

# Beharra Springs Flowline and Workers Accommodation Camp

## Native Vegetation Clearing Permit

### Supporting Document

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**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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**Acronyms and Abbreviations**

<b>Acronym / Abbreviation</b>	<b>Definition</b>
BC Act	<i>Biodiversity Conservation Act 2016</i>
Beach	Beach Energy Resources (Perth Basin) Pty Ltd
BSD-2	Beharra Springs Deep-2
BoM	Bureau of Meteorology
DMIRS	Department of Mines, Industry Regulations and Safety
EP320	Exploration Permit 320
EP Act	<i>Environmental Protection Act 1986</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EP320	Exploration Permit EP320
(the) Facility	Beharra Springs Gas Facility
ha	hectares
IBRA	Interim Biogeographic Regionalisation for Australia
L11	Production Licence L11
IBRA	Interim Biogeographic Regionalisation for Australia
km	kilometre
NVCP	Native Vegetation Clearing Permit
P1, P2, P3, P4	Priority 1, Priority 2, Priority 3, Priority 4
PEC	Priority Ecological Community
PL18	Pipeline License 18
SRE	Short Range Endemic
TEC	Threatened Ecological Community
WA	Western Australia
WAC	Workers Accommodation Camp
WoNS	Weeds of National Significance

## 1 Introduction

Beach Energy Resources (Perth Basin) Pty Ltd (Beach) is part owner of the Beharra Springs Gas Facility (the Facility). The Facility incorporates the gas field production wells and flowlines, gas production plant, sales gas pipeline and associated infrastructure.

The Facility is located approximately 20 kilometres (km) south of Dongara and 350 km north of Perth, Western Australia (WA). The Facility is contained within Production Licence L11 and Exploration Permit EP320 and Pipeline Licence PL18 (Figure 1-1).

### 1.1 Proposed Location and Area

As part of the development of the Facility, Beach is intending to install a workers accommodation camp and a ~ 2 km flowline between the BSGF to Beharra Springs Deep 2 (BSD-2) within production licence L11 area.

Although the flowline design is finalised, Beach Energy has not yet confirmed which side of the access track the flowline will be installed. As such, Beach Energy has defined a Development Envelope for the purposes of this clearing application (Figure 1-1). The Development Envelope covers the footprint of the Workers Accommodation Camp (WAC), and an area either side of the access track to support the BSD-2 flowline installation (Figure 1-1). The actual clearing footprint will require disturbance of up to 2.47 hectares (ha) of native vegetation comprising:

- 1.47 ha for the BSD-2 flowline
- 1 ha for the WAC.

Once cleared, the area will remain permanently cleared to enable safe access and maintenance of the infrastructure.

### 1.2 Purpose

The purpose of this document is to provide the necessary information and justification, as prescribed within the Environmental Protection (Clearing of Native Vegetation) Regulations 2004, to seek approval under Part V of the *Environmental Protection Act 1986* (EP Act).

This document has been prepared to support a Native Vegetation Clearing Permit (NVCP) application, to be submitted to the Department of Mines, Industry Regulation and Safety (DMIRS) for assessment.

### 1.3 Site Selection

The original build footprint of the WAC was proposed to be 2ha in size to ensure maximum operation flexibility. However, given the environmental sensitivities recognised by Beach at this particular site, namely Carnaby Black Cockatoo (CBC) foraging habitat, Beach initiated a comprehensive camp re-design process that significantly reduced the development footprint to less than 1 ha.

The BSD-2 flowline alignment was selected to minimise direct impacts to native vegetation. As a normal right of way (ROW) for flowline installation can comprise 20-50m corridor, the alignment was selected to utilise an existing access track to form part of the ROW. This resulted in clearing associated with the Construction ROW being reduced to an 18m corridor of vegetation. Further review of options was completed to understand if this area could be further minimised, however given the sandy nature of soil, which will likely require a wider than average flowline trench dimension, any further reduction was seen to likely directly impact the safety and feasibility of proposed construction works.



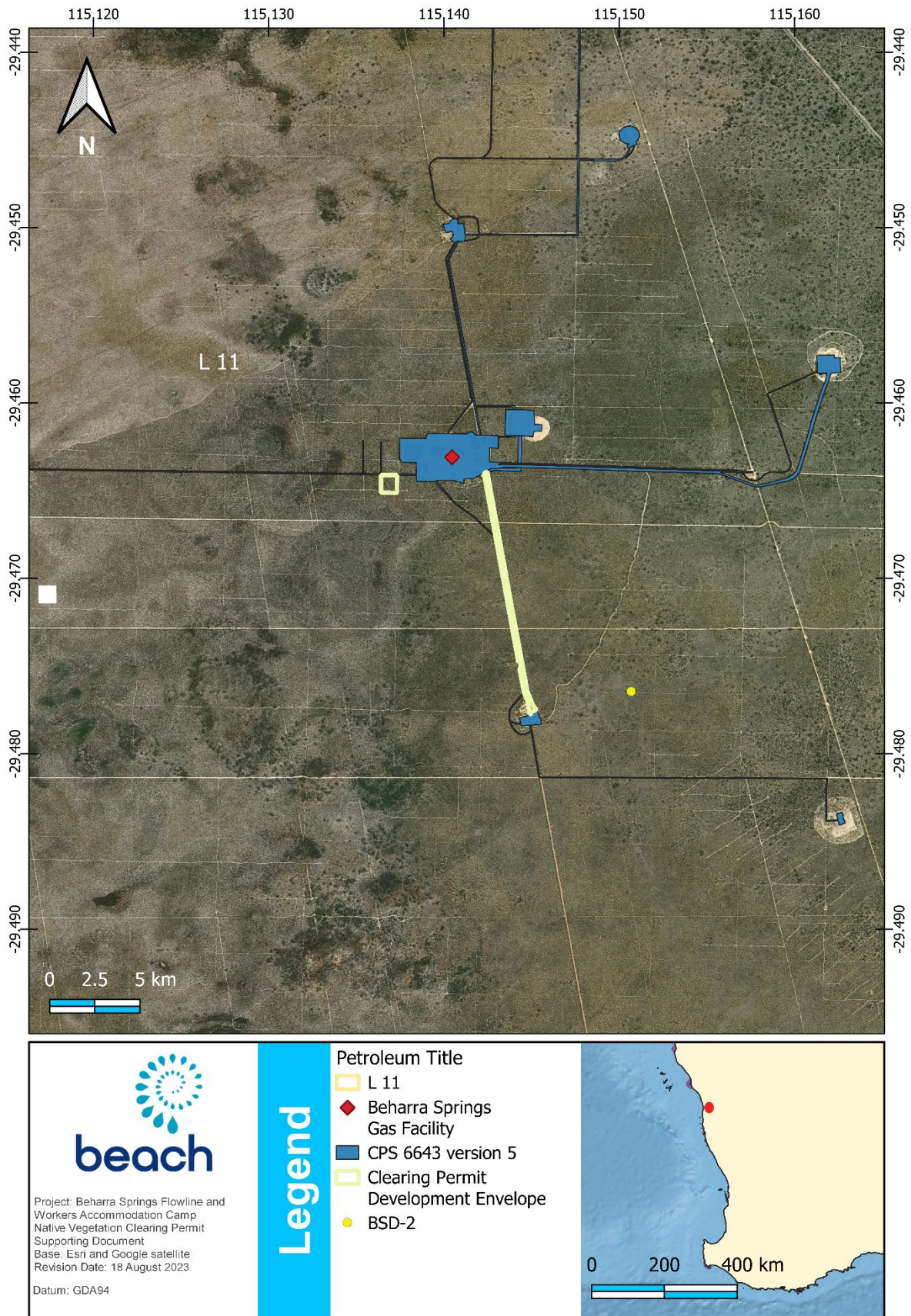


Figure 1-1: Location of the Beharra Springs Gas

## **2 Site Overview**

### **2.1 Climate**

The regional climate is classified as subtropical with hot, dry summers and mild winters, where the rainfall is winter dominant, marked as wet winters and dry summers (BOM, 2016). Based on the nearest Bureau of Meteorology (BOM) weather station (Morowa, located approximately 78 km north-east of the Development Envelope), the mean monthly minimum temperature recorded for region ranges from 6.3°C in July to 19.5°C in February and the mean monthly maximum temperature ranges from 18.2°C in July to 36.7°C in February (BoM, 2023). The average annual rainfall is 334.8 mm with the majority of rainfall occurring during the winter months (BoM, 2023). A strong south-east morning breeze is a part of summer weather conditions. The winds during the winter months are more variable and influenced by the cold fronts coming in from the Indian Ocean.

### **2.2 Geology and Landforms**

The Development Envelope is located within the Lesueur Sandplain subregion of the Geraldton Sandplains Bioregion (Department of the Environment, 2012). The Geraldton Sandplains Bioregion is composed mainly of proteaceous scrub-heaths, rich in endemics, on the sandy earths of an extensive, undulating, lateritic sandplain mantling Permian to Cretaceous strata (Department of the Environment, 2012; Department of Conservation and Land Management, 2002).

The Geraldton Sandplains are characterised by a series of old dunes which run parallel to the coast. The younger Quindalup dunes occur near the contemporary coastline, with the Spearwood dunes occurring further inland. The soils are typically sandy with some areas of exposed limestone, and a series of wetlands occurs along the plains. In the east lateritic rises occur.

Generally, soils within the Perth Basin are light and sandy and well drained. Beard (1967) described the soils as "calcareous sand soils of minimal development". The soils consist of calcareous and siliceous sand underlain by aeolianite, which is often exposed. The Development Envelope is located within a singular soil-landscape system; Beharra System (221Be) – level to very gently inclined sandplain with areas of dunes, small playas, and swampy depressions. Yellow and pale deep sands, some sandy duplexes, loams, and wet soils.

### **2.3 Surface Water and Wetlands**

The closest waterbodies to the Development Envelope are two small non-perennial watercourses; one located approximately 3.8 km to the east which is not connected to any other watercourses, and the second approximately 7.7 km south-east of the Development Envelope, which flows into the Arrowsmith River (Landgate, 2015).

There are no listed wetlands in or near the Development Envelope.



### 3 Environmental Impact Assessment

#### 3.1 Flora and Vegetation

##### 3.1.1 Vegetation Type

The proposed Development Envelope is located within a singular vegetation association; Eridoon\_378; which is defined as scrub-heath, mixed heath with scattered tall *Acacia* spp., Proteaceae and Myrtaceae (Beard, 1967). The extent of the pre-European vegetation remaining is presented in Table 3-1.

Table 3-1 Vegetation Association and Extent

Vegetation System Association	Description	IBRA Region Extent of Vegetation System	Pre-European Extent of Vegetation Association	Current Extent of Vegetation Association	Pre-European Extent Remaining
Eridoon_378	Mixed heath with scattered tall shrubs <i>Acacia</i> spp., Proteaceae and Myrtaceae.	3,142,149.97 ha	93,523.98 ha	61,031.79 ha	65.04%

A review of all desktop, reconnaissance level and targeted flora surveys across the Development Envelope (and within close proximity of the area) did not identify any conservation-significant ecological communities to be present based on assessment of available pre-European vegetation, hydrology, soils, landform and geology information. These surveys indicate that the vegetation communities are comprised of *Banksia attenuata* over sedgeland / heathland described as:

- **BAEMMS** - Open mid shrubland of *Banksia attenuata*, with or without isolated emergent *Acacia* spp., *Eucalyptus todtiana* or *Xylomelum angustifolium*, over *Ecdeiocolea monostachya*, *Mesomelaena pseudostygia* and *Lepidobolus* sp. sparse sedgeland (Strategen-JBS&G, 2022a)
- **EmSL** – Isolated low shrubs of *Banksia attenuata*, *Banksia shuttleworthiana* and *Calothamnus glaber*, over *Ecdeiocolea monostachya*, *Mesomelaena pseudostygia* and *Lepidobolus* sp. Sedgeland (Strategen-JBS&G, 2022a)
- **W1** - Low open woodland of *Banksia attenuata*, *Banksia hookeriana* and *Banksia menziesii* over heath of *Calothamnus blepharosperrmus*, *Eremaea beaufortoides*, *Beaufortia elegans* and *Conostylis neocymosa* over sedgeland of *Chordifex sinuosus* on flats with yellow-white sand (Mattiske, 2016)
- **No acronym** - habitat across the majority of the survey area consisted of *Banksia* woodlands over Proteaceous heath within light brown to grey sands with occasional lateritic gravels on undulating plains (Anders Environmental Consulting, 2023)

##### 3.1.2 Vegetation Condition

Vegetation surrounding the Beharra Springs Gas facility is generally understood to be in pristine condition. JBS&G (2022a) determined that vegetation condition ranged from Degraded to Pristine throughout the area however the vast majority of the Survey Area was found to be in Pristine condition, based on structural integrity and floristic composition observed at the time of survey. Areas comprising degraded and lower condition were associated with access tracks or being adjacent to infrastructure contributing to light weed burden contributing to decreased condition score.

Although the area associated with the Workers Accommodation Camp was not assessed for vegetation condition it is expected the vegetation is in pristine condition based upon observations during the targeted survey (Anders Environmental Consulting, 2023).

In total, 97% of the native vegetation to be cleared is in pristine condition.

### 3.1.3 Conservation Significant Flora

JBS&G completed a desktop assessment which indicated that a large number of conservation significant species may be present within the Development Envelope (Appendix A). As such Beach Energy commissioned a number of targeted field surveys to identify if conservation significant species were present.

JBS&G completed a targeted flora search of the area associated with the BSD-2 flowline between 3<sup>rd</sup> – 16<sup>th</sup> November 2022 (Appendix B) and Anders Environmental completed a targeted flora search of the area associated with the WAC accommodation camp between 20<sup>th</sup> and 21<sup>st</sup> October 2022 (Appendix C).

Two conservation significant species were identified as being present within the Development Envelope and as such the remainder of the assessment will focus on these two species.

#### **Schoenus griffinianus**

*Schoenus griffinianus* (P4) is a small, tufted perennial, grass-like or herb (sedge), to 0.1 m high. Fl. Sep to Oct (JBS&G, 2022). This taxon is known from 50 records (Atlas of Living Australia, 2023) but is widespread across four Interim Biogeographic Regionalisation for Australia (IBRA) regions including Avon Wheatbelt, Geraldton Sandplains, Mallee and Swan Coastal Plain (Western Australian Herbarium, 1998-).

In addition to the known records, data sharing with other operators in the Midwest identified that more than 800 *Schoenus griffinianus* individuals have been previously recorded within the area surrounding the Beharra Springs Gas Facility (Tronox, Iluka and MEPAU, 2019). In addition to the one record of the species identified in Spring 2022 (Strategen-JBS&G, 2022b) within or in close proximity to the Development Envelope, Beach Energy are aware that a total of 1388 individuals have been previously recorded.

Based upon the clearing footprint for the Development Envelope, 5 individuals will be impacted. As such, this activity will result in disturbance of approximately < 1 % of the known records. This project is not considered to result in a significant impact to the species as:

- although relatively unknown, the taxon has been recorded across a broader number of IBRA regions suggesting any local impacts would not result in population level impacts
- surveys indicate the species has a larger localised presence than previously known (Figure 3-1).

#### **Banksia elegans**

*Banksia elegans* (P4) is a shrub (with fire-tolerant rootstock, often suckering), 1-4 m high. Fl. yellow/green-yellow, Oct to Nov. Yellow, white or red sand. Sandplains, low consolidated dunes., tufted perennial, grass-like or herb (sedge), to 0.1 m high with a flowering period of September to October (JBS&G, 2022). This taxon is known from 100 records (Atlas of Living Australia, 2023a) and is present across two IBRA regions including Avon Wheatbelt and Geraldton Sandplains, Mallee (Western Australian Herbarium, 1998-).

In addition to the known records, data sharing with other operators in the Midwest identified that more than 2000 *Banksia elegans* individuals have been previously recorded within the area surrounding the Beharra Springs Gas Facility (Tronox, Iluka and MEPAU, 2019). Beach Energy are aware that a total of 2181 individuals have been previously recorded.

Based upon the clearing footprint for the Development Envelope, 10 individuals will be impacted. As such, this activity will result in disturbance of approximately < 1% of the known records. This project is not considered to result in a significant impact to the species as:

- although relatively unknown, the taxon has been recorded across a broader number of IBRA regions suggesting any local impacts would not result in population level impacts
- surveys indicate the species has a larger localised presence than previously known (Figure 3-1).



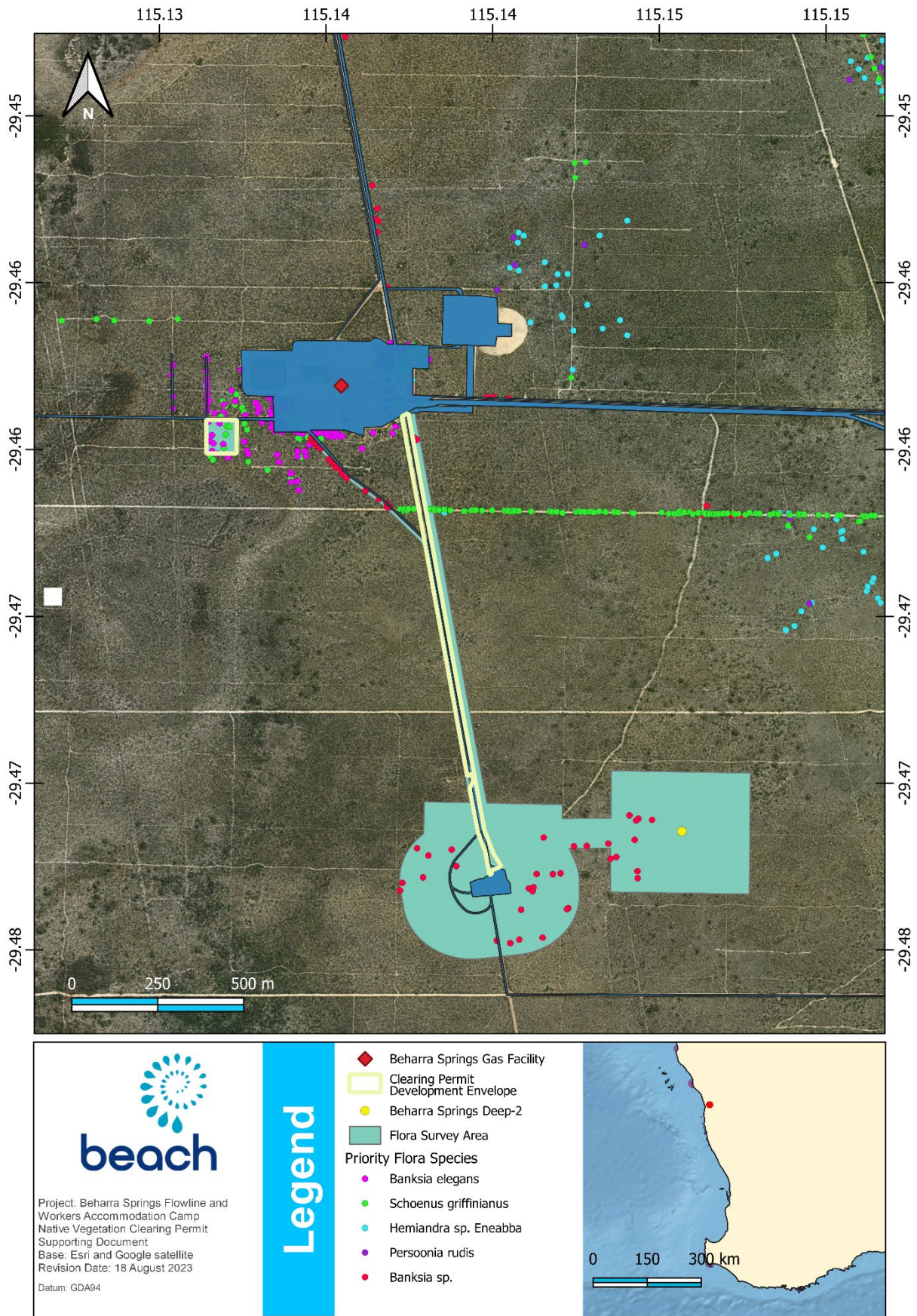


Figure 3-1: Distribution of Priority listed flora locations within and surrounding the Development Envelope

### 3.1.4 Introduced Flora

No Weeds of National Significance (WoNS) or Declared Pest plant species were recorded during survey (Strategen-JBS&G, 2022a).

### 3.1.5 Fauna and Habitat

JBS&G (2022a) identified a total of six fauna habitat units (excluding cleared areas) throughout a broader reconnaissance level survey of the Beharra Springs Gas Facility. Specifically, the Development Envelope is mapped as Kwongan habitat described as:

- low scrub or heath of Banksia and Myrtaceous low shrubs, with sedges on pale undulating sandplain. Areas of open sand and diverse low or mid-height flowering Proteaceous and Myrtaceous shrubs. Suitable habitat for nectivorous birds (e.g., honeyeaters), Honey Possum, reptiles and predating raptors. Banksia vegetation present may provide forage for Carnaby's Cockatoo.

The basic fauna survey also identified that the Development Envelope does not have high potential to support Short Range Endemic (SRE) species. No invertebrates considered likely to represent SRE taxa were observed during the survey, despite the survey being undertaken within the optimal season and in seasonally wet conditions. There remains potential for SRE species to occur, but the likelihood is considered to be low based on the absence of likely suitable habitat.

### 3.1.6 Fauna Survey

JBS&G (2022a) described that although no significant trees likely to support Black Cockatoos nesting or roosting activity were present, Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) [EN; EN] was observed as part of a broader vegetation survey across the L11, and much of the native vegetation present is suitable for Black Cockatoo foraging habitat. As such, Beach Energy Engaged Bamford Consulting Ecologists to assess the foraging habitat quality of the Development Envelope.

Bamford Consulting Ecologists (2022) assessed the quality of habitat and ranked the value quality out of 10 having regard to site vegetation characteristics, context and species density in accordance with (DCEEW 2022). Foraging values ranged from negligible foraging value (1) to moderate foraging value (6) (Appendix D, Figure 3-2).

The clearing footprint represents a very small area within 15 km of the total areas surveyed (total of 35,660 ha surveyed) that provides extensive foraging habitat of similar and higher quality value (Bamford Consulting Ecologists, 2022).



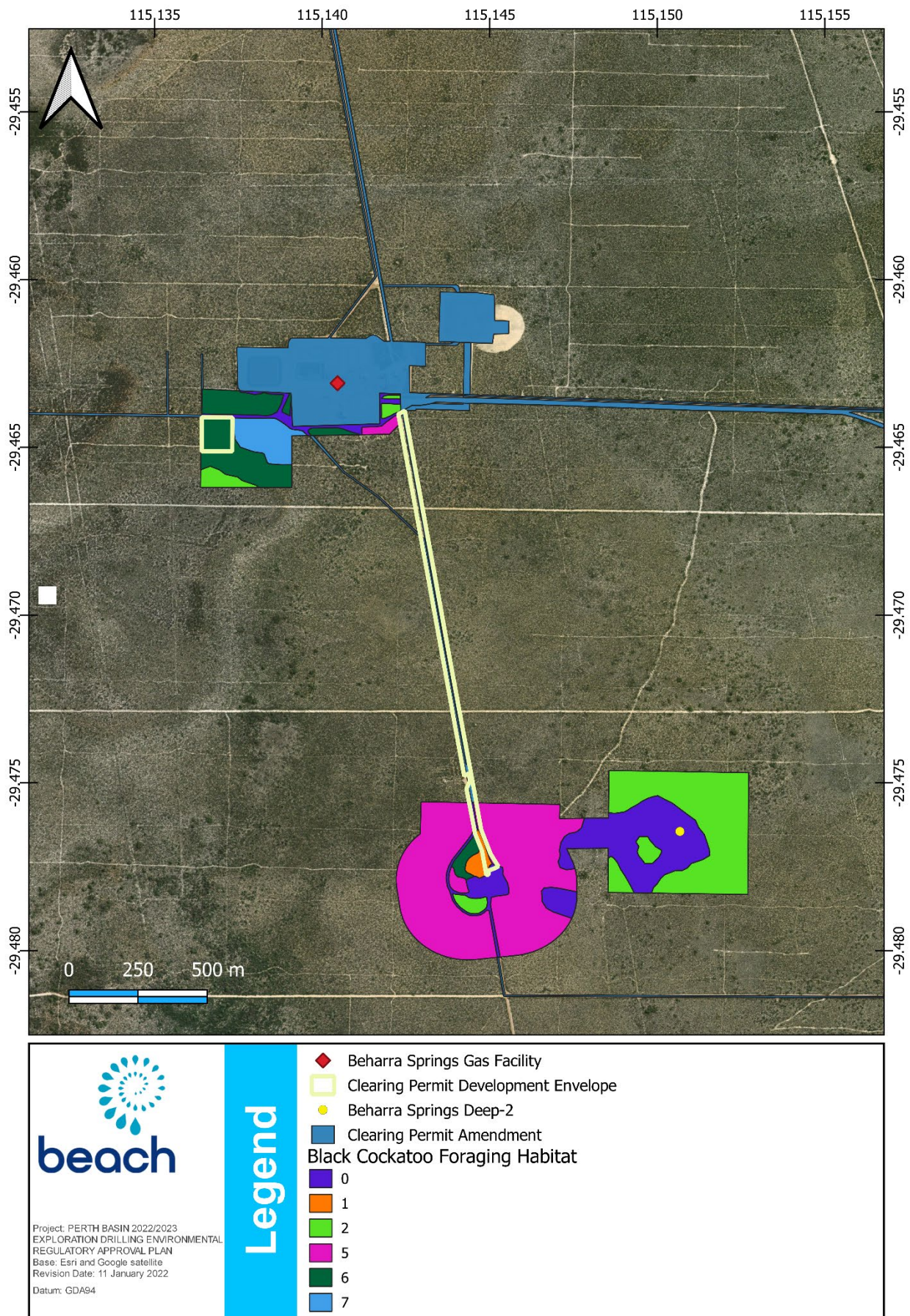


Figure 3-2: Carnaby's Black Cockatoo foraging habitat within the Development Envelope

## 4 Environmental Management Measures and Rehabilitation

Environmental management measures that will be implemented to avoid, minimise and reduce the impacts associated with clearing up to 2.47 ha include:

- ground disturbance permit procedures will be implemented prior to clearing
- areas designated for clearing will be surveyed and boundaries clearly demarcated. Personnel will be familiar with areas of demarcation prior to commencement of clearing to ensure no clearing is undertaken beyond the clearing zones
- existing access tracks or other cleared areas will be utilised to prevent unnecessary clearing
- earth-moving equipment will be inspected for the presence of soils and vegetation matter prior to mobilisation to the of clearing site
- clearing will be undertaken progressively so only those areas absolutely required for activities are disturbed
- vehicles and equipment will adhere to speed limits and avoid driving over, or parking on, vegetation and/or tree roots that are not designated for clearing
- effective waste containment and disposal procedures will be implemented to prevent attraction of feral predators, such as cats and foxes
- personnel will be inducted and educated on environmental requirements of the project.

No rehabilitation is planned under this application.

### 4.1 Dieback and Weeds

When undertaking any clearing or other activity authorised under such Permit, Beach and their contractors will ensure the following steps are implemented to minimise the risk of the introduction and spread of weeds and dieback:

- clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared
- ensure that soil, mulch, fill and/or other material brought into the area to be cleared are verified low risk of dieback and weed
- restrict the movement of vehicles and machinery to the limits of the areas to be cleared.



## 5 Assessment Against the 10 Clearing Principles

Clearing Principle	Assessment
(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.	<p>The area to be cleared within the Development Envelope is small (2.47 ha). Given various activities Beach Energy has undertaken over the past 5-10 years, a large number of botanical surveys are available for areas adjacent to the Development Envelope. In addition to these, Beach Energy completed a targeted field surveys that indicate that the vegetation proposed to be cleared, and adjacent vegetation is in pristine condition, based on structural integrity and floristic composition. However, small areas of the vegetation were in a degraded condition associated with existing access tracks or other Bahara Springs Gas Facility infrastructure.</p> <p>Desktop investigations indicated one conservation significant flora species, <i>Paracaleana dixonii</i> (Sandplain Duck Orchid), listed as Vulnerable (State) and Endangered (Commonwealth) has the potential to be present. This species is relatively common within appropriate habitat types throughout the region. However, no individuals of <i>Paracaleana dixonii</i> were recorded during the reconnaissance field survey or targeted field survey completed during the optimal flowering period (October to December or January) (Western Australian Herbarium, 1998-).</p> <p>Three listed Priority species were identified during the targeted survey, with two Priority flora species; <i>Schoenus griffinianus</i> (P4) and <i>Banksia elegans</i> (P4) that will be disturbed due to clearing associated with this application. Impacts to this species were evaluated in Section 3.1.1. Disturbance to the listed priority species is not considered to be significant as review of biological data indicated that the species has a large, localised presence as well as a wide-ranging distribution such that any localised impacts would not impact on broader populations.</p> <p>The vegetation surveyed within the Development Envelope consists of vegetation types BaEmMS, EmSL (Strategen-JBS&amp;G, 2022a) and W1 (Mattiske, 2016), with the majority of the Development Envelope mapped as vegetation, dominated by open mid-shrubland of <i>Banksia attenuata</i> over sedges. This can also be characterised as Kwongan scrub or heath, which is a prominent vegetation type within the region. The vegetation present is not considered significant vegetation and are both locally and regionally well represented. Additionally, no Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) were identified or known to occur.</p> <p>The Development Envelope is not considered to contain a high level of biodiversity as:</p> <ul style="list-style-type: none"> <li>no threatened flora species will be impacted</li> <li>the vegetation types are regionally well represented around the Beharra Springs Area</li> <li>no TECs will be impacted</li> <li>although two priority flora species will be impacted, both species are well represented locally and widespread across bioregions, with impacts comprising a low percentage of known occurrences resulting in localised impacts only not expected to affect broader populations.</li> </ul> <p>Based on the above, the proposed clearing is not likely to be at variance to this Principle.</p>
(b) Native vegetation should not be	<p>There are no significant trees likely to support nesting or roosting activity of Carnaby's Black Cockatoos within the Development Envelope. Native Vegetation ranges from Moderate foraging habitat quality to Negligible foraging habitat (Bamford Consulting</p>



Clearing Principle	Assessment
cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.	<p>Ecologists, 2022) (Figure 3-2) however, 97% of vegetation planned to be cleared is considered of high value foraging habitat [Based upon Table 3 from the DCCEEW Referral Guidelines].</p> <p>The foraging habitat present within the Development Envelope comprises a small percentage of the surrounding vegetation. Specifically, clearing comprises 0.000012% of remnant native vegetation within 15km. As Carnaby's Black Cockatoos are mobile species, clearing for the purpose of this activity will not result in any fragmentation impacts, and due to the lack of suitable nesting or roosting habitat would not be expected to result in significant impacts to these species.</p> <p>No other species were identified by the surveys to indicate that the vegetation provides significant habitat to any other species of indigenous or conservation significant fauna.</p> <p>Based on the above, the proposed clearing is not likely to be at variance to this Principle.</p>
(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.	<p>Desktop investigations indicated that <i>Paracaleana dixonii</i> listed as Vulnerable and Endangered under the BC Act and the EPBC Act (respectively) had the potential to be present. However, targeted field surveys undertaken across the whole of the Development Envelope did not record this species and as surveys were completed during the flowering period for this species, it is considered unlikely that they would be present, or impacted by this application (Strategen-JBS&amp;G, 2022a; Strategen-JBS&amp;G, 2022b).</p> <p>Based on the above, the proposed clearing is not likely to be at variance to this Principle.</p>
(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.	<p>No TECs or PECs exist within the Development Envelope. The potential of TECs to occur has been assessed as very unlikely to unlikely (Strategen-JBS&amp;G, 2022a).</p> <p>Based on the above, the proposed clearing is not likely to be at variance to this Principle.</p>
(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.	<p>The Development Envelope falls within the Geraldton Sandplains IBRA bioregion, which retains more than 44% of its pre-European vegetation extent (Government of Western Australia, 2019). This also falls within the Eridoon_378 vegetation association which has 65% remaining in the bioregion (Government of Western Australia, 2019). The clearing associated with the proposed appraisal well program is not in an ecological community with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).</p> <p>The clearing disturbance is small (2.47 ha in total) and represents 0.009 % of the current extent remaining. The vegetation association Eridoon_378 is well represented in the region and the vegetation within the Development Envelope is not considered to be significant as a remnant of native vegetation that has been extensively cleared.</p>

Clearing Principle	Assessment
(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.	<p>A review of all desktop, reconnaissance level and targeted flora surveys across the Development Envelope indicate that the vegetation communities are comprised of <i>Banksia attenuata</i> over sedgeland / heathland. These are considered to be consistent with the Eridoon_378 and are known to be well represented locally.</p> <p>Based on the above, the proposed clearing is not likely to be at variance to this Principle.</p>
(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.	<p>The Development Envelope is split into two purposes:</p> <ol style="list-style-type: none"> <li>1. Installation of an underground flowline;</li> <li>2. Construction of a permanent accommodation camp</li> </ol> <p>The accommodation camp will remain permanently cleared and comprise a hardstand (compacted gravel / limestone) established as part of the civil works campaign, therefore providing a stable landform structure highly unlikely to result in appreciable land degradation.</p> <p>Once the underground flowline is installed the area will remain cleared to support future infrastructure maintenance.</p> <p>The proposed clearing is not expected to increase wind, water or soil erosion, salinity, nutrient export, acidification, waterlogging or flooding that could affect the present or future use of the land.</p> <p>Based on the above, the proposed clearing is not likely to be at variance to this Principle.</p>
(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.	<p>The Yardanogo Nature Reserve (Reserve Number WA 36203) is the closest conservation area located approximately 5 km to the north-west of the closest point of the Development Envelope. The proposed clearing is not located near an Environmentally Sensitive Area, Bush Forever Area or Recommended Red Book Conservation Area.</p> <p>Given the distance to any conservation area, the proposed clearing is not likely to be at variance to this Principle.</p>
(i) Native vegetation	<p>The closest river to the Development Envelope is the Arrowsmith River. The poorly defined drainage lines of the Arrowsmith River flow in a westerly direction to the south</p>

Clearing Principle	Assessment
<p>should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.</p>	<p>of L11 prior to turning north-west to enter the terminal swamps and lakes of the Arrowsmith Lake area.</p> <p>Given the distance to this watercourse and small clearing footprint within the defined Development Envelope the proposed clearing is not likely to cause deterioration in the quality of surface water. Similarly, the proposed clearing is not likely to have a significant impact on the quality of groundwater and/or lead to a perceptible rise in the water table.</p> <p>No watercourses or wetlands are located in the proposed clearing area or Development Envelope. The proposed clearing will not:</p> <ul style="list-style-type: none"> <li>• lead to adverse environmental impacts through sedimentation of waterbodies</li> <li>• contribute to increased nutrient levels in the catchment</li> <li>• have the potential for low pH waters and/or acid sulphate soils to form</li> <li>• contribute to increased salinity in catchments already affected by or likely to be affected by salinity</li> <li>• lead to changes in water regimes of, or result in breaches of environmental water provisions for groundwater-dependent ecosystems on or offsite and subsequent degradation of the biological communities associated with these systems.</li> </ul> <p>Based on the above, the proposed clearing is not likely to be at variance to this Principle.</p>
<p>(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.</p>	<p>There are no watercourses or drainage lines in the vicinity of the Development Envelope. The activity would not result in any changes to flooding of the area.</p> <p>The small area of clearing and associated footprint will be managed to prevent uncontrolled loss of water to the surrounding environment utilising the porous and permeable soil-landscape system which allows rainwater to infiltrate to the water table rather than running off the land surface.</p> <p>Based on the above, the proposed clearing is not likely to be at variance to this Principle.</p>

## 6 Conclusion

This document outlines Beach's clearing permit application in accordance with the EP Act to clear up to 2.47 ha of native vegetation within the defined Development Envelope to allow construction and operation of the Beharra Springs WAC and BSD-2 flowline. The following conclusions associated with the permit application are listed below:

- flora taxa within the Development Envelope, including the two Priority species recorded, are known to occur at other locations and are well represented outside of the proposed area
- there are no TECs or listed Threatened flora within the proposed clearing footprint
- impacts to fauna from the proposed clearing are expected to be minimal as the clearing permit area is comprised of a small area which is well represented locally and regionally and not considered to be a significant occurrence
- the proposed clearing is not likely to be at significant variance to any of the clearing principles
- Beach Energy will engage with DMIRS during the assessment process to verify offset requirements to support this application
- weed and dieback hygiene protocols will be implemented during vegetation clearing and subsequent earthworks to minimise the risk of introduction or spread
- disturbance to surrounding soil and other vegetation shall be kept to the minimum amount required
- rehabilitation objectives and criteria have been defined and will be implemented.

## 7 References

- Anders Environmental Consulting. (2023). *Beharra Springs Operations Camp Targeted Flora Survey*.
- Atlas of Living Australia . (2023a). *Banksia elegans Meisn.*
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