments and Compliance Groups contacts.

Stakeholder	Most Recent Engagement	Method of Communication	Issues Raised by Stakeholder	Beach Assessment and Response
DELWP – Environmental Effects Act	17/06/19	Email Meeting Site visit	<ul style="list-style-type: none"> Query raised in relation to removal of waste fluids from drilling. Requested submission of self-assessment for comment. Main areas of focus – proposed development and possible impacts on the main attributes of the location (Great Ocean Rd etc.), noise. 	<ul style="list-style-type: none"> Beach advised that all drill waste fluids will be captured in tanks, separated and disposed of at an accredited waste disposal facility in accordance with the WMP. Continue to liaise regarding Beach self-assessment. Will maintain communication with regard to approvals and timing.
DELWP – National Parks	8/5/19	Email Phone Meeting	<ul style="list-style-type: none"> Potential impacts due to proximity of site to port Campbell National Park. Advised to have completed NPAC submission and draft consent conditions. Advised to make submission without EP due to timeframes. Advised that application is submitted to the Minister as possible to help facilitate the consent process in a timely manner. Draft consent conditions to be provided. 	<ul style="list-style-type: none"> Beach to attended meeting on 12 November 2018 to present Project. National Parks site visit of HBWS and Enterprise-1 sites 19/20 March 2019. Draft consent conditions provided to Beach for information. Consent application progressed. Currently Consent is tabled in Victorian Parliament.
DELWP – Heritage Victoria	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.
State member for Polwarth	29/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.
Regional Development Victoria, Barwon South West Region	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.
Office of the Minister for Agriculture, Regional Development	7/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.
Office of the Minister for Resources and Northern Australia	8/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.

Stakeholder	Most Recent Engagement	Method of Communication	Issues Raised by Stakeholder	Beach Assessment and Response
Office of the Victorian Minister for Energy, Environment and Climate Change	3/2/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.
Office of The Premier	8/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.
Agencies and Councils				<ul style="list-style-type: none">
Parks Victoria – Port Campbell	19/3/19	Email Phone Site visit	<ul style="list-style-type: none"> Potential impact to Port Campbell National Park 	<ul style="list-style-type: none"> The Enterprise-1 site will be on farmland set back around 420 m from the Port Campbell National Park and Beach is confident of little to no impact on the park. Beach will maintain close engagement and advanced notice of activities, particularly given Parks Victoria – Port Campbell's role in overseeing tourism assets in the region, and the Enterprise-1 drill campaign running during summer.
Vic Roads – Regional Roads	8/3/19	Emails Meetings Community information session	<ul style="list-style-type: none"> Traffic Management concerns regarding Radford Road intersection. Requested information on how rig will be mobilised to site. 	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing. Explanations provided regarding transportation of rig and avoiding GOR. Rig move plan provided.
Tourism Victoria	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.
Energy and Water Ombudsman Victoria	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.
Transport Safety Victoria – Maritime Safety Victoria	20/12/18	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.

Stakeholder	Most Recent Engagement	Method of Communication	Issues Raised by Stakeholder	Beach Assessment and Response
Energy Safe Victoria	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.
EPA Victoria	3/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.
Aboriginal Victoria	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.
Essential Services Commission Victoria	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.
Australian Energy Market Operator	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.
Australian Communications Management Authority	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.
Victorian Farmers Federation	22/5/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.
Wannon Water	13/2/19	Phone Email Community information session	<ul style="list-style-type: none"> Stakeholder raised potential impact to Wannon Water pipeline assets along the Curdievale - Port Campbell Road and Brumbies Road. Stakeholder interested in drilling techniques and the potential impacts/risks and contingency plans for these risks. 	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status. Meeting to be set up to discuss potential impacts to pipeline assets, before Project kick-off.
Southern Rural Water	6/2/19	Phone Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.

Stakeholder	Most Recent Engagement	Method of Communication	Issues Raised by Stakeholder	Beach Assessment and Response
Federal Stakeholders				
Civil Aviation Safety Authority	2/4/19	Email	<ul style="list-style-type: none"> Advised that on commencement of construction of the tall obstacle and prior to potential flaring events. The obstacle should be reported as outlined in CASA Advisory Circular 139-O8 v2.0 – Reporting of tall structures and hazardous plume sources. 	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.
Office for the Minister for Energy and Environment	8/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.
Office for the Minister for Resources and Northern Australia	7/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.
Department of Energy and Environment	8/6/19	Email Meeting	None raised	<ul style="list-style-type: none"> Submission of EPBC referral. Will maintain communication with regard to approvals and timing.
Commonwealth Department of Industry, Innovation and Science	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.
Commonwealth Department of Defence (Infrastructure Division, Defence Support & Reform Group)	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.
National Native Title Tribunal	29/1/19	Email	<ul style="list-style-type: none"> Stakeholder advised that proposal activities are adjacent to and may overlap the Eastern Maar People registered native title claim (VC2012/001). Requested coordinates so that Geospatial team can advise and to what extent. 	<ul style="list-style-type: none"> Beach advised they have been consulting EMAC in relation to proposed activities and are aware of this claim area. Communications will be maintained with EMAC and First Nations Legal and Research Services Ltd throughout the Project.
Commonwealth Department of Agriculture and Water Resources	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to approvals and timing.

Stakeholder	Most Recent Engagement	Method of Communication	Issues Raised by Stakeholder	Beach Assessment and Response
Member for Wannon Minister for Education	08/01/19	Email Meeting	<ul style="list-style-type: none"> Stakeholder raised questions around whether Beach was able to drill an ERD project under the current Victorian regulatory framework. 	<ul style="list-style-type: none"> Beach clarified that <i>The Resources Amendment Legislation (Fracking Ban) Act 2017</i> states that “exploration and production for offshore gas can also continue, including drilling from onshore to offshore”. Will maintain communication with regard to approvals and timing.
Local Government				<ul style="list-style-type: none">
Port Campbell Visitor Information Centre	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to Project location and timing.
Warrnambool City Council	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to Project location and timing.

Stakeholder	Most Recent Engagement	Method of Communication	Issues Raised by Stakeholder	Beach Assessment and Response
Corangamite Shire Council	9/05/19	Email Meeting Site visit/tours	<ul style="list-style-type: none"> • Asked about Beach's approach to compulsory acquisition of a suitable drill site. • Not concerned about the temporary visibility of the drill rig but enquired about visibility once the drilling is completed. • Reiterated their support of the gas industry in the Corangamite Shire as a contributor to regional development through employment opportunities and other economic impacts. • Beach is regarded as a responsible operator, and its approach to community engagement is respected and trusted. • Stakeholder highlighted the need to seek planning permit for production after drilling exploration well. • Stakeholder raised questions regarding removal of waste fluids from drilling. 	<ul style="list-style-type: none"> • Beach has assessed several options for the drill site, discussed these with land holders who were open to exploring hosting the drill site. Beach strongly prefers to reach mutually beneficial voluntary agreements with landholders and this will be the case with the Enterprise-1 drill site. • From the public information prepared about the Enterprise-1 Project to direct conversations with stakeholders, Beach has sought to ensure the community is aware the drill rig will be highly visible, and the Project is temporary. • Beach understands the local planning laws applicable to the drill site and have no concerns about meeting those requirements in the event of establishing a production well site. • Beach has proactively consulted CSC in preparation of its Traffic Management Plan for the Enterprise-1 Project. • Beach Energy will apply for planning permit for production earlier to give certainty of production site approval. • Beach Energy advised all drill waste fluids captured in tanks, separated and disposed of at accredited waste disposal facility in accordance with WMP. • Beach will ensure ongoing engagement and advanced notices of key activities.

Stakeholder	Most Recent Engagement	Method of Communication	Issues Raised by Stakeholder	Beach Assessment and Response
Moyne Shire Council	13/2/19	Emails Meetings Phone call Community information session	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to Project location and timing.
Community, Tourism and Recreation				<ul style="list-style-type: none">
Eastern Maar Aboriginal Corporation	14/3/19	Emails Meetings/Site visit Phone Letter	<ul style="list-style-type: none"> Discussed Enterprise-1 Project, engagement of EMAC in cultural heritage surveys, process for agreement making, if required; review of existing ILUA. No issues raised. EMAC to be involved in Cultural Heritage surveys. EMAC are prepared to negotiate an agreement should one be required. 	<ul style="list-style-type: none"> Will maintain communication with regard to Project location and timing.
Nullawarre and District Primary School	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to Project location and timing.
Nullaware Inc	1/2/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to Project location and timing.
Peterborough Golf Club	9/5/19	Letter Phone call	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to Project location and timing.
Peterborough Residents Group	29/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to Project location and timing.
Port Campbell Board Riders Association	18/4/19	Email Meeting Phone	<ul style="list-style-type: none"> Meeting requested by stakeholder. Concerns regarding increasing roadkill of native fauna on the GOR. 	<ul style="list-style-type: none"> Will maintain communication with regard to Project location and timing.
Port Campbell Community Group	1/2/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to Project location and timing.

Stakeholder	Most Recent Engagement	Method of Communication	Issues Raised by Stakeholder	Beach Assessment and Response
Port Campbell Progress Group	29/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to Project location and timing.
Port Campbell Historical Society	29/1/19	Email	None raised. Information sheet provided to Heystesbury Historical members.	<ul style="list-style-type: none"> Will maintain communication with regard to Project location and timing.
Timboon Recreational Fishing Club	22/1/19	Letter Email Phone	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to Project location and timing.
Timboon Action Group	2/4/19	Email Meeting Community group worksheet	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to Project location and timing.
Nirranda Football Club	22/1/19	Letter Email Phone	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to Project location and timing.
Port Campbell Rifle Range	22/1/19	Letter Email Phone	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to Project location and timing.
Port Campbell Surf Life Saving Club	13/2/19	Email	None raised. Information sheet provided to Surf Life Saving Club members.	<ul style="list-style-type: none"> Will maintain communication with regard to Project location and timing.
First Nations Legal and Research Services Ltd	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication with regard to Project location and timing.

Stakeholder	Most Recent Engagement	Method of Communication	Issues Raised by Stakeholder	Beach Assessment and Response
Nirranda and Districts Recreation Centre	21/1/19	Email	None raised	<ul style="list-style-type: none"> Commenced engagement with stakeholder in December 2018. Beach will ensure ongoing engagement and advanced notices of key activities.
Heytesbury and Districts LandCare Network	21/1/19	Email	None raised	<ul style="list-style-type: none"> Commenced engagement with stakeholder in December 2018. Beach will ensure ongoing engagement and advanced notices of key activities.
Peterborough Airport and 12 Apostles Helicopters	08/04/19	Emails Phone calls Meetings	No concerns raised and appreciated the engagement	<ul style="list-style-type: none"> Beach proactively engaged the owner of Peterborough Airport and 12 Apostles Helicopters to ascertain any risks or limitations to each other's operations from standing up the drill rig. After providing a map of the Project and distance from the Peterborough Airstrip, the owner confirmed there were no concerns for either of their businesses. Beach will ensure ongoing engagement and advanced notices of key activities.
Tourism Businesses (Other)	18/03/19	Emails Community information session	None raised	<ul style="list-style-type: none"> Beach has been proactive in engaging local businesses in Port Campbell and Peterborough and have clearly explained that the drill rig will be highly visible when erected, as will flaring, but this will be temporary. Beach will ensure ongoing engagement and advanced notices of key activities.

Stakeholder	Most Recent Engagement	Method of Communication	Issues Raised by Stakeholder	Beach Assessment and Response
Local Business				•
Warrnambool Cheese and Butter Factory Co Ltd	21/1/19	Email	None raised	• Will maintain communication regarding Project information and timing status.
Acme Rural Supplies	21/1/19	Email	None raised	• Will maintain communication regarding Project information and timing status.
Great Ocean Road Regional Tourism	21/1/19	Email	None raised	• Will maintain communication regarding Project information and timing status.
Reid Stockfeeds	21/1/19	Email	None raised	• Will maintain communication regarding Project information and timing status.
McDowall's Friendly Grocer Store	21/1/19	Email	None raised	• Will maintain communication regarding Project information and timing status.
Childers Restaurant	21/1/19	Email	None raised	• Will maintain communication regarding Project information and timing status.
Nullawarre Veterinary Clinic	21/1/19	Email	None raised	• Will maintain communication regarding Project information and timing status.
Schomberg Inn	21/1/19	Email	None raised	• Will maintain communication regarding Project information and timing status.
Peterborough General Store and Takeaway Food	21/1/19	Email	None raised	• Will maintain communication regarding Project information and timing status.
Peterborough Licensed Grocers	21/1/19	Email	None raised	• Will maintain communication regarding Project information and timing status.
Australia Post - Port Campbell LPO (Port Campbell Shopping)	21/1/19	Email	None raised	• Will maintain communication regarding Project information and timing status.
Great Ocean Road Touring	21/1/19	Email	None raised	• Will maintain communication regarding Project information and timing status.

Stakeholder	Most Recent Engagement	Method of Communication	Issues Raised by Stakeholder	Beach Assessment and Response
Port Campbell Boat Charters	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Twelve Apostles Tourism and Business Group	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Southern Ocean Motor Inn	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Frying Nemo Fish and Chips	30/1/19	Phone Letter	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Port Campbell Take Away	30/1/19	Phone Letter	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Sea Foam Villas Port Campbell	31/1/19	Phone Letter	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Loch Ard Motor Inn	18/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Café on Lords	18/1/19	Letter	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Nico's	30/1/19	Phone Letter	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Port Central Apartments	18/1/19	Letter	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Grassroots Deli Café	30/1/19	Phone Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Port Campbell Trading Co.	30/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.

Stakeholder	Most Recent Engagement	Method of Communication	Issues Raised by Stakeholder	Beach Assessment and Response
Independent Port Campbell	30/1/19	Letter Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Waves Cafe, Bar and Restaurant	18/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
The Alcove Café	30/1/19	Phone Letter Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Port O' Call Motel	28/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Port Campbell Hotel	30/1/19	Phone Letter Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Australia Post – Timboon	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Timboon Motors	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Popes Consolidated Bus lines	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Warrnambool Bus Lines	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Matthews Petroleum	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Bega	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Bulla Dairy	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.

Stakeholder	Most Recent Engagement	Method of Communication	Issues Raised by Stakeholder	Beach Assessment and Response
Fonterra	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
The Midfield Group	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
SCUBA Divers Federation of Victoria	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Warrnambool Dive Club - Daktari Surf & Dive	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Ocean Racing Club of Victoria	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
The Beacon Newsletter	4/2/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
The Gateway Motor Inn	13/2/19	Community information session	<ul style="list-style-type: none"> Accommodation services offered. 	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Landmark (CFA member)	18/3/19	Email Community information session	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status. Provided community investment agreement.
Western District Crane Service	13/2/19	Community information session	<ul style="list-style-type: none"> Interested in crane support. 	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.

Stakeholder	Most Recent Engagement	Method of Communication	Issues Raised by Stakeholder	Beach Assessment and Response
Industry – Gas				•
Beach staff and contractors	07/05/19	Information sessions Townhall updates	<ul style="list-style-type: none"> None raised. Staff contribute information on local questions and concerns, so that stakeholder engagement is planned to meet community needs. 	<ul style="list-style-type: none"> Beach staff and contractors who live and work in the region need to be supported with Project information to enable them to respond to questions. Briefings are held to ensure our people are equipped with knowledge and know how to follow up queries with the Community Relations Manager.
Otway Gas Plant (OGP) - Community Reference Group (CRG)	27/02/19	Meetings Emails	<ul style="list-style-type: none"> Wanted to know location of the drill site and understand its proximity to Great Ocean Road and visibility of the drill rig. 	<ul style="list-style-type: none"> Advised approximate location and that we land holders privacy. Will ensure ongoing consultation with the local community to ensure awareness of the temporary nature of the drilling campaign. Beach will ensure ongoing engagement and advanced notices of key activities.
Cooper Energy	4/07/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Lochard Energy	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
SEA Gas	16/4/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
BHP Billiton, Minerva Gas Plant	5/2/19	Email Meeting	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
APA Group	21/01/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
C02CRC	20/12/18	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.

Stakeholder	Most Recent Engagement	Method of Communication	Issues Raised by Stakeholder	Beach Assessment and Response
AEMO	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Esso Australia (ExxonMobil subsidiary)	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
APPEA	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Industry – Other				<ul style="list-style-type: none">
Global Resource Recovery	1/2/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Conservation Interests				<ul style="list-style-type: none">
Victorian National Parks Association	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Sustainable Agriculture and Communities Alliance	7/4/19	Email Meeting	<ul style="list-style-type: none"> Meeting requested. 	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status. Meeting held 7 April 2019.
Environment Victoria	7/2/19	Email	<ul style="list-style-type: none"> Requested to be notified in relation to ASX releases on the gas reserve. 	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Wilderness Society	1/2/19	Phone	<ul style="list-style-type: none"> Requested to be provided with research on seismic survey and potential impacts to marine fauna 	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status. Explained information can be found on NOPSEMA website in relation to seismic surveys.

Stakeholder	Most Recent Engagement	Method of Communication	Issues Raised by Stakeholder	Beach Assessment and Response
Emergency Services				•
Country Fire Authority (Port Campbell, Peterborough, Nirranda South, Nullawarre, Timboon, District 6)	21/1/19	Emails Meeting Tours Phone Letter Community information session	<ul style="list-style-type: none"> Would like to be kept informed of drill site locations and any relevant fire safety studies or Emergency Response Plans 	<ul style="list-style-type: none"> Beach invited the local CFA brigades on familiarisation tours of Otway Gas Plant in February 2019 at which the Enterprise-1 Project was explained and discussed. Beach will provide relevant fire studies and emergency response plans to the CFA and will host site familiarisation tour of the Enterprise-1 site once it is established.
Port Campbell Police	29/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Warrnambool Coastal Guard	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
South West Region CFA	3/07/2019	Phone Email Meeting	<p>Stakeholder is focused on upcoming drilling activities:</p> <ul style="list-style-type: none"> Project Scope Planning Implications Fire Safety Implications Fire Service Delivery <ul style="list-style-type: none"> Requested to arrange a meeting with fire safety officers. 	<ul style="list-style-type: none"> Beach advised of engagement / familiarisation approach in the past for HBWS and would look to do same for Enterprise-1. Will maintain communication regarding Project information and timing status.
SES Port Campbell	22/1/19	Phone Letter Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Port Campbell CFA	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.

Stakeholder	Most Recent Engagement	Method of Communication	Issues Raised by Stakeholder	Beach Assessment and Response
Peterborough CFA	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Camperdown Police	21/1/19	Email	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.
Other				<ul style="list-style-type: none">
Community members	13/2/19	Community information session	None raised	<ul style="list-style-type: none"> Will maintain communication regarding Project information and timing status.

4.4 Ongoing Consultation

Beach is committed to consultation in accordance with the SEP throughout the planning and operational phases of the Project. Stakeholder consultation will be continued through the following measures:

- Updates with the identified key stakeholders which may be potentially affected by the Project.
- Updates to key regulatory bodies and relevant stakeholders in relation to changes in Project scope and timing.
- Any reportable incidents or events will be communicated with the DJPR as outlined in Section 7.3.4.
- Placing a Beach representative on-site during the drilling stage of the project to liaise with any stakeholders present in the project area.

Beach in collaboration with key stakeholders will ensure that delivery of current Project information occurs in a timely manner.

4.4.1 Land Owner Consultation

Contact will be maintained with land owner and occupiers in accordance with the SEP to ensure that there will be minimal inconvenience and impact on existing activities. Consultation will provide land owners and occupier's adequate time to review the information provided and to seek advice from external parties or obtain further clarification from Beach.

4.4.2 Contractor Consultation

Beach will implement an effective communication process with the appointed contractors to ensure that information is exchanged in a timely and concise manner. This will be achieved by a number of methods, including:

- **Site inductions:** prior to work on site contractors are required to attend site inductions, which includes an environmental awareness component.
- **Contractor meetings:** The appointed contractors are required to attend site inductions and regular meetings to provide information and updates on the Project environmental performance.
- **Supervisor meetings:** Weekly supervisors' meeting will be held between Beach and the appointed contractors. This meeting forms the basis where HSE issues likely to be encountered in the coming week and mitigation methods are discussed.
- **Toolbox meetings:** The construction crews will hold daily pre-start and weekly toolbox talks to discuss issues associated with the scheduled work. This will include highlighting and discussing relevant environmental issues, and induction refresher information on EP requirements. The HSE Team Leader will plan to attend at least one toolbox meeting every week to discuss the upcoming environmental issues with the crew and to provide more detailed information as necessary.

4.4.3 Summary of Ongoing Consultation

Table 6 provides a summary of ongoing consultation to be completed for the Project and includes the relevant stakeholders, the information to be communicated and the method for delivery. The timing of the ongoing consultation is subject to change and depends on the timeframes for receiving necessary approvals, as such, this is not indicated in the table.

Table 6: Summary of Ongoing Consultation

Stakeholders	Details	Method
All stakeholders	Review of all existing Enterprise-1 communications materials to include updated project information (including location and timing of drilling)	<ul style="list-style-type: none"> All print and online publications, graphics
	Provide notification via email to all stakeholders that drilling has been completed on Black Watch and update on Enterprise-1 next steps.	<ul style="list-style-type: none"> Information sheet
	Provide notification via email to all stakeholders that drilling has been completed at Enterprise-1 and update on next steps.	<ul style="list-style-type: none"> Information sheet
All stakeholders Primary landholders Near neighbours	<p>Prior to, during and post Enterprise-1 drilling activities, the Beach Community team is committed to:</p> <ul style="list-style-type: none"> Identification of key internal project milestones or a change in scope, timing or impact that may trigger further consultation. Continue discussions with landholders/near neighbours regarding impacts from project activities including: noise; dust; light; and traffic, etc. Manage stakeholder queries, public queries and continue community consultation (via email, phone, and meetings if required). 	<ul style="list-style-type: none"> Master project schedule Information sheets/Q&A
Otway Gas Plant Community Reference Group	<p>Meeting with OGP Reference Group</p> <ul style="list-style-type: none"> General update. Discuss scheduled oversized load leaving Black Watch site and entering Enterprise-1 site. 	<ul style="list-style-type: none"> Bulletin inc. Q&As
Residents/landowners Traders, Visitors	Erect project signage at Enterprise-1 wellsite (site signage will also include a link to further information).	<ul style="list-style-type: none"> Signage (artwork & production) Website
Landholder Near neighbours Corangamite Shire CRG	<p>Project planning update to key Enterprise-1 stakeholders regarding:</p> <ul style="list-style-type: none"> Final approval of Environment Plan obtained from regulator. Notice of project start. Commencement of civil works for Enterprise-1 drill site. Commencement of road works for access to Enterprise-1 wellsite location. 	<ul style="list-style-type: none"> Letter
Beach Energy	Update Beach Energy website with updated project information.	<ul style="list-style-type: none"> Web copy Q&As Diagrams, images

Stakeholders	Details	Method
Media Public/community	Place public notice in local newspapers (i.e. Warrnambool Standard): <ul style="list-style-type: none"> • Notice of Project start –intention to undertake drilling activity and indicative timings. • Commencement of road works dates for access to Enterprise-1 wellsite location. • Scheduled oversized load at Enterprise-1 site. 	<ul style="list-style-type: none"> • Community notice/map
Landholder Near neighbours Broader community LGAs CRG	Project planning update to key Enterprise-1 and Black Watch stakeholders regarding: <ul style="list-style-type: none"> • Scheduled oversized load leaving Black Watch site. • Scheduled oversized load at Enterprise-1 wellsite. • Significant increase in traffic to Enterprise-1 wellsite. 	<ul style="list-style-type: none"> • Table and discuss at CRG meeting in advance (October 2019). • Letter to landholder, near neighbours and LGAs 4 weeks before. • SMS message 1 week before and reminder the day before.
Landholder Near neighbours CRG LGAs	Project planning update to key Enterprise-1 stakeholders regarding: <ul style="list-style-type: none"> • Stand up of drill rig at Enterprise-1 site. 	<ul style="list-style-type: none"> • SMS message 1 week before and reminder the day before.
Landholder Near neighbours CRG LGAs	Project update to key Enterprise-1 stakeholders regarding: <ul style="list-style-type: none"> • Commencement of drilling. • Drilling completion / demobilise drill rig. 	<ul style="list-style-type: none"> • SMS message 1 week before and reminder the day before.
Media Public/community	Place Public notice in local newspapers (i.e., Warrnambool Standard) regarding: <ul style="list-style-type: none"> • Scheduled flaring for well testing. • Notice of Enterprise-1 drilling completion. • Intention to complete Enterprise-1 exploration well for production and tie-in, pipeline construction (if successful), or; • Plug and abandon well (if the well is not commercially viable). 	<ul style="list-style-type: none"> • Community notice/map
Landholder Near neighbours LGAs CRG Emergency Services (especially CFA)	Project update to key stakeholders regarding: <ul style="list-style-type: none"> • Scheduled flaring for well testing 	<ul style="list-style-type: none"> • Letter to landholder, near neighbours, LGAs. • SMS reminder before and after to land holder and near neighbours. • Letter to Emergency Services
Landholder Near neighbours Corangamite Shire CRG	(If successful) Project update to key Enterprise-1 stakeholders regarding: <ul style="list-style-type: none"> • Completing the Enterprise-1 exploration well for production including installation of tie-in infrastructure and pipeline construction; commissioning. (Or, if the well is not commercially viable) Project update to key Project stakeholders regarding: <ul style="list-style-type: none"> • Plug and abandon well. 	Letter to landholder, near neighbours, LGAs, Corangamite Shire

Stakeholders	Details	Method
	Project update to key Project stakeholders regarding: <ul style="list-style-type: none"><li data-bbox="496 398 783 423">• Remediation of entire site.	

5 Environmental Impact, Risk Assessment and Controls

5.1 Overview

Beach has identified, qualitatively risk assessed and reviewed the environmental hazards associated with the Project.

The methodology utilised is consistent with the *Australian Standard for Risk Management: AS/NZS ISO 31000:2009*, and HSEMS Standard 7 Hazard and Risk Management procedures and tool kits.

Enterprise-1 hazards have been assessed to have a low or medium risk to the environment, community, people, land, land users and property with risk controls in place. Enterprise-1 hazards have been reduced to as low as reasonably practicable (ALARP) with acceptable risk to the environment from the activity. The ALARP process is ongoing and assessment of and implementation of new controls is integral to Beach's risk management process.

5.2 Method

Figure 5 presents an overview of the Beach Environmental Risk Assessment process for identifying, assessing and reviewing the hazards to ensure the risk is ALARP.

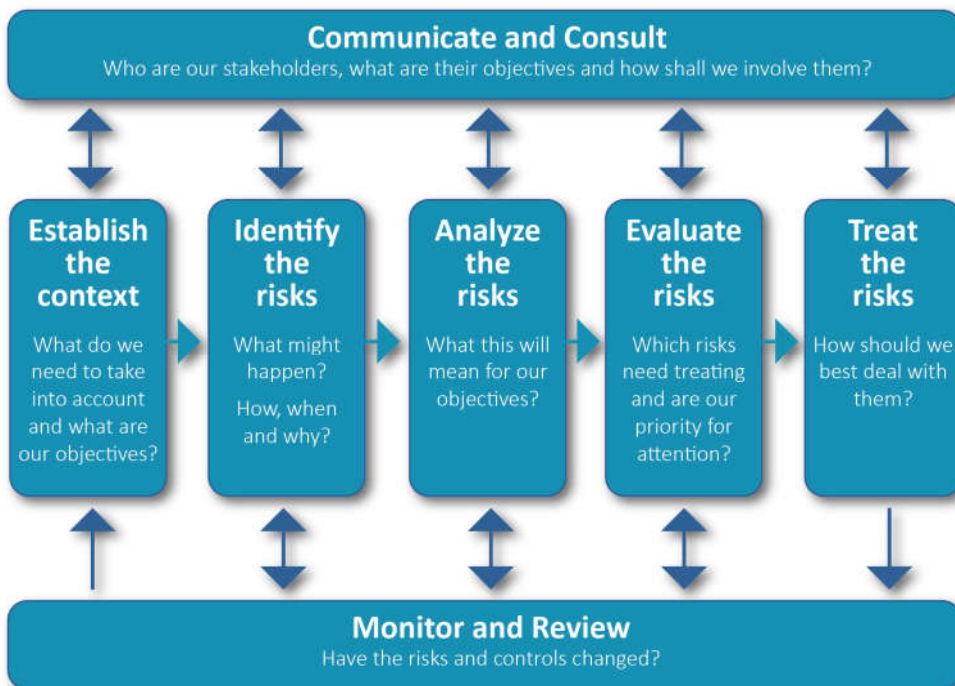


Figure 5: HAZID and Risk Assessment Process

5.2.1 Environmental Hazard Identification

Environmental hazards are identified by internal technical workshop reviews that assess:

- Individual activities proposed for the Enterprise-1 Exploration Drilling Program.
- Non-routine activities or events that may occur in the course of the Project.

- Drilling technology to be used.
- Alternative drilling methods that may be used.
- Receiving environments, with emphasis on sensitive environmental aspects of the Project area.
- Potential stakeholder and community impacts by consultation and liaison.
- Lessons learned from previous drilling projects undertaken by Beach and Lattice in Australia including the three Otway Basin extended reach wells recently drilled using Ensign Rig 931.

The hazard identification (HAZID) process for the Enterprise-1 Exploration Drilling Program has built on the previous work undertaken for the drilling of the three Ensign Rig 931 extended reach wells in the Otway Basin. Hazard identification workshops associated with the initial three well Halladale – Speculant EP were conducted in November 2012 and September 2013 that involved a multi-disciplinary team with representatives from Origin Energy and Lattice Energy management, the HSE group, operations personnel, and the Project management team. Then followed a controls adequacy and risk assessment review in October 2013; additional HAZID workshops were held in March 2014 and February 2015.

5.2.2 Qualitative Risk Assessment

Risk can be considered as the product of the likelihood that a particular risk event occurs and its resultant consequence. Likelihood is based on the probability that the resultant consequence will occur and the exposure to the event.

The process of assessment is as follows:

- Identify the hazard under consideration.
- Should the hazard occur, consider the possible consequences across all categories (Figure 6).
- Identify the existing controls and assess their effectiveness.
- Identify the consequence rating (1 to 6) corresponding to the maximum reasonable impact (see Figure 6) for Beach consequence categories, given the existing controls and their effectiveness.
- Identify the likelihood rating (1 to 6) that the consequence could be realised, i.e. the probability of the consequence occurring (see the top of Figure 6 for Beach likelihood rating table) given the existing controls and their effectiveness.
- The likelihood rating of 1 to 6 should be used in conjunction with the consequence rating 1 to 6 in the Risk Matrix to identify the risk ranking (see Figure 6 for Beach risk matrix).
- Reduce all risks are to a level that is considered to be ALARP, with actions taken in line with the Risk Management Action Table (see Table 7).

Further details of this process are provided in the following sections.

							LIKELIHOOD							
							1 REMOTE	2 HIGHLY UNLIKELY	3 UNLIKELY	4 POSSIBLE	5 LIKELY	6 ALMOST CERTAIN		
							<1% chance of occurring within the next year. Occurrence requires exceptional circumstances exceptionally unlikely event in the long-term future only occur as a 100-year event.	>1% chance of occurring within the next year. May occur but not anticipated could occur years to decades.	>5% chance of occurring within the next year. May occur but not for a while could occur within a few years.	>10% chance of occurring within the next year. May occur shortly but a distinct probability it wont occur within months to years.	>50% chance of occurring within the next year. Balance of probability will occur could occur within weeks to months.	99% chance of occurring within the next year. Impact is occurring now could occur within days to weeks.		
	Impact to Beach or contracting personnel	Natural environment	Community damage/ impact/ social/ cultural heritage	Financial impact (e.g. due to loss of revenue, business)	Damage to reputation, services interruption, customer interruption	Breach of law or criminal prosecution or civil action (e.g. OHS, environment, industrial relations, trade practices, industry acts)								
CONSEQUENCE CATEGORIES	6 CATASTROPHIC	Multiple fatalities >4 or severe irreversible disability to large group of people (>10).	Long term destruction of highly significant ecosystem or very significant effects on endangered species or habitats.	Multiple community fatalities, complete breakdown of social order, irreparable damage of highly valued items or structures of great cultural significance.	EBIT: impact, loss or deterioration from expectation greater than \$100m. CASH FLOW: severe cash flow crisis, unable to source funds.	Negative international or prolonged national media (e.g. 2 weeks). continued severe degradation of services to customers > 1 month or > 10,000 customer days.	Potential jail terms for executives and or very high fines for the company. Prolonged multiple litigations.	6 CATASTROPHIC	HIGH	HIGH	SEVERE	SEVERE	EXTREME	EXTREME
	5 CRITICAL	1-3 fatalities or serious irreversible disability (>30%) to multiple persons (<10).	Major offsite release or spill, significant impact on highly valued species or habitats to the point of eradication or impairment of the ecosystem. Widespread long-term impact.	Community fatality. Significant breakdown of social order. Ongoing serious social issue. Major irreparable damage to highly valuable structures/ items of cultural significance.	EBIT: impact, loss or deterioration from expectation greater than \$30m but less than \$100m. CASH FLOW: severe cash flow crisis, difficulty to source funds. Probable credit rating downgrade.	Negative media national for 2 days or more. Significant public outcry. severe degradation of services to customers up to 1 month or >5,000 customer days	Very significant fines and prosecutions. Multiple prosecution and fines.	5 CRITICAL	MEDIUM	MEDIUM	HIGH	SEVERE	SEVERE	EXTREME
	4 MAJOR	Serious permanent injury/ illness or moderate irreversible disability (<30%) to one or more persons.	Offsite release contained or immediately reportable event with very serious Environmental effects, such as displacement of species and partial impairment of ecosystem. Widespread medium and some long-term impact.	Serious injury to member of the community. Widespread social impacts. Significant damage to items of cultural significance.	EBIT: impact, loss or deterioration from expectation greater than \$3m but less than \$30m. CASH FLOW: Loss of flexibility and/or increase in cost to source funds. Market explanation required.	Negative national media for 1 day. Individual customers or segments disadvantaged up to 1 week. Customer interruption >500 customer days. NGO adverse attention.	Major breach of regulation and significant prosecution including class actions.	4 MAJOR	MEDIUM	MEDIUM	MEDIUM	HIGH	SEVERE	SEVERE
	3 SERIOUS	Serious reversible/ temporary injury/illness (e.g. lost time >5 days or hospitalisation or alternate/Restricted Duties > 1 month).	Moderate effects on biological or physical environment and serious short term effect to ecosystem functions.	Media attention and heightened concerns by local community and criticism by NGOs. Ongoing social issues. Permanent damage to items of cultural significance.	EBIT: impact, loss or deterioration from expectation greater than \$0.3m but less than \$3m. CASH FLOW: Material impact to cash flow.	Negative state media. Heightened concern from local community. Service interruption up to 1 day or > 10 customer days. Criticism by NGOs.	Serious breach of law/regulation with investigation or report to authority with possible prosecution. Performance infringement notice (Pin).	3 SERIOUS	LOW	MEDIUM	MEDIUM	MEDIUM	HIGH	SEVERE
	2 MODERATE	Reversible temporary injury/illness requiring Medical treatment (e.g., lost time <5 days or alternate/Restricted Duties for < 1 month).	Event contained within site. Minor short term damage to area of limited significance. Short term effects but not affecting ecosystem functions.	Medical treatment injury to a member of the community, Minor adverse local public or media attention and complaints. Minor medium term social impact on local population, mostly repairable.	EBIT: impact or loss greater than \$30k but less than \$0.3m. CASH FLOW: impact to project or business unit cash flow.	Public concern restricted to local complaints Negative local media. Internal escalation to senior management. Few hours service interruption. Adverse local public attention.	Breach of law/regulation or non-compliance. Minor legal issues, minor litigation possible.	2 MODERATE	LOW	LOW	MEDIUM	MEDIUM	MEDIUM	HIGH
	1 MINOR	Injury/illness requiring Medical treatment (no lost time, no alternate/ Restricted Duties), First aid, Report only.	Minor consequence, local response. No lasting effects. Low level impacts on biological and physical environment to an area of low significance.	Public concern restricted to local complaints, low level repairable damage to common place structures.	EBIT: impact or loss greater than \$3k but less than \$30k. CASH FLOW: no significant impact.	Public concern restricted to local complaints.	Local investigation, minor breach of regulation, on the spot fine or technical non-compliance. Prosecution unlikely.	1 MINOR	LOW	LOW	LOW	MEDIUM	MEDIUM	MEDIUM

Figure 6: Corporate Risk Matrix and Likelihood Rating Table

Table 7: Risk Management Action Table

Level of Risk	Action Required	Acceptance Authority
EXTREME	Risk treatment Plan must be in place immediately Risk reviewed monthly by Risk owner	CEO or Managing Director
SEVERE	Risk treatment must be considered Risk reviewed monthly by Risk owner	Divisional Executive
HIGH	Risk treatment must be considered Risk reviewed twice per year by Risk owner	General Manager or Department Head
MEDIUM	Risk treatment may be considered Risk reviewed annually by Risk owner	Group/Asset/Project/Site Manager
LOW	No risk treatment required Risk reviewed annually by Risk owner	Site/activity Supervisor

5.2.3 Acceptability and ALARP Assessment

Following the initial HAZID and the qualitative risk assessment, Beach reviewed each of the hazards and gathered data to better define them and to confirm likelihood and consequences.

The extent of the review to determine the acceptability of risk should be commensurate with the level of risk, the inherent consequence and how society accepts similar hazards from other users and industries. For example, if an event has virtually no environmental impact and is standard accepted practice within other industries then the demonstration of acceptability and ALARP should be relatively simple. On the other hand, if there is significant risk, with potentially major consequences and it is not a standard industry or community accepted practice then Beach has spent considerably more effort assessing it, examining the controls to ensure they are effective and determining other risk reduction measures to be implemented.

For low risks with moderate consequences or less, Beach requires the hazard to comply, at a minimum, with standard industry practices and for there to be at least two controls in place to manage it. Once these criteria are satisfied the hazard is then subject to a final acceptability and ALARP review.

In line with the with the Risk Management Action table (Table 7), all risks are subject to risk acceptance and the level of authority required to accept a risk is commensurate with the level of risk.

5.2.4 ALARP and Review of Risk Reduction Measures

The determination of ALARP has been an ongoing process from the original identification of the hazard. Additional controls have been developed at all stages, including:

- Initial workshops where additional risk reduction measures were examined and raised.
- Definition phase of the hazards.
- Examination of controls.
- Peer reviews.

- Final risk assessment and ALARP session.

Risk reduction measures identified for consideration were chosen from the top of the control measure hierarchy:

- Elimination.
- Substitution.
- Prevention.
- Engineering controls.
- Procedural controls.
- PPE.
- Emergency Response.



When deciding on whether to implement the proposed control/risk reduction measure, the following issues were considered:

- Does it provide a clear or measurable reduction in risk?
- Is it technically feasible and can it be implemented?
- Will it be supported and utilised by site personnel?
- Is it consistent with national or industry standards and practices?
- Does it introduce additional risk in other operational areas, e.g., will the implementation of an environmental risk reduction measure have an adverse impact on safety?
- Whether the change is effective considering the:
 - Current level of risk i.e., with the existing controls.
 - Amount of additional risk reduction that the control will deliver.
 - Level of confidence that the risk reduction impact will be achieved.
 - Resources, schedule and cost required implementing the control.

ALARP is an ongoing process and new risk reduction measures may be identified at any time, including during operations. Beach actively encourages recording and review of observations and good ideas through the HSEMS and responding to change through Standard 11 Management of Change. Incidents and lessons learned within Beach and Lattice and from the wider industry are reviewed and utilised to identify hazards and controls.

Finally, the effectiveness of ALARP measures will be demonstrated by setting objectives, standards and measurement criteria or key performance indicators for critical controls, and then identifying where action needs to be taken.

5.3 Risk Assessment Register

This EP summary details the impacts and risks to the offshore environment from the Project. As described previously, the use of the ERD methodology removes interaction with the marine environment; however, risks associated with well integrity and the coastal environment are still included in the following sections for transparency and completeness.

There are no identified risks to the marine and coastal environment from planned activities, as the drilling is greater than 1,300 m beneath the seafloor. Without suitable controls in place, unplanned activities and events could potentially impact the marine environment. The list of environmental risks for the Project which were identified through the Beach HAZID and risk assessment process and are relevant to this EP Summary are listed in Table 8 and discussed in Section 5.4.

Table 8: List of Environmental Risks

ID	Risk
R1	Disturbance to Port Campbell National Park
R2	Loss of containment – water based muds
R3	Loss of containment – synthetic based muds
R4	Emergency event - loss of containment/well control

5.4 Risk Assessment Discussion

5.4.1 Disturbance to Port Campbell National Park

5.4.1.1 Overview of Risk

Project activities with the potential to disturb the values of the PCNP are:

- Clearing of native roadside vegetation along Sharps Road to create safe access to the wellsite.
- Generation of noise from site construction including mobile plant, the operation of the drill rig equipment (e.g., drill rig, shale shakers, generators and flaring) and the VSP sound source.
- Increased traffic e.g., excavation vehicles during construction, and delivery trucks and Project personnel vehicles.
- Lighting at the drill rig and wellsite.
- Wellsite occupancy.

The PCNP is located approximately 400 m south of the proposed wellsite. While the well path passes through the PCNP, no ground disturbance is required in the park because the ERD path passes no closer than 1,000 m below the PCNP.

Indirect impacts may occur to fauna residing in the PCNP and moving within pockets of native vegetation surrounding the park, such as those occurring along the Sharps Road road reserve. In addition, visitors to the PCNP may also experience disturbance via indirect impacts due to the wellsite occupancy. These potential effects may include:

- Habitat loss/fragmentation from wellsite and access construction.
- Displacement/disturbance of fauna from noise relating to site construction including mobile plant, and the 24/7 drill rig operation.
- Attraction of fauna to Project lighting (e.g., drill rig and work areas), resulting in fauna disturbance or mortality.
- Displacement of fauna due to wellsite occupancy and access construction.
- Fauna mortality or injury due to Project activities e.g., vehicle strike.
- Disruption to PCNP amenity due to wellsite occupancy e.g., visibility of drill rig.

5.4.1.2 Controls and ALARP Discussion

Control measures to be implemented to reduce risks to the PCNP will include:

- No surface works will occur in the PCNP. The drill string will pass at least one km beneath the surface of the PCNP then deeper beneath the ocean floor.
- Project to minimise disturbance to intact native vegetation and habitat where practicable.
- All work to occur within clearly defined/fenced areas.
- Noise attenuation applied (e.g., generators in sound-proof housings) and no high impact noise or vibration producing activities such as pile driving required during construction.
- Security fence installation around the perimeter of the wellsite with shade cloth to the bottom one metre to prevent small fauna from entering; once fencing installation is completed all site activity will take place inside the fenced area.
- Directional night lighting to be installed and perimeter lighting placed close to the ground and angled down to reduce light spill.
- All vehicles will remain within the designated access ways and park within designated parking areas.
- No parking of vehicles will be permitted off the site on surrounding road reserves.
- No work-related vehicles within the PCNP while under contract to Beach.
- The traffic management plan (TMP) (applicable to all staff, contractors and sub-contractors) specifies restriction of access to PCNP.
- Avoidance of driving during dawn and dusk, as far as practicable.
- Site induction will specify areas of restricted access.
- Signposts will be erected and maintained at the wellsite entrance/exit on Sharps Road indicating prohibited access to PCNP.

With successful implementation of the control measures listed above, the impact of Project activities on the PCNP will be short term and localised. The wellsite is located over 400 m from the PCNP where important biological habitat for threatened species is known to occur. The wellsite consists of disturbed agricultural land which does not provide important habitat for nationally significant flora and fauna residing in the national park. Further, vegetation removal located on the Sharps Road road reserve to allow access of vehicles into the wellsite is not expected to impact species within the PCNP and requires clearing of predominantly low quality vegetation. The disturbance footprint has been kept to the minimum required to allow for safe access.

Directional night lighting will be fitted to reduce light spill on site, and perimeter and other lights will be placed close to the ground and angled downwards to reduce the amount of light emitted outside of the Project area. These measures will reduce the risk of attracting fauna from the PCNP. The risk of fauna mortality upon entering the site will also be reduced by security fence installation around the perimeter of the wellsite.

Noise attenuation will be applied to reduce the exceedance of ambient noise levels at the PCNP.

The TMP applies to all staff, contractors and sub-contractors and traffic management measures will include reduced speed limits on roads surrounding the wellsite and access to the PCNP will be restricted to avoid disturbance and mortality or injury of fauna due to vehicle strike.

The construction and drilling phases of the Project will be short in duration (six months in total). Therefore the impact upon visual amenity is likely to be localised, impacting very few individuals and will be temporary. It is also important to note that the area is a region of oil and gas activity and drill rigs have been present in the area for previous drilling projects.

Overall, the consequence of Project activities on the PCNP is assessed as 'moderate' given the ecological value of the park (which supports threatened species) and the likelihood of effects on fauna and visitors to the national park as 'highly unlikely' given the short duration of the activities. As such disturbance to the PCNP, specifically in relation to risks to fauna inhabiting the park and visitors to the national park is assessed as representing a 'low' risk and is ALARP and acceptable.

5.4.2 Loss of Containment – Water Based Muds

5.4.2.1 Overview of Risk

Loss of containment during drilling or from storage of WBM and cuttings may result in soil, surface water, or groundwater contamination. Water based muds and cuttings from well drilling will be stored in a lined sump and the wellpad has spill containment both of which will be designed and operated to prevent an uncontrolled release from the site.

5.4.2.2 Controls and ALARP Discussion

Potential sources of contamination from WBM and cuttings will be managed in accordance with Project chemical storage and handling procedures and practices, containment systems, drainage controls, waste management procedures, and emergency response procedures.

The primary control measure is to isolate WBM and cuttings in an elevated lined sump sited in a geotechnically stable location identified by the Enterprise-1 geotechnical survey. The sump lining will be inspected and repaired immediately if there is suspected or known damage. Daily visual checks of the WBM sump will be made during drilling. When a 1-m freeboard is reached or the wellsite experiences excessive rainfall, the fluids will be pumped into an enclosed vacuum unit and trucked offsite for disposal at an EPA licensed facility.

The DMP details how rainfall and bund water storage and drainage on site is managed for drilling operations. The objective of the plan is to ensure that there is no contaminated spill from the wellsite area and roads into surrounding countryside during drilling operations.

Overall, the consequence is assessed to be 'moderate' while the likelihood of the loss of containment of WBM is 'highly unlikely' given the relatively low toxicity of WBM and the containment controls in place. As such, loss of containment of WBM is assessed as representing a 'low' risk that is considered acceptable and ALARP.

5.4.3 Loss of Containment – Synthetic Based Muds

5.4.3.1 Overview of Risk

Loss of containment during drilling, storage or transport of SBM and cuttings may result in soil, surface water, or groundwater contamination or habitat degradation.

Dried cuttings produced from the sections of the wells drilled with SBM will be collected in high-sided tip truck containers which will be subsequently covered and transported by road to an EPA Victoria licensed waste facility.

5.4.3.2 Controls and ALARP Discussion

The use of SBM is closely monitored by a dedicated mud logger with a mud-log report published daily. Controls for SBM and cuttings include:

- Developing a standard operating procedure for the mud circulating system and mixing hopper.
- Separated SBM cuttings circulated to surface from the SBM in the shale shakers where the SBM is recovered and reused; the SBM cuttings are further centrifuge separated from SBM then dried in the cuttings drier, and are then collected directly into high-sided tippers ready for offsite disposal.
- Installing a mud bucket and Katch Kan to catch residual SBM that drips from the drill pipe as it is pulled from the wellbore and reusing recovered SBM.
- Placing plastic matting under the rig and the use of an enclosed vacuum unit to capture any splashing of wet SBM cuttings to ground.
- Collecting SBM for transport off-site by a licensed regulated waste contractor to a licensed regulated EPA waste facility for reuse/recycling or disposal.
- Storing all chemicals, hazardous materials and substances in accordance with the Victorian WorkSafe Code of Practice for the storage and handling of dangerous goods.
- Segregating and labelling waste in accordance with the SDS and storage in a bunded area.
- Undertaking loading and unloading arrangements for SBM within the mud tank containment area.
- Designing the wellsite drainage management (DMP) to contain a SBM spill for a 20-year storm event concurrent with a 30 m³ spill during drilling operations. The drainage process will include a HDPE lined sump and HDPE lined drainage channels (1 m deep) draining to a spill basin and then to an overlay spillway to cater for flows larger than a 20-year rain event. A penstock or other isolating valve will be fitted to the exit of the spill basin to prevent discharge to the adjacent paddock during a spill event.

Overall, the consequence is assessed to be 'serious' while the likelihood of the loss of containment of SBM is 'unlikely' given that the wellsite is separated from sensitive environmental receptors such as sinkholes and the PCNP, and controls are in place to contain SBM including the use of a cuttings drier process that solidifies the cuttings for disposal. As such, risk is assessed as 'medium', acceptable and ALARP.

5.4.4 Emergency Event – Loss of Containment/Well Control

5.4.4.1 Overview of Risk

An emergency event causing a loss of containment could result from damage to drilling equipment, well bore pipeline corrosion, or in an extreme case the loss of well control leading to a blowout caused by abnormally high sub-surface pressure in the reservoir. While a loss of well control event releasing petroleum hydrocarbons to the environment from drilling activities is an event that can occur, it is highly unlikely.

Hydrocarbon gas releases present significant risks to personnel, and flora and fauna due to the potential for fire and explosion if an ignition source is present.

5.4.4.2 Controls and ALARP Discussion

The Well Operations Management Plan (WOMP) details the risks associated with drilling a new well at a new location. The WOMP presents the well integrity control measures required to undertake the drilling safety.

The main controls that prevent a loss of containment/well control emergency event are:

- Engagement of experienced drilling personnel.
- Casing and wellhead design integrity to prevent well blowout.
- Drilling fluid program implementation to provide hydrostatic overbalance.
- Blowout preventer surface well control equipment.
- Pressure testing casing strings and cement bond and determining kick tolerance for each hole section.
- Using floats in drill strings and casings to prevent backflow.
- Pressure testing well equipment prior to use and regularly after installation.
- Availability of kill mud (to be mixed in the reserve pit) when drilling the top hole section.

Pressure parameters will be continuously monitored during drilling, and two independent flow detection alarm systems will be installed on the mud circulating system. Fluid losses will be continuously monitored during drilling to maintain well control.

The Rig Emergency Response Plan (ERP) and the Enterprise-1 Emergency Response and Interface Plan (ERIP) contain a well control response plan. Key members of Beach's drilling management team, including the Principal Drilling Engineer, the Drilling Superintendent and the Wellsite Representatives will all hold well control certification.

Corrosion mitigation will be managed through the selection of appropriate materials for the casing string in accordance with the WECS.

Overall, the consequence is assessed to be 'critical' given the potential for major offsite impacts, potential reputational damage and or injury to personnel, while the likelihood of a loss of containment/well control emergency event is 'remote' given the previous stable well experience of similar gas well drilling in the region and the multilevel prevention controls in place. As such, a loss of containment/well control emergency event is assessed as representing a 'medium' risk and is considered acceptable and ALARP.

5.4.5 Risk Assessment Summary

Table 9 provides a summary of the environmental risk assessment discussed in detail in Section 5.4 including the control measures and residual risk rating scores.

Table 9: Environmental Risk Assessment Summary

Risk ID	Risk	Causes	Consequences	Control	Consequence	Likelihood	Level of Risk
R1	Disturbance to Port Campbell National Park	<ul style="list-style-type: none"> Unauthorised vehicle access to the PCNP from the wellsite Disturbance/trampling of vegetation in adjacent PCNP or localised disturbance to flora and fauna Noise relating to construction and mobile plant and drill rig (e.g., drill rig, shale shakers, excavators, generators, flaring and the VSP sound source) Increased traffic in the area, e.g., delivery trucks Lighting of the drill rig and wellsite Wellsite occupancy 	<ul style="list-style-type: none"> Damage to PCNP including habitat loss and fragmentation Fauna displacement/disturbance from noise relating to construction, mobile plant drilling (24/7 operation) and the VSP (approx. 48 hours) Attraction of fauna due to lighting of rig resulting in fauna mortality and disturbance Fauna mortality or injury due to Project activities e.g., vehicle strike Disruption to amenity due to wellsite occupancy e.g., visibility of drill rig 	<ul style="list-style-type: none"> No surface works will occur in the PCNP. The drill string will pass over 1 km beneath the surface of the PCNP then deeper beneath the ocean floor. Project to minimise disturbance to intact native vegetation and habitat where practicable. All work to occur within clearly defined/fenced areas. Noise attenuation applied (e.g., generators in sound-proof housings) and no high impact noise or vibration producing activities such as pile driving required during construction. Security fence installation around the perimeter of the wellsite with shade cloth to the bottom one metre to prevent small fauna from entering; once fencing installation is completed all site activity will take place inside the fenced area. Directional night lighting to be installed and perimeter lighting placed close to the ground and angled down to reduce light spill. All vehicles will remain within the designated access ways and park within designated parking areas. No parking of vehicles will be permitted off the site on surrounding road reserves. No work-related vehicles within the PCNP while under contract to Beach. The TMP (applicable to all staff, contractors and sub-contractors) specifies restriction of access to PCNP and reduced speed limits. Avoidance of driving during dawn and dusk, as far as practicable. Site induction will specify areas of restricted access. Signposts will be erected and maintained at the well site entrance/exit on Sharps Road indicating prohibited access to PCNP. 	2 - Moderate	2 - Highly Unlikely	Low
R2	Loss of containment – water based muds	<ul style="list-style-type: none"> WBM storage sump is overfilled Damaged sump liner High rainfall and insufficient storage capacity cause overflow Inappropriate management or storage of muds Cement returns exceed expectations 	<ul style="list-style-type: none"> Contamination of soil Contamination of surface water Contamination of groundwater Disturbance to habitat 	<ul style="list-style-type: none"> The DMP demonstrates controls for excessive rainfall periods, water storage bunds and how drainage on site is managed for drilling operations. WBM cuttings and residual WBM will be collected either directly from the cuttings chute into tanks or in a lined sump adjacent to the rig location. Cuttings will be transported offsite as drilling progresses (thereby reducing the size of the sump required). The sump will be inspected following any clean-out by excavator. Any tears or damage that present a risk of leakage will be repaired prior to further use. The build-up of sediment in the sump and excess fluid will be inspected and removed to ensure there is no overflow. The sump will be emptied to ensure it maintains a 1m freeboard. Enclosed vacuum unit will be available to remove cuttings and liquids discharged into the sump. 	2 - Moderate	2 - Highly Unlikely	Low

Risk ID	Risk	Causes	Consequences	Control	Consequence	Likelihood	Level of Risk
R3	Loss of containment – synthetic based muds	<ul style="list-style-type: none"> Spills during loading/unloading High rainfall and insufficient storage capacity cause overflow SBM cuttings bins or mixing hopper tanks overfilled Inappropriate management or storage of muds Human error leading to failure of management systems and/or equipment operation Conveyor/auger system spills 	<ul style="list-style-type: none"> Contamination of soil Contamination of surface water Contamination of groundwater Degradation of habitat 	<ul style="list-style-type: none"> The DMP to address: <ul style="list-style-type: none"> Management of rainfall/water storage and drainage/runoff on site. Spill capture management and sump design. Drainage management system designed to contain a SBM spill and will be designed for a 20 year storm event (three day duration) concurrent with a 30 m³ spill during operations including a spill basin with a penstock or isolating valve. Drainage system to include a HDPE lined sump and lined drainage channels designed to convey a 100-year storm event. Chemicals, hazardous materials and substances will be stored in accordance with the Victorian WorkSafe Code of Practice for the Storage and Handling of Dangerous Goods, and in a manner that prevents and contains any spills. Oil containers to be stored in a designated sealed and bunded area. Waste will be labelled and segregated in accordance with the SDS and stored in a bunded area. Plastic matting will be installed below the rig floor and rig tank area to prevent spills to ground of liquid SBM and cuttings. A catchment system (mud bucket and Katch Kan) will be installed to catch any residual SBM that drips from the drill pipe as it is pulled from the wellbore. The captured SBM will be recycled into the circulating system. A mobile vacuum unit will be used to capture and clean up any resultant SBM spills. SBM cuttings circulated to surface will exit the fully enclosed mud system from the shale shakers on the drilling rig. They will then be further separated from the liquid SBM by means of additional mechanical separation (centrifuge/cuttings dryer). The system to convey cuttings from the shakers to the secondary solids control equipment will be designed to efficiently convey the material and avoid spills. SBM will be contained in mud tanks and re-circulated during drilling. Waste SBM and drill cuttings will be removed by an EPA approved contaminated waste disposal facility in accordance with EPA Victoria requirements. SBM is used in a closed system and any surplus SBM at the end of the project is returned to the supplier. The loading and unloading arrangements for SBM materials from vehicles will be carried out within specified areas of the site at all times and only by competent persons in the appropriate positions (Derrick Man/Assistant Driller). A standard operating procedure (SOP) for the mud circulating system and mixing hopper will include: <ul style="list-style-type: none"> Safety pin and colour coded valves. SOP training and competency assessment. Identify competent positions responsible for SBM operations. 	3 - Serious	2 - Unlikely	Medium
R4	Emergency event – loss of containment/well control	<ul style="list-style-type: none"> Equipment failure/corrosion Human error Drilling design error No emergency response Poor drilling practice Mud density changes Well bore instability 	<ul style="list-style-type: none"> Loss of containment Serious injury Disturbance/mortality of flora and fauna through contamination Soil and groundwater contamination Gas emissions Loss of property Escalation to bushfire 	<ul style="list-style-type: none"> Beach WECS Standards will be adhered to at all times. The ERIP. Emergency response exercises with rig employees will be undertaken to ensure employees are adequately trained in well control response. Drilling fluid program implementation to maintain positive pressure (overbalance). Casing and wellhead have been designed to minimise the risk of well blowout. A blowout preventer will be installed and tested every 2-3 weeks. Casing strings and cement bond will be pressure tested and kick tolerance will be determined for each hole section. Floats will be provided in drill strings and casings to prevent backflow. Well equipment will be pressure function tested prior to commencement of operations and regularly after installation. Two independent flow detection alarm systems will be installed on the mud circulating system. Pressure parameters will be continuously monitored during drilling. Fluid losses will be continuously monitored during drilling to maintain well control. Beach Drilling Superintendent and Drilling Supervisor/ Ensign Rig Manager/Supervisor and Ensign Driller shall all hold well control certification. Kill mud will be mixed in the reserve pit and be available at all times when drilling the top hole section. 	5 - Critical	1 - Remote	Medium

6 Environmental Performance Objectives, Standards and Measurement Criteria

This section presents the environmental performance objectives, standards, and measurement criteria used to address the risks identified for the Project.

Table 10 lists the key objectives, standards and measurement criteria that Beach use to ensure that the environmental risks are managed to ALARP. Objectives have been developed for each of the identified environmental risks and have been based around the identified controls from the control assessment described in Section 1. For each objective a standard has been developed in conjunction with measurement criteria.

A summary of the objectives, standards and criteria in place for the identified environmental risks is presented in Table 10.

Table 10: Objectives, Standards and Criteria

Risk ID/Impact	Objectives	Standards	Criteria
R1: Disturbance to Port Campbell National Park	No physical disturbance to the PCNP. Prevent unauthorized Project vehicle access to PCNP.	<ul style="list-style-type: none"> Schedule 2 of the <i>National Parks Act 1975</i> Section 40 of the <i>National Parks Act 1975</i> <i>National Parks Regulations 2013</i> Project specific Journey Management Plan 	<ul style="list-style-type: none"> Signage directing to wellsite. Fencing and/or 'No access for Beach employees or contractors' signposts are erected and maintained on the access road to BICP. Induction will include areas of restricted access including BICP. Any BICP restricted access non-compliances logged in Beach's CMO system. Fauna mortality from project vehicle strike recorded, reported and investigated as per incident management process.
R2: Loss of containment - water based muds	No unplanned discharge of separated water, cuttings, or WBM from sumps throughout the Project.	<ul style="list-style-type: none"> <i>Environment Protection Act 1970</i> Section 38 and 39 HSEMS Standard 16 Monitoring of the Working Environment & 18 Environment Effects and Management Enterprise-1 WOMP WECS Standards INT-1000-DRL-STD-17891671 – Section 13 Drilling and Completions Fluid Drainage Management Plan Incident Management Directive (LAT-RMS-DIR-006) 	<ul style="list-style-type: none"> Daily visual inspection of sump integrity and freeboard availability. Daily drilling report records WBM use and cuttings generated for licenced disposal. Records of sump maintenance. Issues or events that occur recorded in CMO. Audit records assessing compliance with the EP commitments. Corrective Action Register records remedial action taken.

Risk ID/Impact	Objectives	Standards	Criteria
R3: Loss of containment - synthetic based muds	No unplanned discharge of SBM or cuttings from the holding tanks throughout the Project.	<ul style="list-style-type: none"> • <i>Environment Protection Act 1970</i> Sections 38 and 39 • Victorian WorkSafe Code of Practice for the Storage and Handling of Dangerous Goods • Enterprise-1 WOMP • HSEMS Standard 16 Monitoring of the Working Environment • HSEMS 18 Environment Effects and Management • WECS Standards INT-1000-DRL-STD-17891671 – Section 13 Drilling and Completions Fluids • HSE Management System -Standard 20 (LAT-HSE-SYS-001-20) Audits, Assessment and Review) • Incident Management Directive (LAT-RMS-DIR-006) 	<ul style="list-style-type: none"> • Records of SDS for Synthetic Based Drilling Mud. • Equipment certification documentation demonstrates equipment fit for purpose. • Daily drilling report records SBM use and cuttings generated for licenced disposal. • Daily mud reports tracks use of SBM. • Waste management process to record SBM disposal tracking. • Training records of Mud Engineers. • Issues or events that occur recorded in CMO. • Audit records assessing compliance with the EP commitments. • Corrective Action Register records remedial action taken.
R4: Emergency event - loss of containment/well control	Maintain well integrity and prevent loss of containment/well control.	<ul style="list-style-type: none"> • Enterprise-1 WOMP • Regulations 8 to 12 (Division 2) of the <i>Petroleum Regulations 2011</i> under the <i>Victorian Petroleum Act 1998</i> • Crisis and Emergency Management LAT-RMS-DIR-003 • Emergency Response and Interface Plan 	<ul style="list-style-type: none"> • Well Acceptance Criteria sheet (issued via the Detailed Drilling Program) is used to verify compliance with the well design. • Bridging document between Beach's WECS and Drilling Contractors Well Control Standard signed and approved. • Records of equipment testing. • Daily reports to record: <ul style="list-style-type: none"> ○ pressure testing. ○ Well parameters. ○ Fluid losses. • Records of testing and review of ERIP. • Certificates of well control. • Records of emergency response exercises undertaken and to schedule.

7 Environmental Performance Monitoring

7.1 Beach Energy Environmental Commitment

Beach and its contractors operate under an established HSEMS to minimise and manage the impacts of activities, employees, contractors, on the environment and the communities in which the company operates.

The HSEMS is a key tool in the management of the Company and associated contractors' environmental responsibilities, issues and risks. The HSEMS also provides a framework for the coordinated and consistent management of environmental issues by ensuring the:

- Establishment of an environmental policy (see <http://www.beachenergy.com.au>).
- Identification of environmental risks and legal and other requirements relevant to the operations.
- Setting of appropriate environmental objectives and targets.
- Delineation of responsibilities.
- Establishment of a structure and program to implement environmental policy and achieve objectives and targets, including the development of procedures or guidelines for specific activities and education and induction programs.
- Facilitation of planning, control monitoring, corrective action, auditing and review of activities to ensure that the requirements and aspirations of the environmental policy are achieved.

7.2 Health Safety and Environment Management System

Beach Energy's environmental commitments for the Enterprise-1 Exploration Drilling Program project are communicated and implemented under the HSEMS. The HSEMS and standards apply to HSE related matters for activities and operations controlled by Beach including the impact of those activities and operations on employees, contractors, the environment and the communities in which the company operates. The Project will provide information and take action as required by the HSEMS to ensure compliance with the performance objectives and standards established in the EP.

The HSEMS is designed to provide Beach with a consistent approach to HSE management and to allow for the integration of HSE management processes and responsibilities with other business unit requirements such as where individual businesses units and sites establish HSE management plans that describe how HSE risks are managed e.g., the Enterprise-1 Exploration Drilling Program EP and the Enterprise-1 Emergency Response and Interface Plan (ERIP).

At the core of the HSEMS are 20 standards (Table 11) that detail specific requirements to manage potential risks leading to the implementation of the Beach Energy Environmental Policy commitment to conduct operations in an environmentally responsible and sustainable manner.

Table 11: HSEMS Standards

No	Standard	No	Standard
1.	Leadership and Commitment	11.	Management of Change
2.	Organisation, Accountability, Responsibility and Authority	12.	Facilities Design, Construction and Commissioning
3.	Planning, Objectives and Targets	13.	Contractors, Suppliers, Partners and Visitors

No	Standard	No	Standard
4.	Legal Requirements, Document Control and Information Management	14.	Crisis and Emergency Management
5.	Personnel, Competence, Training and Behaviours	15.	Plant and Equipment
6.	Communication, Consultation and Community Involvement	16.	Monitoring the Working Environment
7.	Hazard and Risk Management	17.	Health and Fitness for Work
8.	Incident Management	18.	Environmental Effects and Management
9.	Performance Measurement and Reporting	19.	Product Stewardship, Conservation and Waste Management
10.	Operations	20.	Audits, Assessments and Review

Integral to each standard is a series of HSE management processes including directives, procedures and other support documents that provide detailed information on requirements for implementation of performance objectives and standards. The Enterprise-1 Exploration Drilling Program HSE Management Plan has been developed to outline the health, safety and environmental responsible roles for HSEMS standards implementation.

7.3 Ongoing Monitoring of Environmental Performance

7.3.1 Personnel, Competence, Training and Behaviours

Employees are carefully selected, trained and supported, and fitness for work, competence and behaviours are assessed at a minimum two yearly interval and monitored. This is tracked by the site training and competency matrix. Contractors are to provide competent workers and regularly assess and monitor their fitness for work.

All personnel (Beach and contractors) will be required to undergo a project specific HSE induction. An environmental awareness presentation will be conducted during the Project specific induction prior to the start of operations. This will highlight the main environmental risks, relevant control measures, incident response and required reporting measures. Contractors and suppliers are required to ensure that all personnel have attended the induction training before the commencement of work. The personnel should also be familiar with the environmental controls required by the EP relevant to their scope of work

Regular refresher training will be delivered in toolbox talk sessions on EP related information. Environmental awareness topics will be included in toolbox and various other Project meetings.

Visitors will also be required to attend an induction prior to entry into the Project area. Records of inductions and other environmental awareness training provided will be held by the Beach Project Manager.

7.3.2 Performance Measurement and Reporting

Health, safety, and environmental performance data is collected, analysed and reported to monitor and evaluate ongoing HSE performance and drive continual improvement.

The Beach Project Team will prepare a monthly environmental report to update the Beach Project Manager on the activities of the previous month, typically a summary of the weekly reports and submit a report will be submitted monthly to DJPR by the 15th day of each calendar month. Daily drilling reports will also be provided to DJPR for the duration of the drilling program.

Beach will submit an end of project performance report summarising the performance against the requirements of the EP. The performance report will be submitted to DJPR as soon as possible upon completion of the drilling activity. Beach will also provide DJPR with details on; drilling activities, together with logs and maps, samples of any material tested and relevant results and any petroleum reservoir identified.

7.3.3 Audits, Assessment and Review

Auditing of the Enterprise-1 EP and the underpinning procedures and practices will be undertaken in accordance with the Project HSEMS audit schedule to identify any deficiencies and recommend corrective action. Audit activities will include:

- Internal audits, assessments and reviews conducted by Ensign Field HSE advisers.
- Audits, assessments and reviews of the drilling contractor activities by Beach.

Outstanding actions will be managed through Beach Energy's CMO system to enable the Beach Site Representative to address and close out any items as necessary.

In addition, compliance audits against the commitments made in the EP, and development approval conditions, will be conducted as a minimum:

- On commencement of the development activities.
- Following a major environmental incident.

All such audits ensure that the EP continues to be suitable and effective, and complies with all operations HSE and regulatory requirements.

7.3.4 Incident Reporting and Recording

All environmental incidents will be reported to the Project Manager and will be investigated.

Beach will notify the Regulator of any reportable incidents within two hours of the incident occurrence or becoming aware of an incident's occurrence. The initial notification (oral or written) will be followed by a written report of the incident submitted within three business days. In the context of this Project a reportable incident is defined as any incident of consequence category 2 (moderate) or greater.

Monthly reports will be submitted to DJPR during the drilling campaign detailing any recordable incidents. Should no recordable incidents have occurred during the calendar month, a report will be lodged stating 'nil' incidents,

Written reports of recordable incidents will be stored and maintained for a period of five years from the making of the document and in a way that makes retrieval of the document or other record reasonably practicable.

The Area Chief Ranger for Parks Victoria and Barwon South West Program Manager Planning Approvals for DELWP will be notified when there are any reported impacts from the drilling activity to the PCNP.

7.3.5 Contractors, Suppliers, Partners and Visitors

The Project team will monitor all contractors, suppliers and partners in accordance to the Health Safety Environment Management Plan (HSEMP) and Beach's Contractor Management Directive. The approval for a contractor to commence the works under contract is subject to the contractor demonstrating appropriate safety management planning and preparation.

A contractor shall both assess and pre-qualify its third-party contractors (and equipment) to ensure it meets the HSEMS standards as outlined in the Enterprise-1 Project HSEMP.

7.3.6 Product Stewardship, Conservation and Waste Management

All resources used, or consumed as a result of the Project operations are identified and documented. These include natural resources, materials and energy.

Systems are in place to ensure that the consumption of these resources is carried out both efficiently and in a manner that conserves such resources. Waste streams from the Project operations will be regularly evaluated with a view to maximising the use of recycling.

Waste management procedures will be used to control the disposal of hazardous waste. Only EPA licensed disposal contractors will be used for such disposal. Monitoring is undertaken to ensure that material usage and discharges comply with legislation and are minimised to ALARP.

7.3.7 Management of Change

Changes to equipment, systems, personnel, and documentation will be controlled by the Management of Change Directive to ensure that any factors that may have an impact on HSE issues are fully considered. A significant deviation from the outline drilling program would trigger a drilling management of change procedure actioned by the Senior Drilling Engineer and approved by the Project Manager. A change review team will be appointed for each change.

The process requires that a summary of each change is recorded so that a check may be periodically made on the cumulative effect of a number of small changes.

7.3.8 Monitoring and Record Keeping

A monitoring program will be implemented during the Project. Records of all monitoring will be generated and held for the duration of the Project. Responsibility for these inspections will be determined by the Project Manager and will include the Beach Site Representative and contractors.

Records will be established and maintained in accordance with the requirements of the Beach Energy HSEMS.

7.4 Emergency Response Management

The Beach ERIP describes the actions to be taken in the event of all identified environmental incidents and emergencies occurring at the facility and describes the interface with the Ensign Emergency Response Plan. The Beach ERIP and the Ensign ERP will operate in parallel during the Project.

The Project specific ERIP includes procedures for multiple emergency scenarios and response including:

- Well control incident.
- Bulk fuel / hazardous materials incident.
- Fire and/or explosion (rig/warehouse/camp/facility).
- Environmental pollution incident.
- Natural disaster incident (i.e., flooding).

- Hazardous materials and handling.
- Fuel/oil spills.
- Bushfire.

The Beach ERIP includes input from a broad range of sources including Ensign drilling personnel, and health and safety representatives, and contains communication channels for emergency services. All drilling personnel will receive awareness training of the Beach ERIP and details of the ERIP will be made available to emergency services and relevant municipal authorities.

Reporting relationships for command, control and communications are specified in the Beach ERIP together with interfaces to emergency services specialist response groups, statutory authorities and other external bodies. The roles and responsibilities are communicated to all personnel involved in an emergency, including the response teams, support teams, visitors, contractors and employees.

The Beach ERIP defines the communication requirements to notify both the company and external bodies of the incident so as to obtain assistance where needed and to fulfil reporting obligations.

Systems will be established to provide effective management in the event of a discharge or ignition of hydrocarbons to the environment. Such processes will include initial response, reporting requirements, and the involvement of third parties with skills and equipment necessary to respond effectively to emergency incidents.

The Beach ERIP will be reviewed and updated, as necessary, to incorporate lessons learned from training, exercises and incidents, both internally and externally. The ERIP will be updated as required following a major accident, near miss or an exercise. Review and testing of the ERIP will involve:

- Conducting an emergency response drill at all locations.
- Testing of associated procedures and system when they are first devised or significantly changed, and on a regular basis not exceeding 6 months.
- Conducting weekly site drills.
- Undertaking a review of all tests to identify opportunities for improvement and amendment of the ERIP.

7.4.1 Incident Management

The requirements of incident analysis and investigations are detailed in the Incident Management Directive which describes the steps to be taken after an incident has occurred or a hazard has been identified. The purpose of an analysis is to determine the causes of incidents (including near misses) or to correctly determine hazards that have not been adequately identified, assessed or controlled. Having verified the underlying causes, an analysis must then recommend how to prevent a recurrence. Incidents will be reported in accordance with the requirements in Section 7.3.4.

8 References

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9 Document Information and History

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B	11/2/2020	Erias provision to Beach	SB	CK	
A	13/12/2019	Erias Internal review		SB	GT

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