

# **Onslow Camp Dunes Project**

Clearing Permit Supporting Documentation

M08/488, M08/496, G08/80

Report Reference: ENV-TS-RP-0339-Rev 1





# **Revision History**

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# **ABBREVIATIONS**

AIP	Ashburton Infrastructure Project
ANSIA	Ashbutron North Strategic Industrial Area
ВоМ	Bureau of Meteorology
СЕМР	Construction Environmental Management Plan
DBCA	Western Australian Department of Biodiversity, Conservation and Attractions
DAWE	Australian Department of Agriculture, Water and the Environment
DMIRS	Western Australian Department of Mines, Industry Regulation and Safety
DWER	Western Australian Department of Water and Environmental Regulation
EIA	Environmental Impact Assessment
EMS	Environmental Management System
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EP Act	Environmental Protection Act 1986
EPA	Western Australian Environmental Protection Authority
ESA	Environmentally Sensitive Area
GIS	Geographic Information Systems
GWL	Groundwater Licence
ha	Hectare
IBRA	Interim Biogeographic Regionalisation for Australia
km	Kilometre
KIP	Kumina Iron Pty Ltd (wholly owned subsidiary of MRL)
LNG	Liquified Natural Gas
m	Metre
МСР	Mine Closure Plan
MNES	Matters of National Environmental Significance
MRL	Mineral Resources Limited
Mtpa	Million tonnes per annum
NVCP	Native Vegetation Clearing Permit
PEC	Priority Ecological Community
Permit Area	The Onslow Camp Dune Project
RIWI Act	Rights in Water and Irrigation Act 1914
SRE	Short-range Endemic
TEC	Threatened Ecological Community



## 1. INTRODUCTION

#### 1.1 PROJECT BACKGROUND

Kumina Iron Pty Ltd (KIP), a wholly owned subsidiary of Mineral Resources Limited (MRL)(Appendix C), acquired the Yarri leases (M08/488, M08/496, G08/80, L08/127, and L08/115) in 2021 from Yarri Mining Pty Ltd (Yarri Mining). The Onslow Camp Dunes Project (the Project) is located within the Shire of Ashburton, approximately 14 km south of Onslow in Western Australia (Figure 1).

KIP intend to expand the Project for mineral production and supporting infrastucture.

The Project is a low-impact quarrying operation extracting sand from a raised sand dune crest to produce a range of sand products for various purposes including concrete manufacture, sand fill and general fill. These operations may include crushing and screening of excavated material, with water addition only for dust control. No waste products/tailings will be produced. Ancillary supporting facilities may include access roads, administration buildings, fuel storage, heavy vehicle workshops, water bores and laydown areas.

Yarri Mining previously held Clearing Permits CPS 5807/1 and 5818/1 over the Project area, both of which expired in 2018. The proposed operations require clearing of native vegetation within M08/488, M08/496, G08/80. As the previously existing Clearing Permits have expired KIP are seeking a new Clearing Permit for the same purposes (this document). The Project will required clearing activities for up to two years.

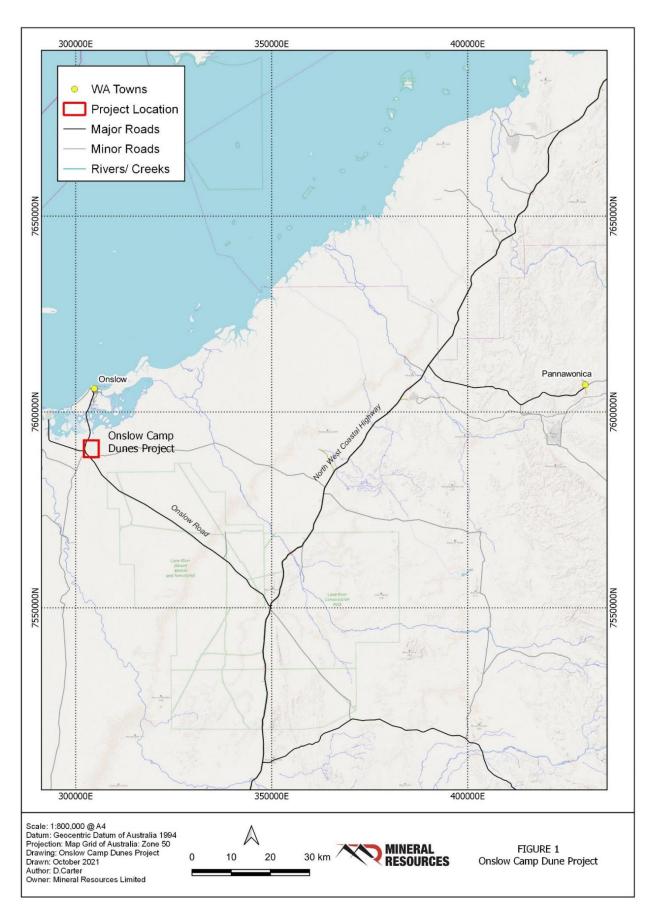
#### 1.2 PURPOSE

The purpose of this Clearing Permit application is to provide authorisation, to clear up to 106 ha within a Proposede Permit Area of 124.53 ha. Native vegetation clearing is for mineral production and supporting infrastructure for the operations.

Shapefiles for the Proposed Permit Area are provided with this application.

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**FIGURE 1: PROJECT LOCATION** 



#### 1.3 EXISTING APPROVALS

Dune sand quarrying operations and ancillary facilities within M08/488, M08/496, G08/80 are authorised under the Mining Proposals listed in Table 1. The approved Project operations include ancillary supporting facilities such as access roads, fuel farm, water bores, heave vehicle workshops, and camp facilities. These facilities are not yet constructed.

Yarri Mining submitted a Mine Closure Plan (MCP) with Mining Proposal 56674 which was approved January 2016, a subsequent MCP update was submitted December 2019 (Reg ID 84236).

A total of 109.36 ha of activities have been approved under various Mining Proposals (Table 1). Any amendments to current Mining Proposals will result in the project coverted into an amalgamated Mining Proposal in accordance with the DMIRS 2020 Mining Proposal Guidelines.

**TABLE 1: EXISTING APPROVALS FOR THE PROJECT** 

Process	Disturbance Area (ha)	Approval Authority	Relevant Legislation
Mining Proposals (approved):		DMIRS	EP Act Part V
- Reg ID 37830 – Stage 1	24.2	DMIRS	EP Act Part V
- Reg ID 40110 – amendment - site roads, laydown areas	NA	DMIRS	EP Act Part V
- Reg ID – 46179 – amendment – relocate batch plant, fuel farm	21.95	DMIRS	EP Act Part V
- Reg ID 52735 – amendment – ROM relocation, fuel farm relocation, water bores	32.38	DMIRS	EP Act Part V
- Reg ID 56674 – Stage 2	30.83	DMIRS	EP Act Part V
Groundwater Abstraction Licence - GWL179435 - 0.145 GL/annum	N/A	DWER	RIWI Act

#### 1.4 EXISTING DISTRUBANCE

Yarri Mining had previously conducted clearing to support dune sand quarrying operations (the Project) over parts of these leases with native vegetation clearing in M08/488, M08/496 and G08/80 authorised under the two clearing permits that expired in 2018 (CPS 5707/1 and CPS 5808/1). In total 18.6 ha was cleared under the expired permits (Table 2), these previously disturbed areas will be untilised where possible.

**TABLE 2: PROJECT DISTURBANCE FIGURES** 

Permit Number	Approved Disturbance (ha)	*Current Disturbance (ha)
CPS 5707-1	58.00	16.41
CPS 5708-1	37.17	2.19
Total	95.17	18.6

<sup>\*</sup> Disturbance figures sourced from DMIRS Environmental Assessment and Regulatory System (EARS2) – Figure excludes 3.58ha of rehabilitation reported



## 2. PURPOSE PERMIT AREA

#### 2.1 BOUNDARY

The boundary for all clearing activities proposed in this Clearing Permit application are within a 124.53 ha Proposed Permit Area (Figure 2, shapefiles provided), covering tenements M08/488, M08/496, and G08/80.

## 2.2 TENURE AND LAND ACCESS

The activities associated with this Clearing Permit will be undertaken on tenements M08/488, M08/496, and G08/80 as shown in Table 3 and **Figure 2.** These tenements are all held by KIP, under ownership of Mineral Resources Limited (Appendix c)

**TABLE 3: PROJECT TENEMENTS** 

Tenement	Area (Ha)	Holder	Granted	Expiry
M08/488	23.52	Kumina Iron Pty Ltd	10/07/2012	09/07/2033
M08/496	36.26	Kumina Iron Pty Ltd	18/04/2013	17/04/2034
G08/80	64.75	Kumina Iron Pty Ltd	02/07/2012	01/07/2033

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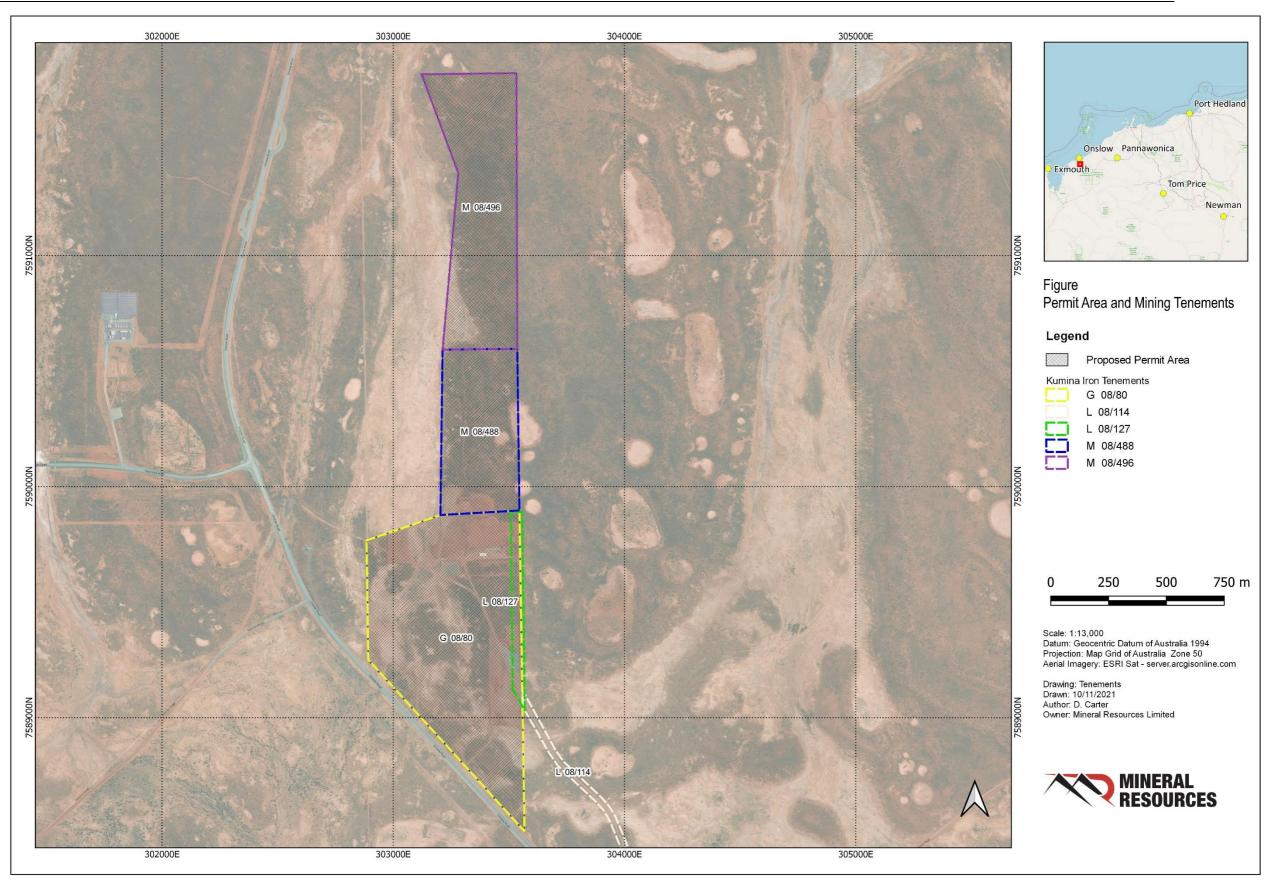


FIGURE 2: PERMIT AREA AND MINING TENEMENTS



## 3. PROPOSED ACTIVITIES

#### 3.1 DESCRIPTION OF PROPOSED ACTIVITIES

KIP propose to clear up to 106 ha of native vegation within the Proposed Permit Area (124.53 ha. Figure 2), this excludes previously cleared areas. Proposed clearing will be in accordance with Mining Proposals approved under the Project (Table 1).

#### 3.2 METHOD OF VEGETATION DISTURBANCE

Vegetation will be cleared by mechanical clearing with any topsoils and vegetation removed prior to mining whenever possible (e.g. adequate topsoil depth for selective removal). Salvaged topsoil and vegetation scrub will be stockpiled separately for later use in rehabilitation, or direct reapplication if suitable areas are available at the time.

#### 3.3 REHABILITATION AND MAINTENANCE

Rehabilitation and maintenance of disturbed areas will be conducted as outlined in the Mine Closure Plan (MCP) aligned with the approved Mining Proposals for the project (i.e. Stage 1 - Reg ID 37830, Stage 2 - Reg ID 56674).

Rehabilitation typically involves:

- Removal of equipment, buildings and infrastructure
- Check working areas for potential hydrocarbon contamination. Excavate contaminated soils, if any, and transport to hydrocarbon bioremediation area at Onslow Shire Landfill or other approved facility
- Recontouring of disturbed areas to blend in with local topography and prevent erosion
- Rip or scarify compacted surfaces
- Spread stockpiled topsoil over recontoured area to facilitate natural revegetation. Some specific activities for various disturbed areas as outlined in the MCP are as follows:
- Sand mining areas;
  - Batter back excavation edges and general landscaping to create natural looking contours that blend in with local topography. The final landform will be a sand mound, slightly raised above the surrounding plains with slopes rising upwards toward the tenement boundary at an angle of 30°.
  - Landscaped areas covered with topsoil to facilitate the return of native vegetation and a natural ecosystem.
  - Rip or scarify all rehabilitation areas but avoiding deep furrows that could channelize runoff.
  - Restrict vehicle access to the rehabilitated sand mining areas (e.g. rip surface, block access with bunds/boulders, logs)

## 3.4 INDICATIVE TIMELINE

Ground disturbing activities are to proposed to commence December 2021 and continue for approximately 2 years. Proposed areas disturbance is expected to remain for approximately 30 years.



#### 4. RELEVANT ENVIRONMENTAL CHARACTERISTICS

#### 4.1 CLIMATE

The Onslow Airport Bureau of Meteorology (BoM) weather station (#1507) is located approximately 13 km north of the Proposed Permit Area. The mean annual rainfall at the Onslow Airport BoM Station from 2001 to 2020 was 233 mm. The maximum monthly mean temperature (36.81°C) over this same period occurs in January, while the monthly mean minimum temperature (13.91°C) occurs in July.

The rainfall pattern is bimodal, with significant summer and winter rainfall events. The majority of rainfall occurs during the 'wet' summer season, typically January to March. Rainfall events are dominated by cyclonic activity or thunderstorms related to subtropical low pressure systems off the Pilbara coast (BoM 2021).

#### 4.2 REGIONAL SETTING

The Proposed Permit Area lies at the northern edge of the Cape Range Sub region of the Carnarvon Interim Biogeographic Regionalization of Australia ('IBRA') Zone (Figure 3). Habitats that are 20 km to the east are mapped as the Roeburne sub region of the Pilbara IBRA zone. As the Proposed Permit Area lies at the border of these two regions, its landscape and biological features are likely to consists of both IBRA zones.

#### 4.3 LAND USE

The Project is located in the Pilbara region of WA, within the Shire of Ashburton. The Project falls within the Peedamulla Pastoral Station (Figure 4), access agreement negotiations are well progressed with station owners and are progressing towards long term agreements to compensate the station owners for impacts from proposed infrastructure.

The Project also falls within the Ashburton North Strategic Industrial Area (ANSIA), an area designed for Liquefied Natural Gas (LNG) and domestic gas processing as well as related downstream processing industries.

## 4.4 GEOLOGY

## 4.4.1 Regional Geology

Exmouth Province sits for the most, over the sedimentary rocks of the Northern Carnarvon Basin. To the east of the Exmouth Gulf are the Cretaceous Windalia Radiolarite and Birdrong Sandstone of the Peedamullah Shelf, overlain by Quaternary alluvium, colluvium and aeolian sand. Along the eastern margin of the Exmouth Province are scattered outliers of the Gascoyne Complex comprising mostly of Palaeoproterozoic granitoid rocks, paragneiss and metasedimentary schist. Also present are Palaeoproterozoic conglomerates, sandstones, siltstones and mudstones of the Mount Minnie Group (SLR 2012).

To the west of Exmouth Gulf, the Tertiary limestone of the Cape Range Group is found on top of the Triassic-Jurassic sediments of the Exmouth Sub-basin. South of Exmouth Gulf, the Exmouth Province extends onto the northern end of the Southern Carnarvon Basin, which is dominated by the Merlingleigh Sub-basin which has Windalia Radiolarite and Birdrong Sandstone like the Peedamullah Basin. To the east, these are mostly overlain by Quaternary deposits. Closer to the coast, Tertiary deposits and the Cretaceous chalky deposits, clayey siltstone and greensand of the Toolonga Calcilutite/Alinga Formation are found. The Gascoyne Platform, mostly overlain by these calcareous marine deposits, is found in the south-west corner of this province (SLR 2012).

The Regional Boundary more broadly straddles the boundary of the Ashburton and Hamersley Basins of the Pilbara Craton. The Ashburton Basin predominantly comprises lithologies of the early Proterozoic (2000Ma) Wyloo Group. The Hamersley Basin is predominantly late Archaean and Lower Proterozoic



(2800-2300Ma) sedimentary rocks constituting the southern flank of the Pilbara Craton. This geology hasundergone a complex structural evolution with the dominant event, the Ophthalmia Orogeny, resulting in the development of major folds and thrusts associated with north-directed thrusting.

The Wyloo Group which forms the basement to the local iron ore deposits unconformably overlies the Hamersley Group. Much of the aeolian dune sands and fluvial deposits within the nearby Ashburton River contain evidence of these various geological units in the form of the aggregates as well as the sand resources (SLR 2012).

## 4.4.2 Local Geology

The local geology of the Proposed Permit Area was assessed using the Geological Survey of Western Australia's 1:500,000 interpreted bedrock geology spatial dataset (GSWA 2009), followed by a geological site investigation by SLR Consulting in October 2012. The Proposed Permit Area is part of the Winning Group, described by GSWA (2009) as undivided: shale, siltstone, marl, and basal sandstone; commonly glauconitic.

The Proposed Permit Area consists of red Quaternary aeolian dunes, with heights above the surrounding lands ranging between 10 m and 22 m. The dunes appear to trend approximately north-south and frequently become reticulate. Swales are moderately narrow and sometimes display minor areas of clay pans and sump depressions. Typically, crests are hummocky and uneven with gently to moderately inclined slopes, steepest on western sides due to the predominant wind direction.



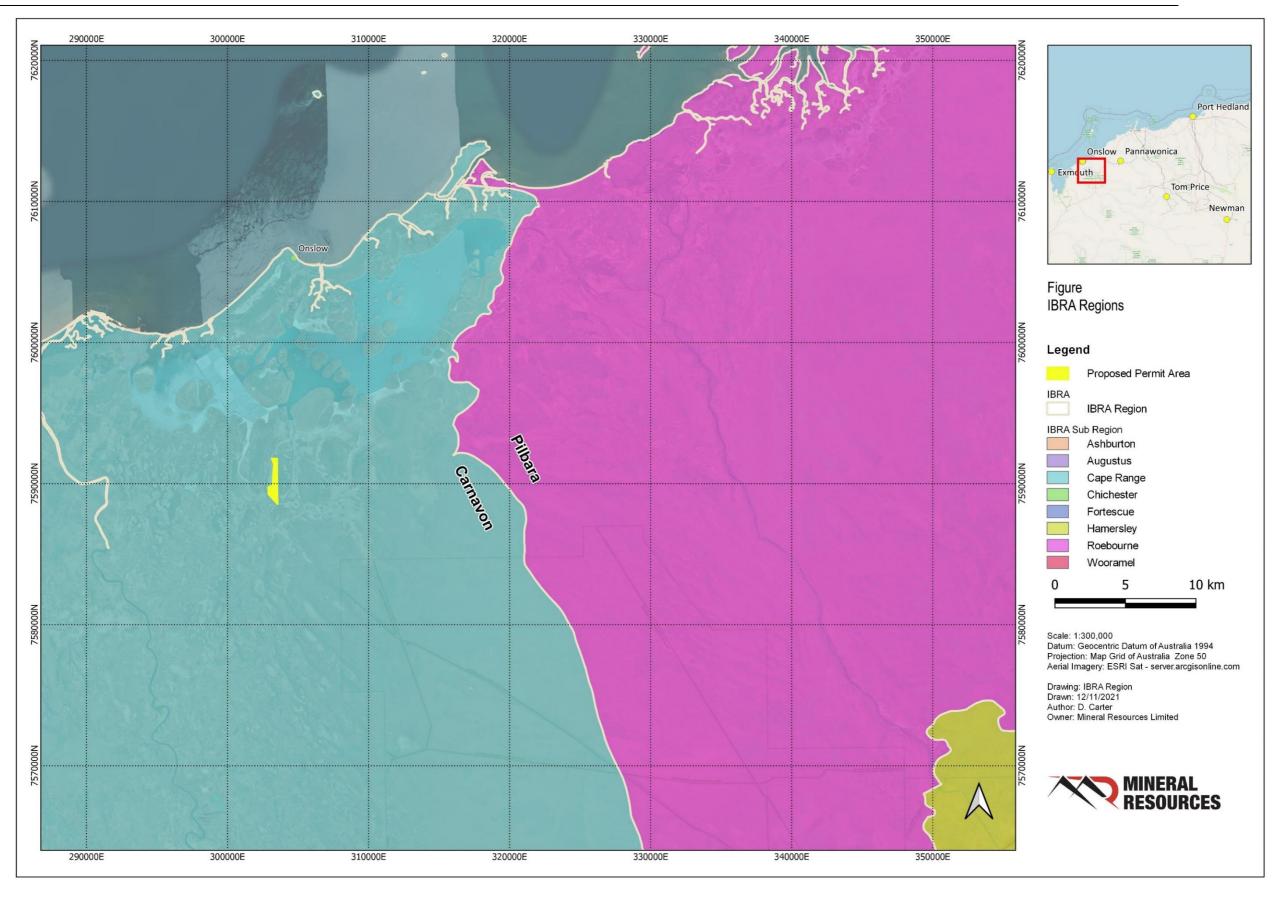
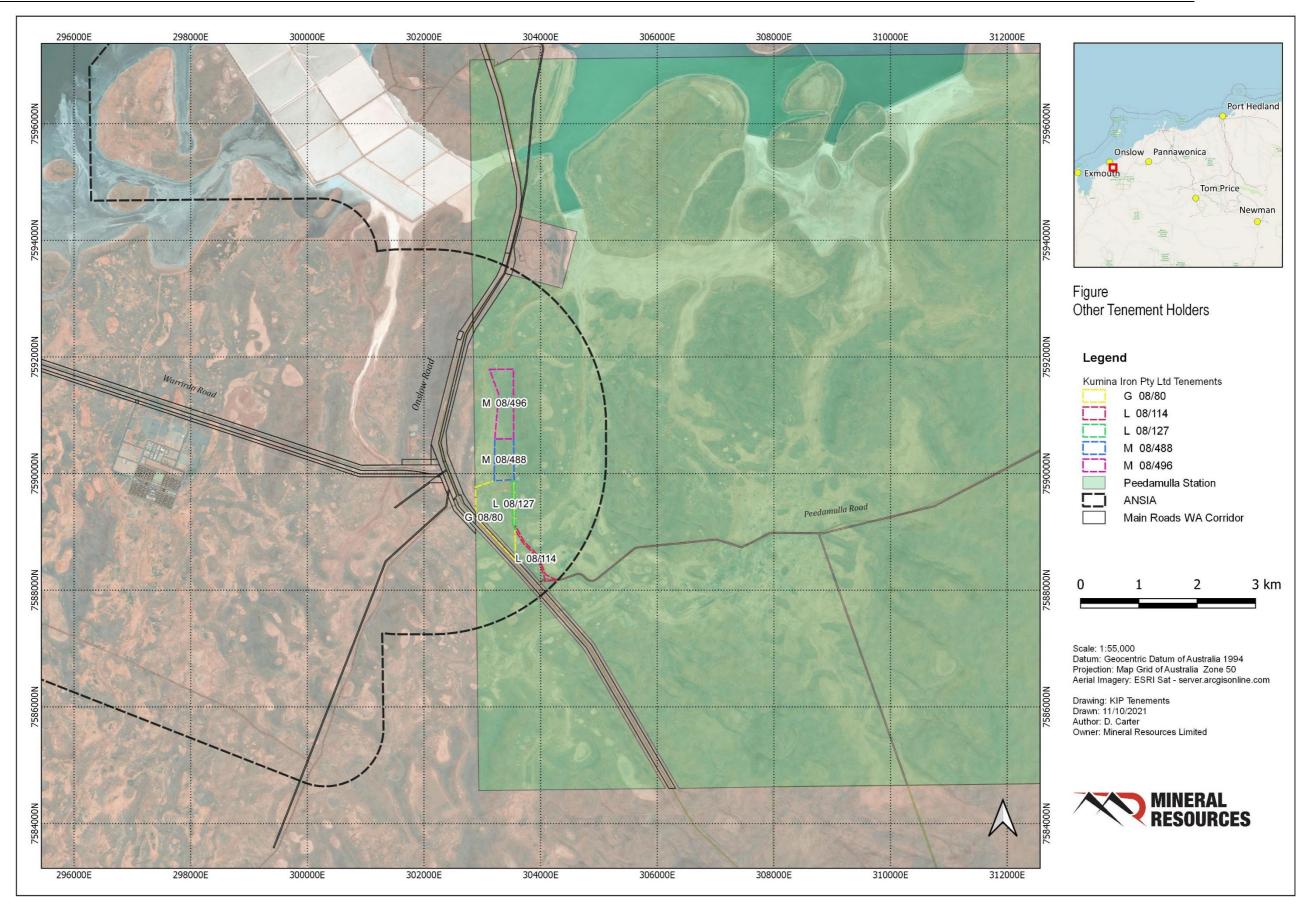


FIGURE 3: INTERIM BIOGEOGRAPHIC REGIONALIZATION OF AUSTRALIA





**FIGURE 4: OTHER LAND USERS** 



#### 4.5 LAND SYSTEMS AND SOILS

## 4.5.1 Land Systems

Land Systems within the proposal area consist of:

- Onslow Land System: Undulating sand plains, dunes and level clay pans supporting soft spinifex grasslands and minor tussock grasslands; and
- **Dune Land System**: Dune field supporting soft spinifex grasslands.

The vast majority of the Proposed Permit Area is contained within the Dune Land System, 57.55 ha or 89.31%. The Onslow Land System has a minor occurrence along the western boundary of M08/488 and M08/496 and the over the entirety of L08/114.

Both land systems are well represented in the Pilbara and/or Ashburton Regions. The extent of these land system occurring within the Proposed Permit Area is minimal when compared to the extent of each land system occurring elsewhere within the Pilbara and/or Ashburton Regions.

#### 4.5.2 Soil Characteristics

The Proposed Permit Area falls within the Exmouth Province. The sand plains and dunes are dominated by red deep sands. On the plains are red deep sandy duplexes with some red sandy earths. Red/brown non-cracking clays, hard cracking clays and red deep sandy duplexes are found on the alluvial plains and floodplains (Tillie 2006).

#### 4.5.3 Land Degradation Summary

The location of the Proposed Permit Area has been subject to land degradation from cattle for over 100 years, impacts from disturbance included cattle grazing, trampling and scats, weeds, and frequent burning. 28.1 ha of land within the proposed area is identified as completely degraded, a summary of the vegetation condition is included in Section 4.6.6.

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#### 4.6 FLORA AND VEGETATION

Multiple flora and vegetation surveys were completed under Yarri Mining and Onslow Resources, shown in Table 4. MRL commissioned 360 Environmental to complete a multi season Flora and Vegetation Assessment in 2021 for the Ashburton Infrastructure Project (AIP), this assessment included the entire Project footprint (360 Environmental 2021a).

A combination of previous studies and the 360 Environmental (2021a) Surveys have been used to undertake the flora and vegetation assessment and all calculations and maps provided are based on the most recent surveys.

**TABLE 4: RELEVANT FLORA AND VEGETATION SURVEYS** 

Consultant	Study	Tenements
Newland (2012)	Flora and Vegetation Survey for the Onslow Camp Dune Project	G08/80, M08/488
Newland (2013a)	Flora and Vegetation Survey for the Onslow Camp Dunes North Project	M08/496, L08/117
Newland (2013b)	Flora and Vegetation Survey of L08/114 – Onslow Camp Dunes Project	L08/114
360 (2021)	Flora and Vegetation Survey for the AIP including Onslow Camp Dunes Project	G08/80. M08/488. M08/496. L08/127, L08/114

## 4.6.1 Pre-European Vegetation

Mapping of pre-European broad vegetation within WA was completed on a broad scale (1:1,000,000) by Beard (1976). These vegetation types were later re-assessed by Shepherd et al. (2002), resulting in 819 vegetation associations within WA.

The Proposed Permit Area falls within Vegetation Association 670: Cape Yannare Coastal Plain (Table 5). The area is described as "Shrub-steppe. Hummock grassland with scattered shrubs or mallee (*Triodia* spp., *Acacia* spp., *Grevillea* spp., *Eucalyptus* spp.)" (360 Environmental 2021a)

TABLE 5: VEGETATION ACCOSIATION WITH THE PROJECT AREA

Vegetation Association	Pre-European area (ha)	Current extent (ha)	Remaining (%)	Extent managed in DBCA lands (%*)
Cape Yannare Coastal Plain 670	147,808.61	147,792.06	99.99	11.67

<sup>\*</sup>as a portion of the current extent

## 4.6.2 Conservation Significant Flora

No priority flora was identified within the project area, though *Eleocharis papillosa* (P3) and *Eremophila forrestii subsp. Viridis* (P3) were located within the vicinity of the Proposed Permit Area (Figure 5). A WA Herbarium database search identified *Triumfetta echinate* (P3) approximately 1 km from the Proposed Permit Area.



360 Environmental (2021) survey identied 1,061 *Eremophila forrestii subsp. Viridis* individuals within the survey area and 270 P3 *Eleocharis papillosa* individuals just outside the survey area and approximately 1.3 km south of the Proposed Permit Area.

Vegetation communities within the Proposed Permit Area have the potential to support priority species (Table 7) (360 Environmental 2021a).

## 4.6.3 Introduced Flora

360 Environmental (2021a) only identified one introduced species within the Proposed Permit Area - \*Vachellia farnesiana (Mimosa Bush) (Figure 6). Newland (2012) also identified the below species within the Survey Area footprint:

- \*Cenchrus ciliaris (Buffel Grass)
- \*Cenchrus setiger (Birdwood Grass)

All three species are listed as high risk under the Environmental Weed Strategy risk rating.

No declared plants were identified within the Proposed Permit Area, however \*Prosopis pallida (Mesquite) was recorded 1.1 km east of the Project. Mesquite is listed as Declared Pests under the BAM Act (Department of Primary Industries and Regional Development, 2018) and WoNS (Department of Agriculture Water and the Environment, 2020b).



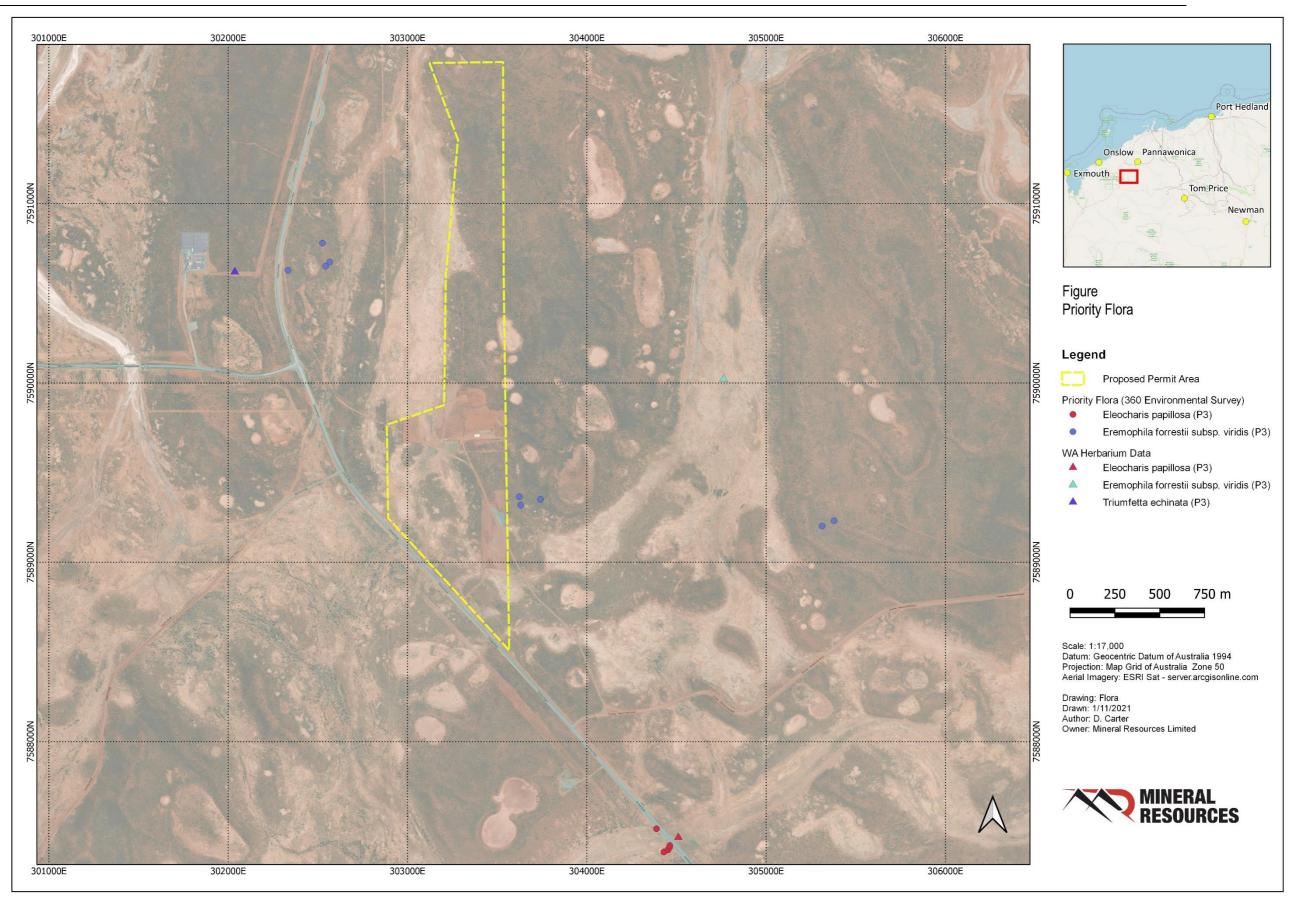


FIGURE 5: CONSERVATION SIGNIFICANT FLORA



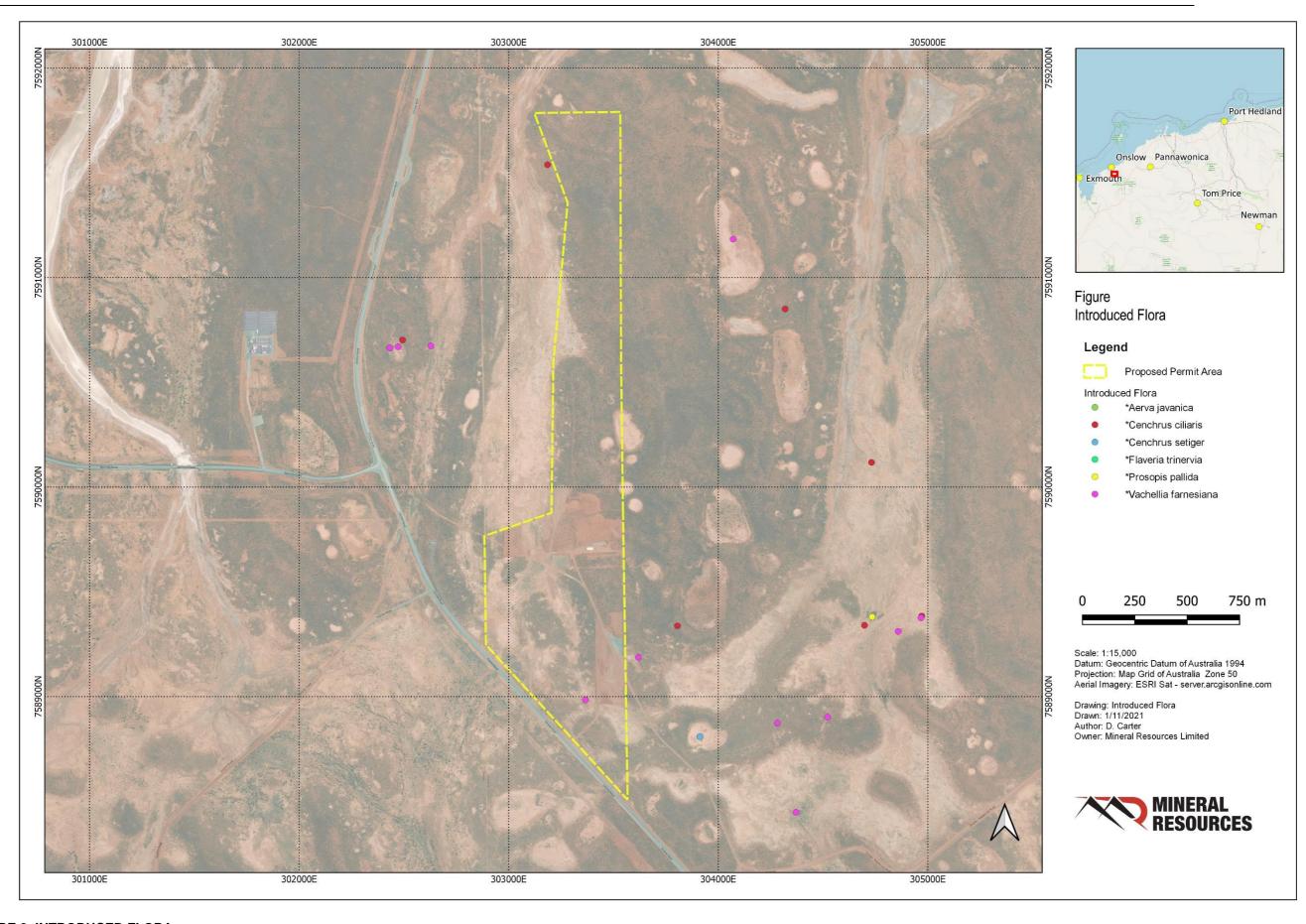


FIGURE 6: INTRODUCED FLORA



## 4.6.4 Vegetation Types

Eight vegetation types were identified within the Proposed Permit Area, summarised in Table 6 (Figure 7).

No Threatened Ecological Comminities (TEC) or Priority Ecological Communities (PEC) were identified within the Proposed Permit Area, the closest is the Peedamulla (Cane River) Swamp Community PEC located 32 km north east (Figure 8).

**TABLE 6: VEGETATION UNITS WITHIN PROJECT AREA** 

Vegetation Code	Vegetation Description	Amount Identified during 360 Environmental Surveys (Ha)	Amount within Project Area (Ha)
Cleared	Cleared	NA	28.1
CT02	Tecticornia auriculata and Tecticornia halocnemoides low open chenopod shrubland with Triodia epactia low open hummock grassland	303.25	8.51
CT03	Tecticornia auriculata (Tecticornia halocnemoides subsp. tenuis) low open chenopod shrubland to isolated chenopod shrubs (+/- *Cenchrus ciliaris low isolated tussock grasses)	1149.82	17.8
CT04	Tidal flats/open clay pans with low isolated herbs and chenopod shrubs	174.2	1.25
CT07	"Acacia tetragonophylla and Acacia synchronicia (and/or *Vachellia farnesiana) tall to mid open shrubland over Eriachne flaccida and Sporobolus mitchellii open tussock grassland to isolated tussock grasses"	82.72	0.07
DS01	Grevillea stenobotrya and Hakea stenophylla subsp. stenophylla (+/- Acacia sclerosperma subsp. sclerosperma) tall to mid open to sparse shrubland over Acacia stellaticeps low sparse shrubland to isolated shrubs over Triodia avenoides and Triodia epactia low open hummock grassland	1365.31	35.1
DS02	Acacia stellaticeps (+/- Acacia sclerosperma subsp. sclerosperma) mid to low open shrubland over Triodia epactia (+/- Triodia avenoides, Triodia glabra) low hummock grassland	1205.16	1.07
DS03	(+/- Acacia tetragonophylla, Acacia tetragonophylla x trachycarpa and/or Acacia synchronicia mid to low sparse shrubland over) Triodia epactia low hummock grassland	570.79	33.34

Of the vegetation types defined within the Proposed Permit Area six vegetation units could be considered locally significant as they could support Priority flora species or species of other conservation significance (Table 7) (360 Environmental 2021a).



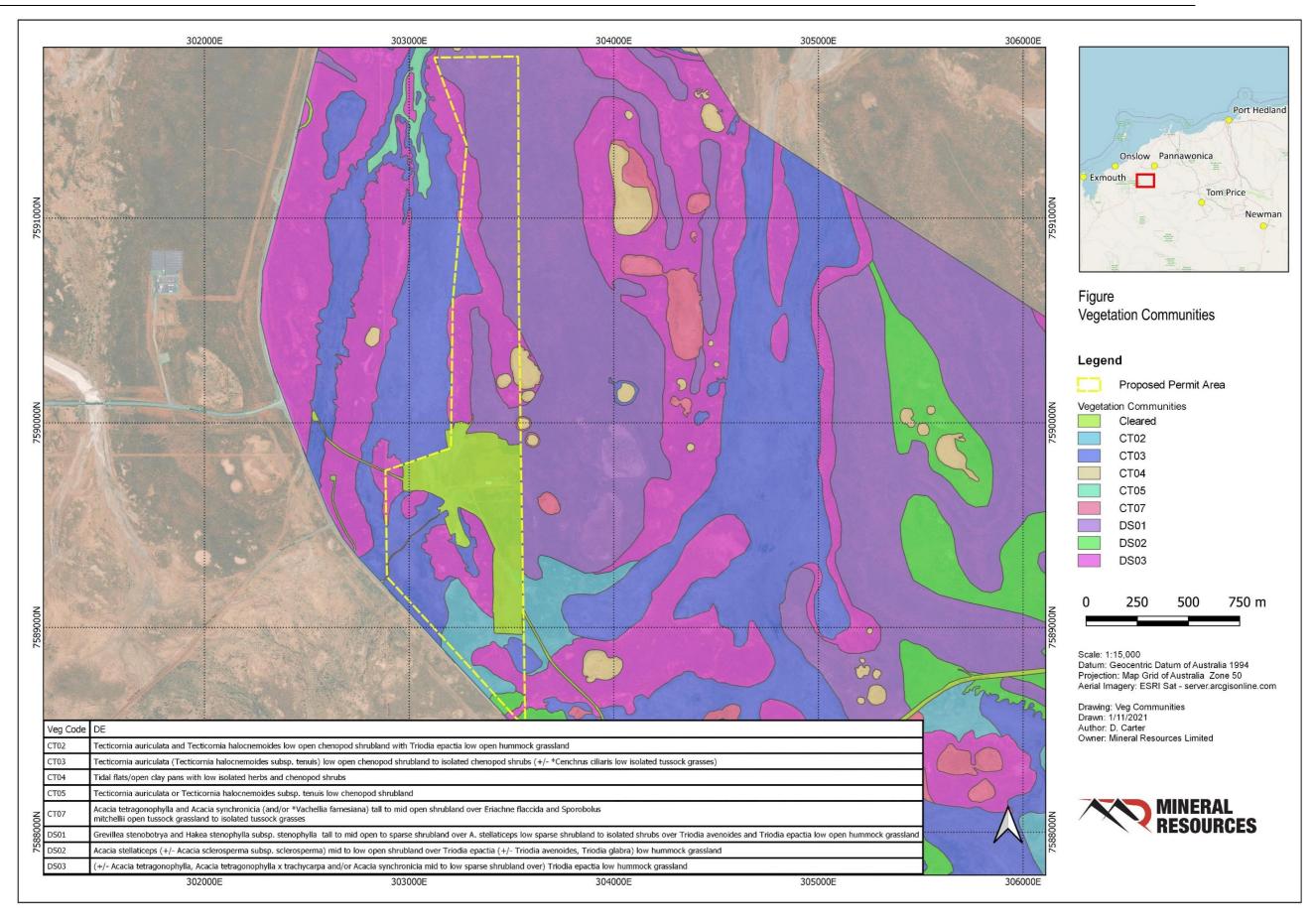


FIGURE 7: VEGETATION COMMUNITIES



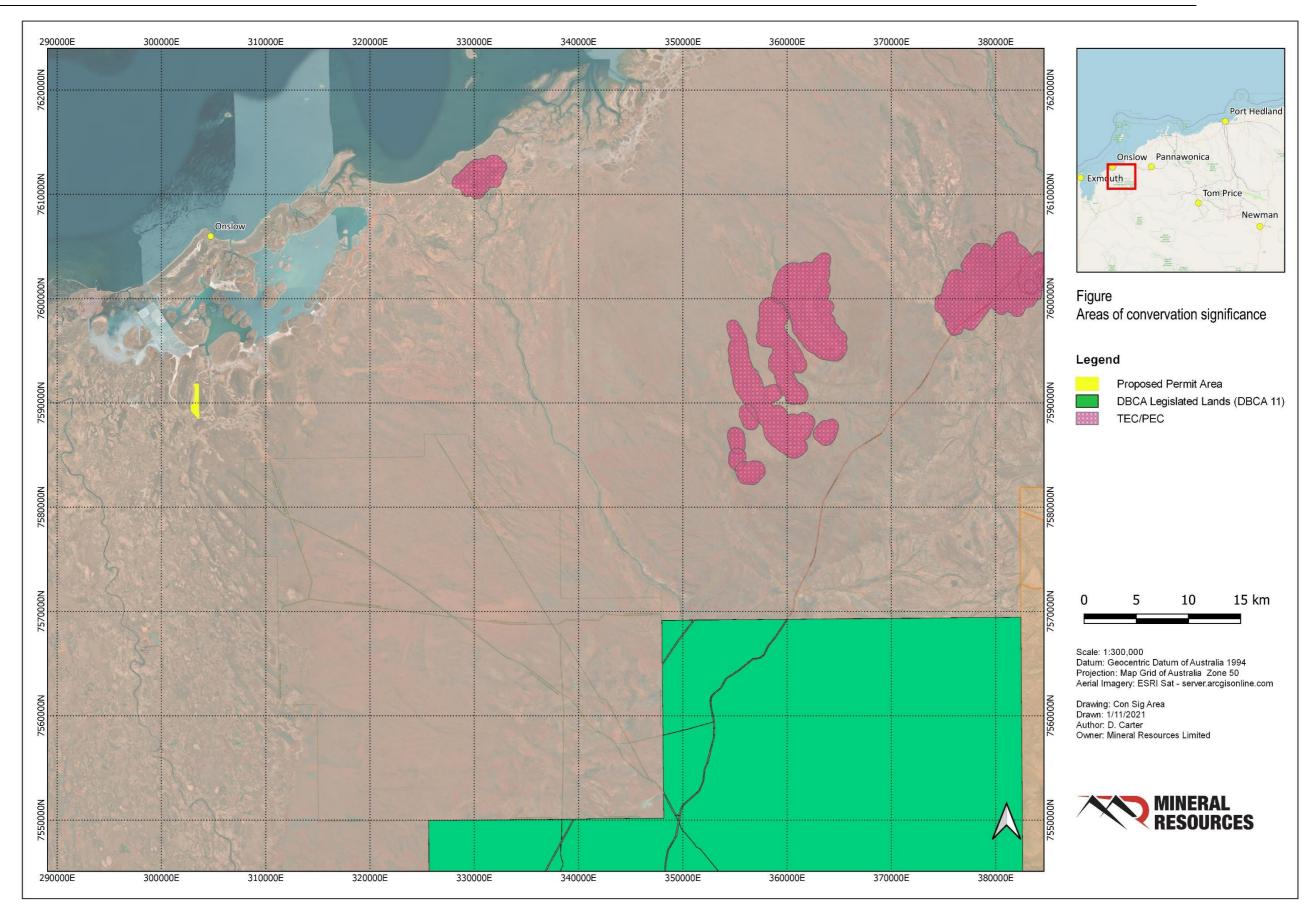


FIGURE 8: AREAS OF CONSERVATION SIGNIFICANCE



## TABLE 7: LOCALLY SIGNIFICANT VEGETATION UNITS WITHIN PROJECT AREA

Vegetation Unit	Reason for Local Significance	% Surveyed veg unit within Project Area
CT02	Supports a population of <i>Abutilon sp.</i> Onslow (F. Smith s.n. 10/9/61) (P1), a population of <i>Eremophila forrestii subsp. viridis</i> (P3) and a population of <i>Lepidium pholidogynum</i>	2.8
CT03	Supports a population of <i>Ipomoea coptica</i> and a population of <i>Lepidium pholidogynum</i>	1.55
CT07	Supports a population of <i>Abutilon sp.</i> Onslow (F. Smith s.n. 10/9/61) (P1), a population of <i>Ipomoea coptica</i> and a population of <i>Minuria integerrima</i>	0.08
DS01	Supports a population of <i>Abutilon sp.</i> Onslow (F. Smith s.n. 10/9/61) (P1) and a population of <i>Eremophila forrestii subsp. viridis</i> (P3)	2.57
DS02	Supports a population of Eremophila forrestii subsp. viridis (P3)	0.09
DS03	Supports a population of Eremophila forrestii subsp. viridis (P3)	5.84

# 4.6.5 Vegetation Condition

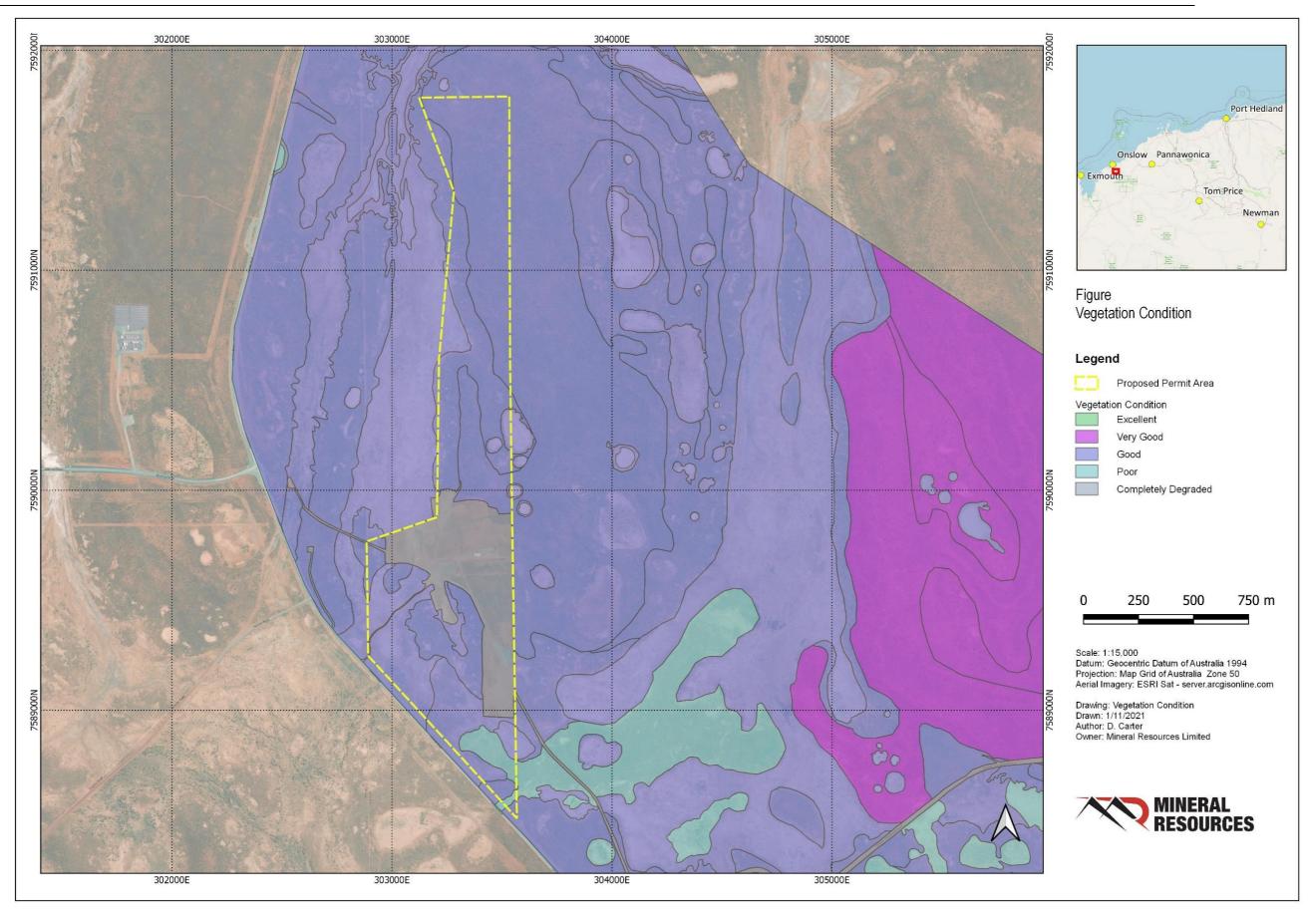
Vegetation condition was ranked as per technical guidance and ranged from Excellent to Completely Degraded, the below vegetation conditions were identified within the Project area (Figure 9) (360 Environmental 2021a):

Excellent: 0 haVery Good: 0 haGood: 94 ha (75%)Poor: 3.3 ha (2.6%)

• Completely Degraded: 28.1 ha (22.4%)

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**FIGURE 9: VEGETATION CONDITION** 



## 4.7 TERRESTRIAL FAUNA AND SRE

Multiple fauna and SRE surveys were completed under Yarri Mining and Onslow Resources, shown in Table 8. Mineral Resources Limited (MRL) commissioned 360 Environmental to complete a detail fauna and SRE Assessment in 2021 for the AIP this assessment included the entire Project footprint.

The fauna assessment below is a combination of previous studies and the 360 Environmental (2021b) surveys have been used to undertake the fauna assessment, all calculations and maps provided are based on the most recent surveys.

**TABLE 8: RELEVANT FAUNA STUDIES** 

Consultant	Study	Tenements
Rapallo (2011)	Level 1 Fauna Survey of the Twitchin Road Project Area for Onslow Resources	G08/80, M08/488
Newland (2013c)	Level 1 Fauna Survey of the Onslow Camp Dunes Stage 2 Project Area	M08/496, L08/128.
Newland (2013d)	Targeted Mulgara Survey of the Onslow Camp Dunes Project Area	G08/80, M08/488
Newland (2013e)	Reconnaissance Fauna Survey for Proposed Access Routes, Onslow Camp Dunes Project,	L08/114, L08/115
360 Environmental (2021b)	Ashburton Infrastructure Project – Terrestrial Fauna and Short Range Endemic Invertebrate Fauna Assessment	G08/80, M08/488, M08/496, L08/127, L08/114



## 4.7.1 Fauna Habitat

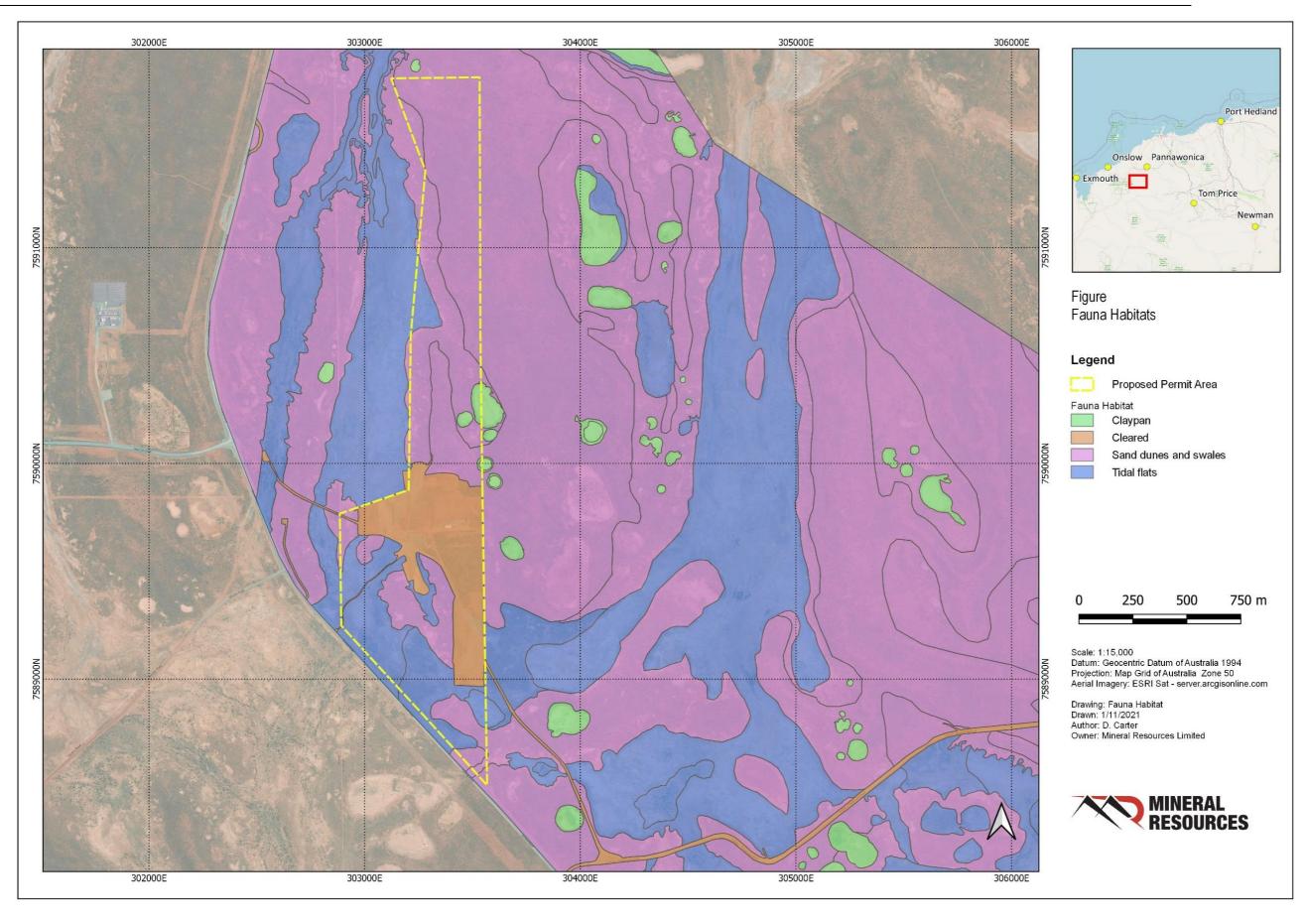
Three key habitat types were identified within the Proposed Permit Area as shown in Table 9 and Figure 10

- Tidal Flats
- Sand Dunes and Swales
- Claypan

**TABLE 9: FAUNA HABITAT** 

Habitat	Habitat Description	Amount within Project Area (Ha)	Amount Identified during 360 Environmental Surveys (Ha)	% of surveyed habitat within Permit Area
Cleared	NA	28.1	NA	NA
Tidal flats	Sparse, low Tecticornia shrubland and Triodia grassland. Sparse vegetation is of limited value as shelter for fauna taxa, however abundant large termite mounds provide shelter for a range of fauna taxa. The PPA area contains scattered Grey Mangroves Avicennia marina, which were not present elsewhere in the Survey Area. This section of the Survey Area lacked termite mounds or other suitable refuge for small mammals and reptiles. The conservation significant Short-tailed Mouse is known to use these habitats.	26.22	1,716	1.53
Sand dunes and swales	Open Triodia grasslands and low, open Acacia shrublands on a soft sandy substrate which is preferred habitat for many burrowing taxa. Landform is comprised of alternating dunes and swales. Key microhabitats include termite mounds and hummocks. Cattle degradation was observed.	69.92	3,149	2.22
Claypan	Claypans are seasonally inundated after rainfall events and will provide seasonal habitat for wetland-dependent taxa, including migratory birds. This habitat was extensively degraded by cattle in many areas. The conservation significant Short-tailed Mouse is known to use the fringes of these habitats.	1.21	42	2.88





**FIGURE 10: FAUNA HABITATS** 



## 4.7.2 Conservation Significant Fauna

No conservation significant fauna was recorded within the Proposed Permit Area (Figure 11), the below conservation significant species have the potential to occur within habitats identified within the Proposed Permit Area.

#### 4.7.2.1 Northern Quoll

Northern Quoll (*Dasyurus hallucatus*) footprints and scats were observed within Sand Dunes and Swale habitat 3 km east of the Proposed Permit Area, this was likely foraging habitat for a transient male.

The Northern Quoll is a medium-sized carnivorous, nocturnal marsupial that favours rocky areas, taking refuge in rock crevices and using gullies and drainage lines. They have a relatively large home-range size of up to 150 ha for males and 35 ha for females, and males can move up to 1.85 km between den sites in one night (Oakwood 2000; Department of the Environment 2016). Northern Quolls reproduce once a year, averaging seven young per litter (Department of the Environment, 2016). They have a short life span, with the females typically only surviving one or two years while the males die off annually following intense physical exertion during the breeding season (Department of the Environment 2016). The taxon can be locally common, but its range has contracted considerably (Van Dyck and Strahan 2008).

The mesas and breakaways habitats are likely to be most important for Northern Quolls as they provide denning, shelter, and foraging habitat, while drainage line/river/creek and stony hills and slopes habitats are primarily used for dispersal. These three habitats are considered to represent habitat critical for the survival of the taxon by the EPBC Referral Guidelines (Department of the Environment 2016). All other habitats may be infrequently used for dispersal or foraging; however, the taxa will not depend on these habitats.

#### 4.7.2.2 Waterbirds and Shorebirds

The tidal flats and claypans are intermittently important for waterbirds and shorebirds when seasonally inundated. Waterbirds and shorebirds may also use seasonally inundated drainage lines, rivers, and creeks. The EPBC Act Policy Statement 3.21 - Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species (Department of the Environment and Energy 2017) provides the following definition for important habitats for migratory shorebirds:

- Important habitat includes areas recognised as internationally important if:
  - o 1% of the individuals in the population of one species or
  - A total abundance of at least 20,000 waterbirds.
- Nationally important habitat is if it regularly supports:
  - o 0.1% of the flyway population of a single shorebird species, or
  - o 2,000 migratory shorebirds, or
  - o Fifteen (or more) migratory shorebirds species.

Shorebird and waterbird surveys conducted for the Wheatstone Project (11 km northwest of the main Survey Area, directly adjacent the PPA Survey Area) and Macedon Project (13 km northwest of the main Survey Area, 3 km southwest of the PPA Survey Area) recorded low waterbird counts (e.g. 10s and occasional 100s), with most migratory species occurring at the Onslow Town Beach (Bancroft and Bamford 2018). Shorebird and waterbird surveys undertaken for the Wheatstone Project in 2008 and 2009 found that overall numbers of waterbird species were well below any criterion for international significance with the exception of a single species, the Common Tern (Sterna hirundo), for which the population threshold for international significance was exceeded (Pendoley Environmental 2021) This taxa typically forages in nearshore waters and roosts in coastal habitats such as beaches or rock platforms (Menkhorst et al. 2017), which do not occur within the Survey Area.

The Onslow Salt evaporation facilities, located approximately 1 km north of the Survey Area, do not meet any criterion for international significance (BirdLife Australia 2020), however exceed the threshold of national significance for a single species, the Red-necked Stint (Calidris ruficollis) (BirdLife Australia 2020).



It is possible that habitats within the Onslow Salt evaporation facilities have not yet been identified as internationally significant for several species of migratory shorebird due to a lack of structured monitoring data (BirdLife Australia 2020).

While waterbirds and shorebirds are likely to use habitats within the Survey Area, higher quality habitats occur closer to the coast in locations such as the Onslow Town Beach and Onslow Salt evaporation facilities. Furthermore, tidal flats, claypans and drainage lines, rivers, and creeks occur more widely in the region outside the Survey Area, therefore populations of waterbirds and shorebirds that use habitats within the region are unlikely to be dependent on habitats within the Survey Area.

#### 4.7.2.3 Short-tailed Mouse

The Short-tailed Mouse (*Leggadina lakedownensis*) has a broad distribution across much of northern Australia and occurs in a range of habitat types. This includes spinifex and Acacia on seasonally inundated sandy-clay soils as well as sandy soils and cracking clays to build burrows which they shelter in during the day (Van Dyck and Strahan, 2008). It is generally rare with scattered populations, and very little is known of its biology. According to Van Dyck and Strahan (2008), Pilbara populations occur in stony hummock grassland, however the DBCA Threatened and Priority Fauna database search results show the species recorded in tidal flats and claypan habitats, two records were observed near the Proposed Permit Area, one 3 km north and one 5 km west (Figure 12)

The taxon was not detected during the field surveys, however given that it occurs in small, scattered populations it can be difficult to detect without intensive survey effort. Lack of detection does not rule out its presence. Suitable habitats are widespread and abundant within the Proposed Permit Area, including tidal flats, claypans, plains and stony plains. Previous records indicate that the species is most likely to use the vegetation fringing claypans. The regional population is unlikely to be dependent on habitats within the Survey Area as these habitats occur more widely in the region outside the Proposed Permit Area.

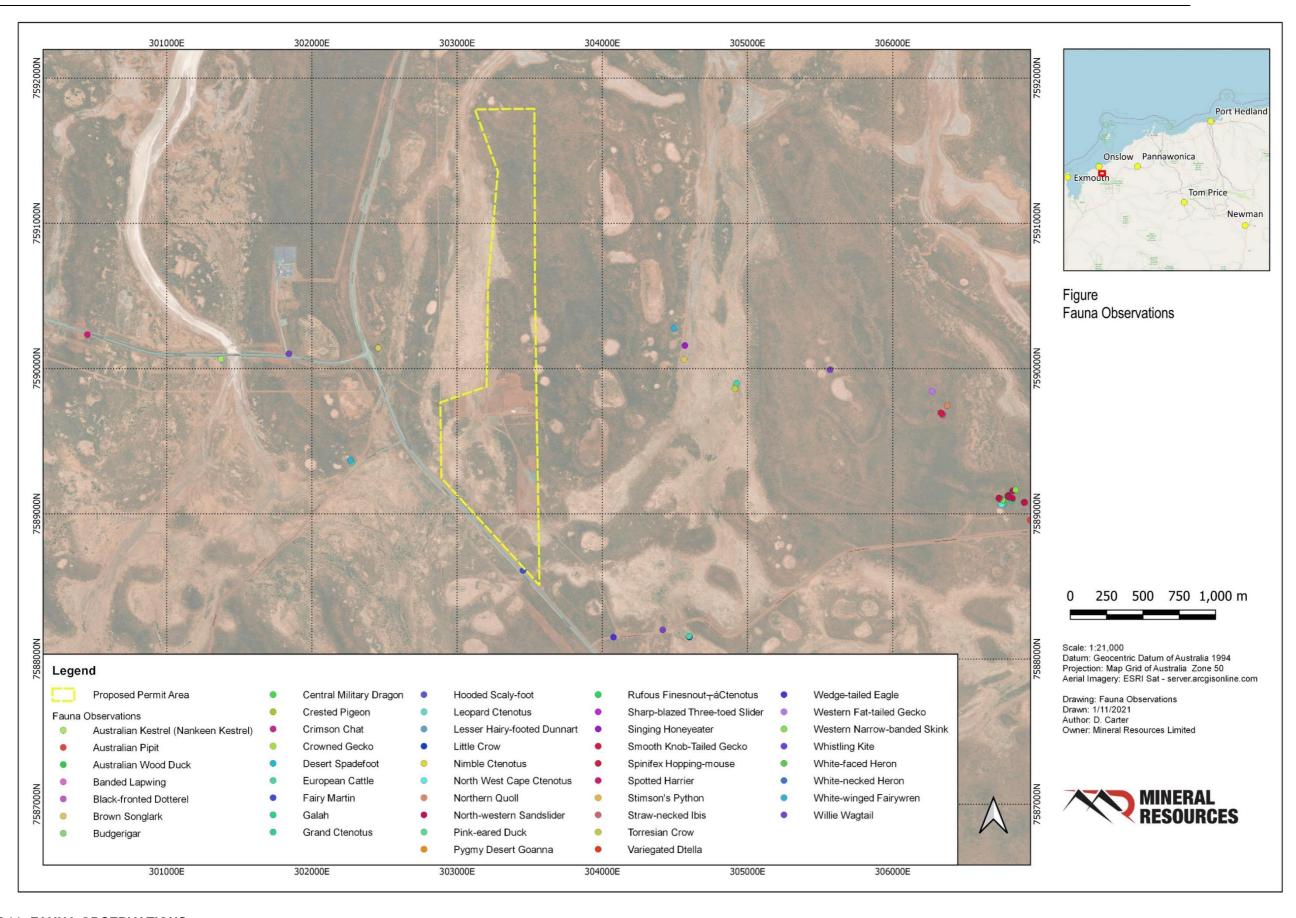
## 4.7.2.4 Brush Tailed Mulgara

Rapallo in 2011 (2011a and 2011b) recorded tracks at two locations within the Proposed Permit Area that were similar to those made by Mulgara. It was not possible, however, to confirm the presence of Mulgara or to determine the species of Mulgara from the tracks alone. Based on the regional location of the Proposed Permit Area, Rapallo concluded that these tracks were most likely made by the Brush-tailed Mulgara (*Dasycercus blythi*).

In April 2013 Newland Environmental undertook a targeted fauna survey to confirm the presence/absence of Mulgara populations on the project area (2013d). No Mulgaras were captured during the survey despite 5 nights of intensive trapping. No new Mulgara tracks or potential burrows were located in the searches conducted across the project area.

The likelihood of this species occurring in the Permit Area is high, deriving from the habitat assessment undertaken during the previous fauna survey of the project area.





**FIGURE 11: FAUNA OBSERVATIONS** 



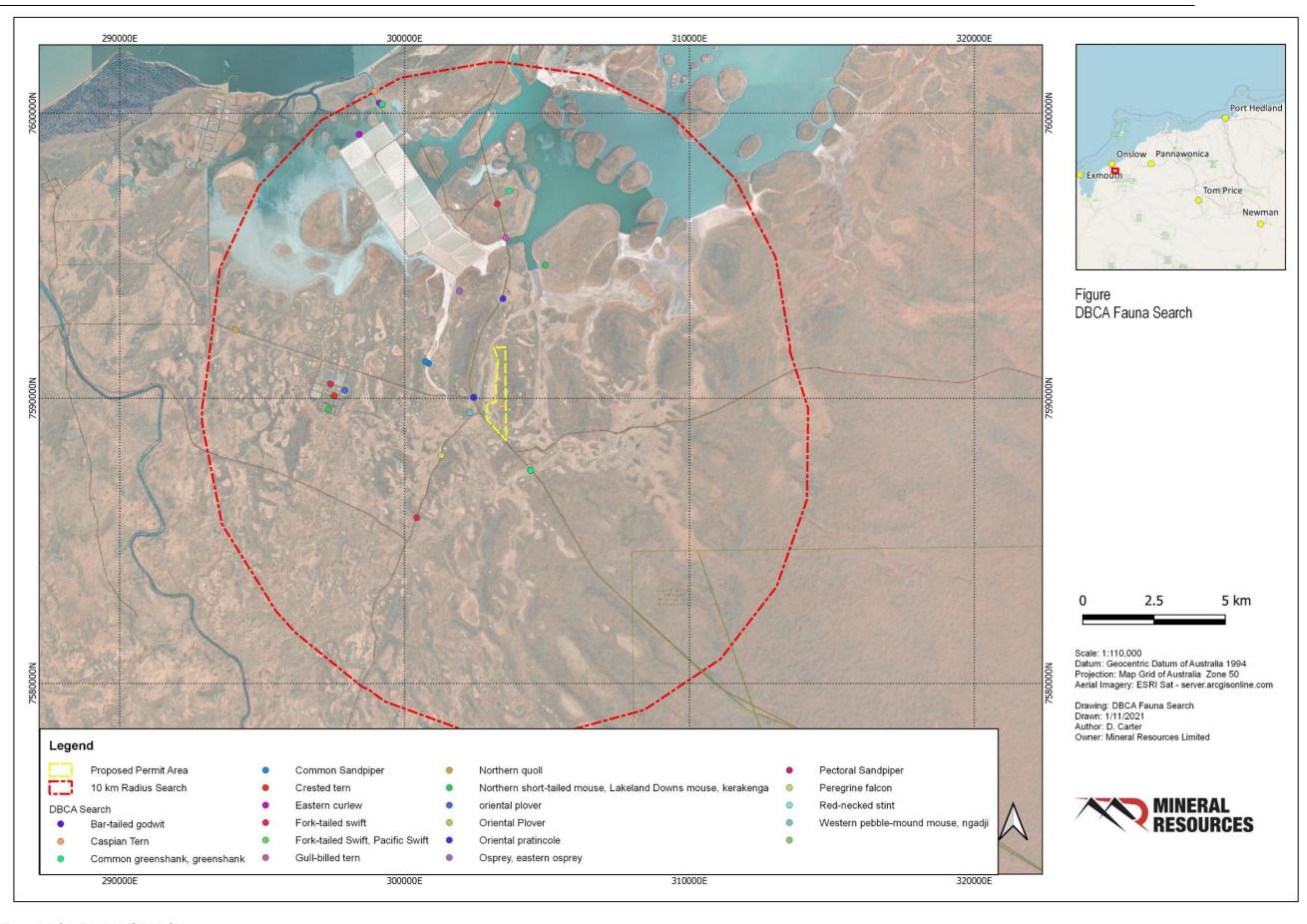


FIGURE 12: DBCA FAUNA SEARCH



# TABLE 10: DBCA CONSERVATION SIGNIFICANT FAUNA SEARCH

Species	Common Name	Class	WA Conservation Status	EPBC Status	Likelihood of occurrence in Project area
Actitis hypoleucos	Common Sandpiper	Bird	MI	МІ	High - suitable habitat on the Project site and regional records
Apus pacificus	Fork-tailed swift	Bird	MI	МІ	Medium - Recent nearby records. May use habitats in Project Area for foraging
Calidris melanotos	Pectoral Sandpiper	Bird	MI	MI	Medium - May use areas that become seasonally inundated (tidal flats/ claypan habitat) .
Calidris ruficollis	Red-necked stint	Bird	MI	MI	Medium - May use areas that become seasonally inundated (tidal flats/ claypan habitat) .
Charadrius veredus	Oriental plover	Bird	MI	MI	Medium - potential occasional visitor to site
Falco peregrinus	Peregrine falcon	Bird	os	-	Low – Lack of suitable habitat at Project site.
Gelochelidon nilotica	Gull-billed tern	Bird	МІ	MI	Low – Lack of suitable habitat at Project site.
Glareola maldivarum	Oriental pratincole	Bird	MI	MI	High -Recent nearby records, may use areas that become seasonally inundated (tidal flats/ claypan habitat).
Hydroprogne caspia	Caspian Tern	Bird	MI	MI	Medium – May use areas that become seasonally inundated (tidal flats/ claypan habitat) .
Limosa Iapponica	Bar-tailed godwit	Bird	MI (CR at subsp. level)	MI (CR at subsp. level)	Medium - Nearby records. May use habitats in the PPA Area (tidal flats).
Numenius madagascariensis	Eastern curlew	Bird	CR & MI	CR & MI	Low – Lack of suitable habitat at Project site.
Pandion cristatus	Osprey, Eastern osprey	Bird	МІ	MI	Low – Lack of suitable habitat at Project site.
Pseudomys chapmani	Western pebble- mound mouse, ngadji	Mammal	P4	-	Low – Lack of suitable habitat at Project site.
Thalasseus bergii	Crested tern	Bird	МІ	MI	Low – Lack of suitable habitat at Project site.



Species	Common Name	Class	WA Conservation Status	EPBC Status	Likelihood of occurrence in Project area
Tringa nebularia	Common greenshank, greenshank	Bird	МІ	МІ	Medium – May use areas that become seasonally inundated (tidal flats/ claypan habitat).

CR Critically endangered species

MI: Migaratory Species

OS: Other specially protected fauna

## 4.7.3 Short Range Endemics

Most of the habitats identified within the Proposed Permit Area (sand dunes, tidal flats and claypans) are widespread across the region and are unlikely to provide habitat isolates which may give rise to SRE invertebrates. These habitats are therefore considered to provide low SRE habitat suitability (Figure 13).

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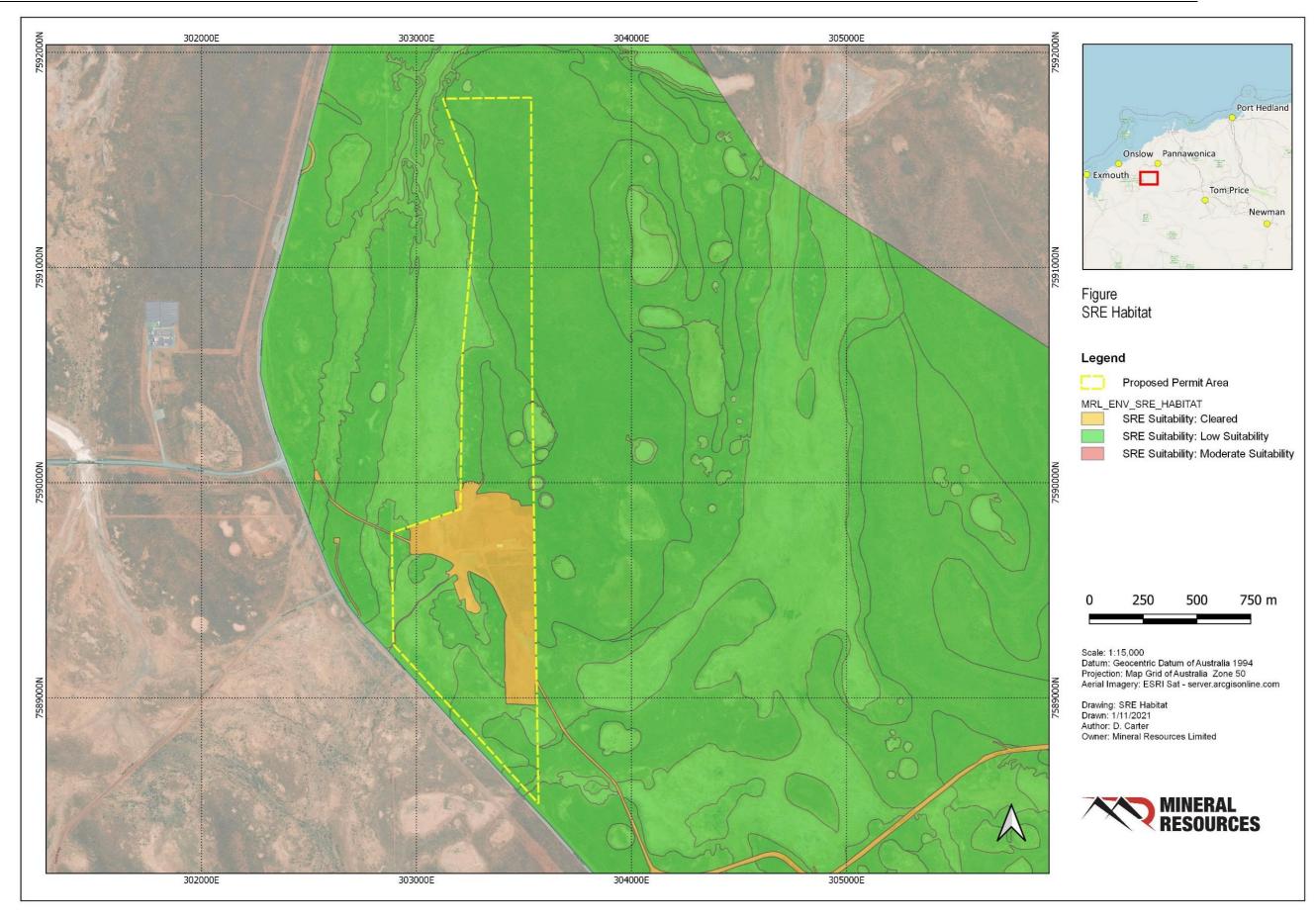


FIGURE 13: SHORT RANGE ENDEMIC HABITAT



#### 5. STAKEHOLDER CONSULTATION

MRL recognises the value of building positive relationships with key stakeholders and the communities in which we are active. We seek to build sustainable partnerships with business partners, governments, non-government organisations, host communities and other stakeholders to support mutually beneficial outcomes. MRL strives to engage early, openly, honestly and regularly with the communities impacted by our operations and consider their views in our decision-making with respect to key planning, operational and closure aspects.

MRL is committed to continued engagement with stakeholders through all development phases of projects and operations, a Stakeholder Engagement Plan is maintained which outlines all communications and requirements with relevant stakeholders.

Outcomes of these activities are recorded in a Stakeholder Consultation Register, which is a live document that interconnects with the Stakeholder Engagement Plan. This plan encompasses all Mineral Resources activities accosiated with their West Pilbara projects, including:

- Ashbutron Infrastructure Project
- Bungaroo South (Buckland) Iron Ore Project
- Kumina Iron Ore Project

MRL intend to include engagmenet activities specific to the Project in this Stakeholder Engagement Plan.

Key stakeholders associated with the Project include:

#### **Local and State Government:**

- Shire of Ashburton;
- Department of Mines, Industry Regulation and Safety (DMIRS);
- Department of Water and Environmental Regulation (DWER); and
- Main Roads WA (MRWA)

#### Non Government Stateholders

- Peedamulla Station
- Buurabalayji Thalanyji Aboriginal Corporation (Thalanyji)

MRL has had entensive consultation with key stakeholder listed covering all activities proposed within the region, the company is close to finalising agreements with Peedamulla station and Thalanyji, including compensation for and proposed disturbance over their lands.

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#### 6. AVIODANCE AND MITIGATION MEASURES

MRL has applied the mitigation hierarchy (avoid, minimise and rehabilitate) during the project design to reduce the potential impacts to flora and vegetation. Areas of land disturbed as a result of implementing this Project will be progressively rehabilitated to agreed post mining land use outcomes as documented in Mine Closure Plan Reg ID 84236.

The objectives of environmental management for the Proposal are:

- To identify all likely environmental impacts arising from the Proposal and to determine significant impacts requiring the implementation of special management procedures.
- To develop and declare the environmental management commitments necessary to minimise, control, ameliorate and rehabilitate significant impacts.

A terrestiral Construction Environmental Management Plan (CEMP) has been prepared to support the nearby Ashburton Infrastructure Project (AIP), management measures from this CEMP will be implemented for clearing under this proposal.

Table 11 below address requirements under section 5.6 of the clearing permit application, additional mitigation measures are included in Table 12.

**TABLE 11: SITE SELECTION – AVOIDANCE AND MITIGATION** 

DMIRS questionnaire	KIP site selection
Why did you select this location and amount of clearing?	The location for clearing was based on approved Mining Proposals, outlined in section 1.3. KIP is proposing to use the same approvedlayout, with new Mining Proposals to be submitted for any changes.
	The amount of clearing requested in this document includes the proposed disturbance requirements, minus existing disturbance which will be utilised where possible.
What alternatives to clearing – e.g. engineering solutions – did you consider	The Project location was selected due to its proximity to already established infrastructure, such as main roads and port facilities. This infrastructure allows for a reduction in transportation time and emissions, in addition to minimising the required clearing footprint with a large component of the existing Proposed Permit Area considered completely degraded (360 Environmental 2021a). Therefore, the location and amount of clearing was preferable to establishing a Greenfields site.
What changes, if any, did you make to the location or amount of clearing to reduce the impacts of the clearing?	Much of the supporting infrastructure is being relocated from M08/488 & M08/496 onto G08/80, due to the amount of existing disturbance on this tenement (Figure 9).
	Clearing within the Proposed Permit Area has been designed to occur within the 28.1ha of completely degraded vegetation mapped by 360 Environmental (2021a). Within these completely degraded areas supporting facilities will be installed. Of the total clearing required for the Project (Section 1.3), 24 ha (22%) will occur within completely degraded vegetation, therefore reducing the overall clearing footprint and impacts from the Project.

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#### 7. TEN CLEARING PRINCIPLES

The proposed vegetation disturbance has been assessed against the ten clearing principles described within A Guide to the Assessment of Applications to Clear Native Vegetation (Department of Water and Environmental Regulation; DWER, 2014) under Part V Division 2 of the *Environmental Protection Act 1986* (WA). Table 12 assesses the Project against these ten clearing principles.

The results of flora, vegetation and fauna surveys described in Section 4 have been used in the assessment of the ten clearing principles in Table 12.



#### TABLE 12: ASSESSMENT OF PROPOSED VEGETATION AGAINST THE TEN CLEARING PRINCIPLES, AVIODANCE AND MITGATION MEASURES

Relevant information	Assessment of potential impacts	Proposed migitaion measures	Assessment of variance with clearing principle
A. Native vegetation should not be cleared if it comprises a high level of biological	diversity		
Vegetation is not highly diverse and is well represented within the region.  No Environmentally Sensitive Areas (ESAs) were identified within the Permit Area.  None of the vegetation types or vegetation associations mapped within the Permit Area correspond to a known TEC or PECs.  Six of the vegetation communities were considered to be locally significant, percentages of the mapped community for each will be minimal:  • CT02: 2.8 % of mapped community within the Proposed Permit Area  • CT03: 1.55 % of mapped community within the Proposed Permit Area  • CT07: 0.08 % of mapped community within the Proposed Permit Area  • DS01: 2.57 % of mapped community within the Proposed Permit Area  • DS02: 0.09 % of mapped community within the Proposed Permit Area  • DS03: 5.84 % of mapped community within the Proposed Permit Area	The native vegetation within the Proposed Permit Area is not expected to comprise a level of biological diversity that is significant within the Carnavon bioregion. The vegetation within the Proposed Permit Area is broadly representative of vegetation from the surrounding area and is known to occur in much larger areas outside of the proposed Permit Area.  The 360 Environmental (2021) survey report stated that all vegetation associations had greater than 99% of their pre-European extent remaining. Therefore, the implementation of the Project is not expected to significantly impact the regional representation of the identified vegetation associations.  No Threatened Flora, Priority Flora or Threatened or Priority Ecological Communities are located within the Proposed Permit Area.  According to Rapallo (2011a), regional data indicates a total of 273 taxa of vertebrate fauna have been recorded from the vicinity of the survey area comprising 28 mammals, 168 birds, 73 reptiles, and four frogs.  A Level 1 vertebrate fauna survey of the Proposed Permit Area (General Purpose Lease 08/80) and adjacent Mining Lease 08/488 recorded 11 reptile and 24 bird species and evidence of three native mammal species (Rapallo, 2011a). No fauna was recorded during recent surveys (360 Environmental 2021b)  The low level of fauna activity recordeds likely to be a result of high temperatures (Rapallo, 2011a). Fauna habitats were considered widespread at the local and regional level and no unique or specialised fauna habitat was recorded within the Proposed Permit Area .  Based on the above, the proposed clearing is not likely to be at variance to this Principle.	<ul> <li>All clearing activities will me managed by the MRL Site Disturbance Permit System.</li> <li>Disturbance areas will be minimised and clear delineation of clearing limits will be installed;</li> <li>Existing tracks will be utlised where possible;</li> <li>Strict hygiene measures wil be employed;</li> <li>Cleared areas are to be rehabilitated if not required during operations; and</li> <li>Site inductions to all personnel include management of priority and conservation significant species.</li> </ul>	The proposed vegetation disturbance is not expected to be at variance with Clearing Principle A.
B. Native vegetation should not be cleared if it comprises the whole, or part of, or i	is necessary for the maintenance of, a significant habitat for fauna i	ndigenous to WA	
The fauna habitats within the Permit Area do not form significant habitat for terrestrial fauna. All habitats are common and well represented in the surrounding areas.  The 360 Environmental (2021a) desktop study returned 21 significant fauna species that potentially occur within the 10 km search radius. Of these seven were assessed as possible and only the Western Pebble-mound Mouse likely to occur within the Permit Area.  No Conservation Significant fauna were recorded by 360 Environmental (2021a) within the Permit Area, the Northern Quoll tracks and scats identified 3 km east of the Permit area is likely a transient male, the regional Northern Quoll population is unlikely to be dependent on habitats within the Permit area as these habitats occur more widely in the region outside the Area .	Of the three habitat types identified during recent surveys (Tidal flats, sand dunes & swales, and Claypans) between 1.53 – 2.88 % of the habitat recorded in the surveys area within the Proposed Permit Area.  These habitats extend significantly outside the surveyed area.  The project area is considered to be low suitability for SRE habitat (Figure 13)  Based on the above, the proposed clearing is not likely to be at variance to this Principle.	<ul> <li>All clearing activities will me managed by the MRL Site Disturbance Permit System.</li> <li>Disturbance areas will be minimised and clear delineation of clearing limits will be installed;</li> <li>Existing tracks and disturbance will be utlised where possible;</li> <li>Cleared areas are to be rehabilitated if not required during operations; and</li> <li>Site inductions to all personnel include management of priority and conservation significant species</li> <li>Fauna refuges such as logs will be pushed to the side of the clearing and retained where practicable;</li> </ul>	The proposed vegetation disturbance is not expected to be at variance with Clearing Principle B.

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Relevant information	Assessment of potential impacts	Proposed migitaion measures	Assessment of variance with clearing principle
C. Native vegetation should not be cleared if it includes, or is necessary for the con	ntinued existence of, rare flora		
No rare flora or priority flora was found within the permit area, Priority 3 species <i>Eremophila forrestii subsp. Viridis</i> was identified within 100m of the permit area and is likely to fall within the proposed disturbance footprint. 1,061 individuals of this species were identified during the 360 Environmenal (2021a) survey.  Priority 3 species <i>Eleocharis papillosa</i> was found approximatel 1.3 km south of the Proposed Permit Area and is unlikely to occur within the Proposed Permit Area.	No threatened or priority flora were recorded within the Proposed Permit Area and those species returned in extended survey and desktop searches were assessed as being unlikely to occur within the Proposed Permit Area, with the execption of <i>Eremophila forrestii subsp. Viridis</i> which disturbance to the population is expected to be negligible.  Based on the above, the proposed clearing is not likely to be at variance to this Principle.	<ul> <li>Cleared areas are to be rehabilitated if not required during operations; and</li> <li>All clearing kept to minimum required area within the Permit Area and completed only as required.</li> </ul>	The proposed vegetation disturbance is not expected to be at variance with Clearing Principle C.
D. Native vegetation should not be cleared if it comprises the whole or part of, or is	s necessary for the maintenance of, a Threatened Ecological Comm	unity	
No TEC or PEC within Proposed Permit Area, closest is the Peedamulla (Cane River) Swamp Community PEC located 32 km north east.	No impacts to TECs or PECs from proposed disturbance.  Based on the above, the proposed clearing is not likely to be at variance to this Principle.	Not Applicable	The proposed vegetation disturbance is not expected to be at variance with Clearing Principle D.
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		
The EPA Position Statement No. 2 on Environmental Protection of Native Vegetation in Western Australia (EPA, 2000) recognises that the retention of 30% or more of the preclearing extent of each ecological community is necessary if Western Australia's biodiversity is to be protected.  The Proposed Permit Area intersects with one vegetation associations mapped by Beard (1976) representing pre-European vegetation, Vegetation Association 670: Cape Yannare Coastal Plain. The area is described as "Shrub-steppe. Hummock grassland with scattered shrubs or mallee (Triodia spp., Acacia spp., Grevillea spp., Eucalyptus spp.)" This vegetation association has 99.99% remaining within the Carnarvon IBRA region and the Shire of Ashburton (360 Environmental, 2021a).  75% of the vegetation condition within the permit area is listed as good condition, with 22.4% completely degraded. The area has experienced disturbance from over 100 year of cattle operations within the region.	This amount of clearing within a largely uncleared regional landscape is not expected to be significant.  The vegetation condition surrounding the Proposed Permit Area is similar to the proposed disturbance.  Based on the above, the proposed clearing is not likely to be at variance to this Principle.	<ul> <li>All clearing activities will me managed by the MRL Site Disturbance Permit System.</li> <li>Disturbance areas will be minimised and clear delineation of clearing limits will be installed;</li> <li>Existing tracks will be utlised where possible;</li> <li>Cleared areas are to be rehabilitated if not required during operations; and</li> <li>Site inductions to all personnel include management of priority and conservation significant species</li> </ul>	The proposed vegetation disturbance is not expected to be at variance with Clearing Principle E.
F. Native vegetation should not be cleared if it is growing in, or in association with	, an environment associated with a watercourse or wetland		
No Ramsar Wetlands, nationally Important Wetlands or DBCA managed waters occur within the Proposed Permit Area.	Clearing is not expected to have an impact to any watercourse or wetland, and the proposed clearing is not likely to be at variance to the Principle.	<ul> <li>All clearing activities will me managed by the MRL Site Disturbance Permit System.</li> <li>Disturbance areas will be minimised and clear delineation of clearing limits will be installed;</li> <li>Drainage line crossings will be fitted with culverts to maintain surface water flow.</li> <li>Any surface water structure will be designed to not result in sediment run off.</li> </ul>	The proposed vegetation disturbance is not expected to be at variance with Clearing Principle F.
G. Native vegetation should not be cleared if the clearing of the vegetation is likely	to cause appreciable land degradation		
The area adjacent to the Proposed Permit Area remains mostly uncleared with disturbance predominately associated with Onslow Road.  No declared pests or Weeds of National Significance were recorded within the Permit Area (360 Environmental 2021a), though *Prosopis pallida (Mesquite) was observed	The Proposed Permit Area is surrounded by extensive, continuous areas of undisturbed native vegetation.  Given the extent of remaining vegetation, disturbance of the type and at the scale proposed would not be expected to cause salinity,	<ul> <li>Disturbance areas will be minimised and clear delineation of clearing limits will be installed;</li> <li>Drainage line crossings will be fitted</li> </ul>	The proposed vegetation disturbance is not expected to be at variance with Clearing

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Relevant information	Assessment of potential impacts	Proposed migitaion measures	Assessment of variance with clearing principle
1.2km east of the Proposed Permit Area.	eutrophication or flooding. Whilst minor, local soil erosion may occur the topography is not steep and significant gullying would not be expected. Drainage mechanisms such as culverts will be installed, where necessary, to minimise erosion across drainage lines.  Based on the above, the proposed clearing is not likely to be at variance to this Principle.	with culverts to maintain surface water flow.  • Any surface water structure will be designed to not result in sediment run off. Erosion control will be fitted on drainage lines if required.  • Weed hygiene practices to be implemented.	Principle G.
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 r	nearby conservation area	
There are no nearby or adjacent conservation areas. The nearest conservation estate is the Cane River (Mount Minnie and Nanutarra) conservations park, located 5.5 km south east of of the Proposed Permit Area.  Additionally, land surrounding the Survey Area does not provide a buffer or ecological link to a conservation area.  The Proposed Permit Area is not located within an ESA.	The proposed clearing is unlikely to have an impact on the environmental values of any conservation areas or environmentally significant areas.  Based on the above, the proposed clearing is not likely to be at variance to this Principle.	Not Applicable	The proposed vegetation disturbance is not expected to be at variance with Clearing Principle H.
I. Native vegetation should not be cleared if the clearing is likely to cause deteriora	tion in the quality of surface or underground water		
There are no permanent watercourses or wetlands within the Proposed Permit Area, any ephemeral flow due to rainfall quickly evaporates or infiltrates leaving minimal pooling. The region has poorly defined drainage with no rivers or permanent creeks.	The proposed clearing is not expected to have any impact on the quality of groundwater.	Disturbance areas will be minimised and clear delineation of clearing limits will be installed;	The proposed vegetation disturbance is not expected to be at
Groundwater abstraction may be required within the Proposed Permit Area, the relevant licencing will be obtained in accordance with the <i>Rights in Irrigation and Water Act (RIWI) 1914</i> .	Potential impacts to surface quality as a result of the clearing include sediment loss from disturbed areas and minor hydrocarbon spills, which may occur as a result of leaks from vehicles and machery. Based on the above, the proposed clearing is not likely to be at variance to this Principle.	<ul> <li>Drainage line crossings will be fitted with culverts to maintain surface water flow.</li> <li>Any surface water structure will be designed to not result in sediment run off.Standard engineering controls to limit the potential for erosion and sediment loss;</li> <li>Limit changes in topography as much as possible;</li> <li>Groundwater encountered during activities will be managed in accordance a 5C Licence</li> </ul>	variance with Clearing Principle I.
J. Native vegetation should not be cleared if the clearing is likely to cause, or exac	erbate, the incidence or intensity of flooding		
The climate of the region is semi-arid, characterised by hot summers and cool winters. The area has a low average rainfall of approximately 304 millimetres per year (BoM, 2021). There are no permanent watercourses or wetlands within the area proposed to be cleared.	The clearing is not proposed to include the damming or retention of surface water. There may be minor changes to localised surface drainage through the clearing of vegetation however, there is not expected to be any significant or ongoing impact to surface water caused by construction or operation and maintenance activities. The clearing will only cause localised disturbance that will not exacerbate the incidence or intensity of flooding.  Based on the above, the proposed clearing is not likely to be at variance to this Principle.	<ul> <li>Disturbance areas will be minimised and clear delineation of clearing limits will be installed;</li> <li>Drainage line crossings will be fitted with culverts to maintain surface water flow.</li> <li>Any surface water structure will be designed to not result in sediment run off.Standard engineering controls to limit the potential for erosion and sediment loss;</li> <li>Limit changes in topography as much as possible;</li> <li>Water retention structures will not be developed within any drainage lines.</li> </ul>	The proposed vegetation disturbance is not expected to be at variance with Clearing Principle J.

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#### 8. SUMMARY AND CONCLUSIONS

The purpose of this clearing permit application is mineral processing and supporting infrastructure for the Project. The mining activities to be undertaken are for dune sand quarrying and supporting infrastructure as approved under existing Mining Proposals (most recent Reg ID 56674, Onslow Camp Dunes Project-Stage 2).

This application seeks approval for up to 106 ha of clearing within a 124.53 ha Proposed Permit Area.

All vegetation disturbance detailed within this NVCP application is proposed to occur within the Permit Area shown in Figure 2 and described in Table 3Table 2. The vegetation disturbance is associated with clearing for sand quarries, processing infrastructure, accommodation and offices facilities, and heave vehicle workshops.

The assessment against the ten clearing principles described within A Guide to the Assessment of Applications to Clear Native Vegetation (DWER, 2014) under Part V Division 2 of the EP Act was based on information derived from all relevant surveys. The recent 360 Environmental (2021a; 2021b) Flora & Vegetation, and Terrestrial Fauna & Short Range Endemic assessments were use for disturbance calculations and mapping.

Vegetation represented within the Permit Area is well represented within the region and the small area of proposed clearing is unlikely to have any major effect on the environmental values of the region (360 Environmental 2021a). There are no recorded TECs, PECs and Threatened or Priority flora or fauna within the Permit Area and the closest conservation estate is over 5 km away (Figure 8360 Environmental 2021a).

The Project forms an integral part of the MRL's proposed developments in the Onslow / Ashburton area with, management strategies to minimise the impact of land clearing being consistent with those committed to under Onslow Camp Dunes Project Mining Proposals and Mine Closure Plan (Table 1).

The proposed clearing is not expected to be at variance with any of the ten clearing principles (Table 12).



#### 9. REFERENCES

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Newland (2013c) Level 1 Fauna Survey of the Onslow Camp Dunes Stage 2 Project Area on M08/496 and L08/128. Unpublished report prepared by Newland Environmental for Onslow Resources Limited, August 2013.

Newland (2013d) *Targeted Mulgara Survey of the Onslow Camp Dunes Project Area.* Unpublished memorandum prepared by Newland Environmental for Onslow Resources Limited, April 2013.

Newland (2013e) *Memorandum of Results: Reconnaissance Fauna Survey of the Onslow Camp Dunes Road Access Project Area on L08/114 and L08/115*. Unpublished report prepared for Onslow Resources Ltd by Newland Environmental, April 2012.

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#### LIST OF APPENDICES

#### Appendix A

G08/80, M08/488 & M08/496 TENEMENT REPORTS

#### Appendix B

CPS 5707/1 & CPS 5708/1 (EXPIRED)

#### Appendix C

KUMINA IRON PTY LTD ASIC COMPANY EXTRACT

#### Appendix D

ASHBURTON INFRASTRUCTURE - FLORA AND VEGETATION ASSESSMENT (PROVIDED SEPERATELY)

#### Appendix E

ASHBURTON INFRASTRUCTURE – TERRESTRIAL FAUNA AND SHORT RANGE ENDEMIC INVERTEBRATE FAUNA ASSESSMENT (PROVIDED SEPERATELY)



#### APPENDIX A - G08/80, M08/488 & M08/496 TENEMENT REPORTS

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Status: Live

#### MINING TENEMENT SUMMARY REPORT

#### **GENERAL PURPOSE LEASE 08/80**

#### **TENEMENT SUMMARY**

Term Granted: 21 Years

#### **CURRENT HOLDER DETAILS**

#### Name and Address

KUMINA IRON PTY LTD LAND ACCESS TEAM, PO BOX 1095, CANNING BRIDGE LPO, APPLECROSS, WA, 6153, xxxxxxxxx@mrl.com.au, xxxxxxxx600

#### **DESCRIPTION**

Locality: Onslow south

Datum: Datum is located at Zone 50 7588501N to 303572E

Boundary: Thence to 7589247N and 302892E Thence to 7589766N

and 302899E Thence to 7589871N and 303214E Thence

to 7589890N and 303546E back to datum

Area: Type Dealing No Start Date Area

 Surveyed
 16/06/2013
 64.75500 HA

 Granted
 28/06/2012
 65.00000 HA

 Applied For
 13/11/2011
 65.00000 HA

#### SHIRE DETAILS

 Shire
 Shire No
 Start
 End
 Area

 ASHBURTON SHIRE
 250
 15/11/2011
 64.75500 HA





#### MINING TENEMENT SUMMARY REPORT

MINING LEASE 08/488 Status: Live

#### TENEMENT SUMMARY

**Received**: 21/11/2011 13:40:00 **Commence**: 10/07/2012

**Term Granted: 21 Years** 

#### **CURRENT HOLDER DETAILS**

Name and Address

KUMINA IRON PTY LTD

LAND ACCESS TEAM, PO BOX 1095, CANNING BRIDGE LPO, APPLECROSS, WA, 6153,

xxxxxxxxx@mrl.com.au, xxxxxxx600

#### **DESCRIPTION**

Locality: ONSLOW SOUTH

Datum: DATUM SITUATED AT ZONE 50 7589871 NORTHING

303214 EASTING

**Boundary:** THENCE 7590590 NORTHING 303214 EASTING

THENCE 7590599 NORTHING 303543 EASTING THENCE 7589890 NORTHING 303546 EASTING BACK

TO DATUM

Area: Type Dealing No Start Date Area

 Surveyed
 16/06/2013
 23.52000 HA

 Granted
 10/07/2012
 24.00000 HA

 Applied For
 13/11/2011
 24.00000 HA

#### SHIRE DETAILS

 Shire
 Shire No
 Start
 End
 Area

 ASHBURTON SHIRE
 250
 21/11/2011
 23.52000 HA





#### MINING TENEMENT SUMMARY REPORT

MINING LEASE 08/496 Status: Live

#### TENEMENT SUMMARY

**Received**: 12/10/2012 15:30:00 **Commence**: 18/04/2013

**Term Granted: 21 Years** 

#### **CURRENT HOLDER DETAILS**

Name and Address

KUMINA IRON PTY LTD

LAND ACCESS TEAM, PO BOX 1095, CANNING BRIDGE LPO, APPLECROSS, WA, 6153,

xxxxxxxxx@mrl.com.au, xxxxxxx600

#### **DESCRIPTION**

Locality: PEEDAMULLA

**Datum:** Datum situated at GDA Coordinates Zone 50

7590590.000N 303214.00E

**Boundary:** thence 7591352.000N 303285.000E thence

7591784.000N 303123.000E thence 7591791.123N 303534.902E thence 7590599.000N 303543.000E Back

to Datum

Area: Type Dealing No Start Date Area

 Surveyed
 16/06/2013
 36.26000 HA

 Granted
 18/04/2013
 37.00000 HA

 Applied For
 04/10/2012
 37.00000 HA

#### SHIRE DETAILS

 Shire
 Shire No
 Start
 End
 Area

 ASHBURTON SHIRE
 250
 12/10/2012
 36.26000 HA



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#### **APPENDIX B - CPS 5707/1 & CPS 5708/1 (EXPIRED)**

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#### **CLEARING PERMIT**

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:

5707/1

**Duration of Permit:** 

From 5 October 2013 to 5 October 2018

Permit Holder:

Yarri Mining Pty Ltd

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

#### PART I - CLEARING AUTHORISED

#### 1. Land on which clearing is to be done

General Purpose Lease 08/80

#### 2. Purpose for which clearing may be done

Clearing for the purposes of supporting infrastructure for mining operations.

#### 3. Area of Clearing

The Permit Holder must not clear more than 58 hectares of native vegetation. All clearing must be within the area cross-hatched yellow on attached Plan 5707/1.

#### 4. Type of Clearing Authorised

The Permit Holder shall not clear native vegetation unless the purpose for which the clearing is authorised is enacted within two months of the authorised clearing being undertaken.

#### 5. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

#### PART II - ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

#### 6. Weed Control

When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds*:

- (i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (ii) ensure that no weed-affected soil, mulch, fill or other material is brought into the area to be cleared; and
- (iii) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.



#### **CLEARING PERMIT**

Granted under section 51E of the Environmental Protection Act 1986

**Purpose Permit number:** 

5808/1

**Duration of Permit:** 

From 16 November 2013 to 16 November 2018

Permit Holder:

Yarri Mining Pty Ltd

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

#### PART I - CLEARING AUTHORISED

#### 1. Land on which clearing is to be done

Mining Lease 08/488. Mining Lease 08/496.

#### 2. Purpose for which clearing may be done

Clearing for the purpose of mineral production.

#### 3. Area of Clearing

The Permit Holder must not clear more than 37.17 hectares of native vegetation. All clearing must be within the area cross-hatched yellow on attached Plan 5808/1.

#### 4. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

#### 5. Soil Erosion Management

The Permit Holder shall not clear native vegetation unless the purpose for which the clearing is authorised begins within 1 month of the clearing being undertaken.

#### PART II - ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

#### 6. Weed Control

When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds*:

- (i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (ii) ensure that no weed-affected soil, mulch, fill or other material is brought into the area to be cleared;and
- (ii) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

#### PART III - RECORD KEEPING AND REPORTING

#### 7. Records to be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

In relation to the clearing of native vegetation authorised under this Permit,

- the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
- (ii) the date that the area was cleared:
- (iii) the size of the area cleared (in hectares); and
- (iv) purpose for which clearing was undertaken.

#### 8. Reporting

- (a) The Permit Holder shall provide a report to the Director Operations, Environment, Department of Mines and Petroleum by 31 July each year for the life of this permit, demonstrating adherence to all conditions of this permit, and setting out the records required under Condition 7 of this permit in relation to clearing carried out between 1 July and 30 June of the previous financial year.
- (b) Prior to 16 November 2018, the Permit Holder must provide to the Director Operations, Environment, Department of Mines and Petroleum a written report of records required under Condition 7 of this Permit where these records have not already been provided under Condition 8(a) of this Permit.

#### **DEFINITIONS**

The following meanings are given to terms used in this Permit:

fill means material used to increase the ground level, or fill a hollow;

*mulch* means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

weed/s means any plant -

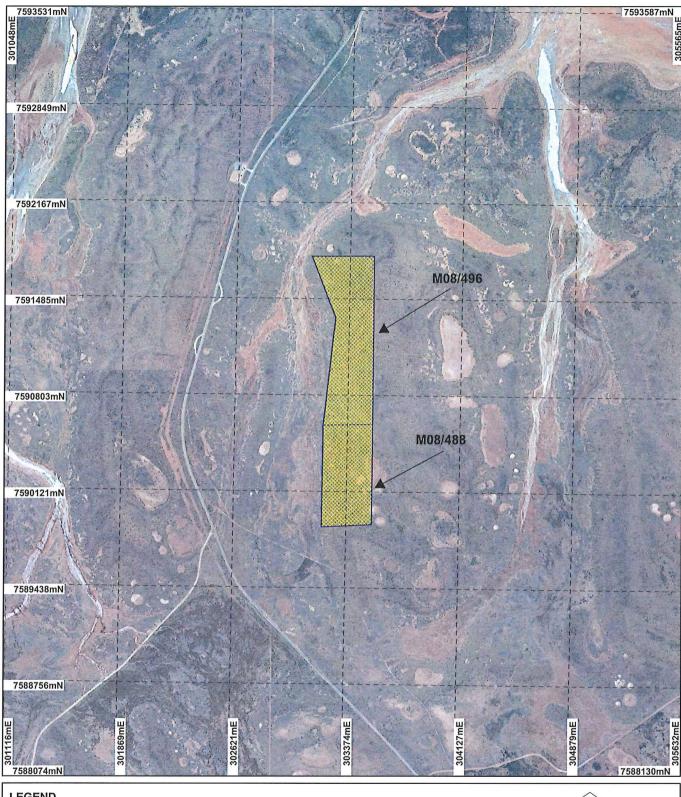
- (a) that is a declared pest under section 22 of the Biosecurity and Agriculture Management Act 2007; or
- (b) published in the Department of Environment and Conservation Regional Weed Assessments, regardless of ranking; or
- (c) not indigenous to the area concerned.

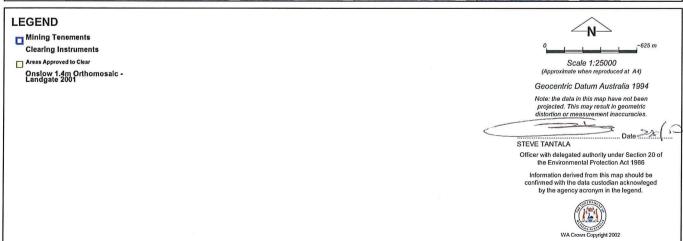
Steve Tantala
DIRECTOR OPERATIONS
ENVIRONMENT
DEPARTMENT OF MINES AND PETROLEUM

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

24 October 2013

## **PLAN 5808/1**





#### PART III - RECORD KEEPING AND REPORTING

#### 7. Records to be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

In relation to the clearing of native vegetation authorised under this Permit,

- (i) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
- (ii) the date that the area was cleared;
- (iii) the size of the area cleared (in hectares); and
- (iv) purpose for which clearing was undertaken.

#### 8. Reporting

- (a) The Permit Holder shall provide a report to the Director Operations, Environment, Department of Mines and Petroleum by 1 October each year for the life of this permit, demonstrating adherence to all conditions of this permit, and setting out the records required under Condition 7 of this permit in relation to clearing carried out between 1 July and 30 June of the previous financial year.
- (b) Prior to 5 October 2018, the Permit Holder must provide to the Director Operations, Environment, Department of Mines and Petroleum a written report of records required under Condition 7 of this Permit where these records have not already been provided under Condition 8(a) of this Permit.

#### **DEFINITIONS**

The following meanings are given to terms used in this Permit:

fill means material used to increase the ground level, or fill a hollow;

*mulch* means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

weed/s means any plant -

- (a) that is a declared pest under section 22 of the Biosecurity and Agriculture Management Act 2007; or;
- (b) published in the former Department of Environment and Conservation Regional Weed Assessments, regardless of ranking; or
- (c) not indigenous to the area concerned.

Steve Tantala

**DIRECTOR OPERATIONS** 

**ENVIRONMENT** 

DEPARTMENT OF MINES AND PETROLEUM

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

12 September 2013

### **PLAN 5707/1**



#### **LEGEND**

Mining Tenements
Clearing Instruments

Areas Approved to Clear

Onslow 1.4m Orthomosaic - Landgate 2001



Geocentric Datum Australia 1994

Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.



Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

Information derived from this map should be confirmed with the data custodian acknowleged by the agency acronym in the legend.





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#### APPENDIX C - KUMINA IRON PTY LTD ASIC COMPANY EXTRACT

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# **Current & Historical Company Extract**

Name: KUMINA IRON PTY LTD

ACN: 169 725 973

Date/Time: 15 October 2019 AEST 07:16:39 PM

This extract contains information derived from the Australian Securities and Investments Commission's (ASIC) database under section 1274A of the Corporations Act 2001.

Please advise ASIC of any error or omission which you may identify.

# EXTRACT

Organisation Details		Document Number
Current Organisation Details	1	
Name:	KUMINA IRON PTY LTD	7EAF26146
ACN:	169 725 973	
ABN:	76169725973	
Registered in:	Western Australia	
Registration date:	23/05/2014	
Next review date:	23/05/2020	
Name start date:	22/10/2018	
Status:	Registered	
Company type:	Australian Proprietary Company	
Class:	Limited By Shares	
Subclass:	Proprietary Company	
Previous Organisation Detai	ls from 23/05/2014 to 21/10/2018	
Name:	MINERAL CONSTRUCTION PTY LTD	2E0560616
Name start:	23/05/2014	
Status:	Registered	
Company type:	Australian Proprietary Company	
Class:	Limited By Shares	
Subclass:	Proprietary Company	

Address Details		Document Number
Current		
Registered address: Start date:	1-7 Sleat Road, APPLECROSS WA 6153 23/05/2014	2E0560616
Principal Place Of Business address:	1-7 Sleat Road, APPLECROSS WA 6153	2E0560616
Start date:	23/05/2014	

Officeholders and Other Role	es	Document Number
Director		
Name:	CHRISTOPHER JAMES ELLISON	7E7884076
Address:	1-7 Sleat Road, APPLECROSS WA 6153	
Born:	26/06/1957, DUNEDIN, NEW ZEALAND	
Appointment date:	23/05/2014	
Name:	MARK GREGORY WILSON	7EAJ67232
Address:	50 Rossello Lane, SUBIACO WA 6008	
Born:	03/08/1967, SYDNEY, NSW	
Appointment date:	06/12/2018	
Secretary		
Name:	DEREK ANDREW OELOFSE	7EAF10769
Address:	Unit 1, 1-7 Sleat Road, APPLECROSS WA 6153	
Born:	15/06/1960, JOHANNESBURG, SOUTH AFRICA	
Appointment date:	04/10/2018	
Name:	MARK GREGORY WILSON	7EAJ67232

7E7884076

Address: 50 Rossello Lane, SUBIACO WA 6008

Born: 03/08/1967, SYDNEY, NSW

Appointment date: 27/11/2018

**Previous Director** 

Name: BRUCE ALBERT GOULDS

Address: 1-7 Sleat Road, APPLECROSS WA 6153

Born: 09/08/1957, FREMANTLE, WA

Appointment date: 23/05/2014 Cease date: 06/12/2018

#### **Share Information**

#### **Share Structure**

Class	Description	Number issued	Total amount paid	Total amount unpaid	Document number
ORD	ORDINARY SHARES	1	1.00	0.00	2E0560616

#### **Members**

Note: For each class of shares issued by a proprietary company, ASIC records the details of the top twenty members of the class (based on shareholdings). The details of any other members holding the same number of shares as the twentieth ranked member will also be recorded by ASIC on the database. Where available, historical records show that a member has ceased to be ranked amongst the top twenty members. This may, but does not necessarily mean, that they have ceased to be a member of the company.

Name: MINERAL RESOURCES LIMITED

ACN: 118 549 910

Address: 1-7 Sleat Road, APPLECROSS WA 6153

Class	Number held	Beneficially held	Paid	Document number
ORD	1	yes	FULLY	2E0560616

#### **Documents**

Note: Where no Date Processed is shown, the document in question has not been processed. In these instances care should be taken in using information that may be updated by the document when it is processed. Where the Date Processed is shown but there is a zero under No Pages, the document has been processed but a copy is not yet available.

Date received	Form type	Date processed	Number of pages	Effective date	Document number
23/05/2014	201C Application For Registration As A Proprietary Company	23/05/2014	3	23/05/2014	2E0560616
03/06/2014	484E Change To Company Details Appointment Or Cessation Of A Company Officeholder	03/06/2014	2	23/05/2014	2E0595450

18/04/2016	484A1 Change To Company Details Change Officeholder Name Or Address	18/04/2016	2	18/04/2016	7E7884076
16/10/2018	484E Change To Company Details Appointment Or Cessation Of A Company Officeholder	16/10/2018	2	16/10/2018	7EAF10769
22/10/2018	205A Notification Of Resolution Changing Company Name	22/10/2018	2	22/10/2018	7EAF26146
30/11/2018	484E Change To Company Details Appointment Or Cessation Of A Company Officeholder	30/11/2018	2	30/11/2018	7EAG69975
02/01/2019	484E Change To Company Details Appointment Or Cessation Of A Company Officeholder	02/01/2019	2	02/01/2019	7EAH46598
03/01/2019	484E Change To Company Details Appointment Or Cessation Of A Company Officeholder	03/01/2019	2	03/01/2019	7EAH47800
21/03/2019	484A1 Change To Company Details Change Officeholder Name Or Address	21/03/2019	2	21/03/2019	7EAJ67232

<sup>\*\*\*</sup>End of Extract of 3 Pages\*\*\*



# APPENDIX C – ASHBURTON INFRASTRUCTURE – FLORA AND VEGETATION ASSESSMENT (PROVIDED SEPERATELY)

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# APPENDIX D – ASHBURTON INFRASTRUCTURE – TERRESTRIAL FAUNA AND SHORT RANGE ENDEMIC INVERTEBRATE FAUNA ASSESSMEN (PROVIDED SEPERATELY)

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