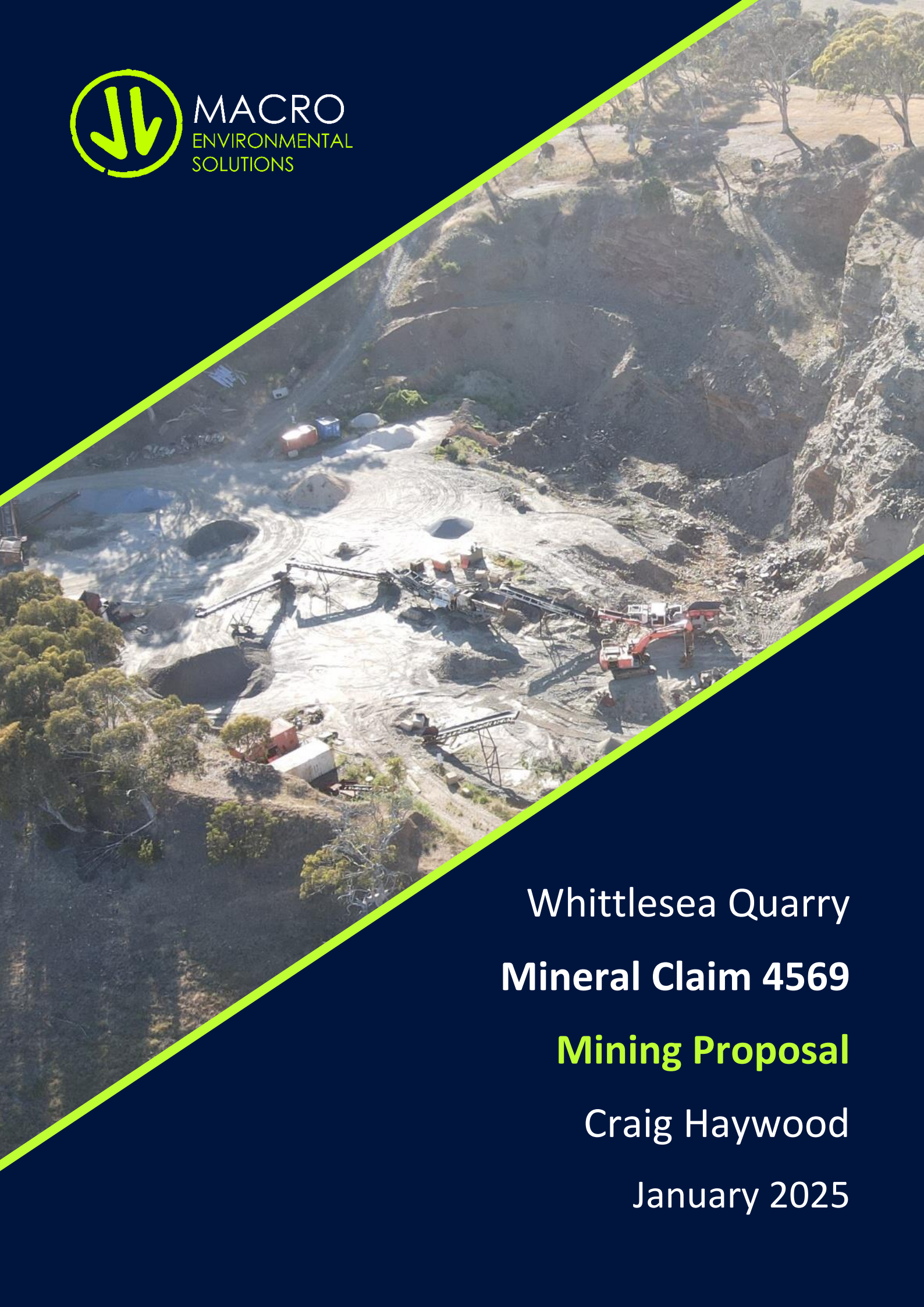




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Whittlesea Quarry
Mineral Claim 4569

Mining Proposal

Craig Haywood

January 2025

REVISION HISTORY

| Version | Prepared By | Completion Date | Description |
|---------|-------------------------------|-----------------|--------------------------------|
| 1.0 | Macro Environmental Solutions | 23 January 2025 | Provided to client for review. |

Macro Environmental Solutions (Macro) is an Adelaide based company, and the Whittlesea Quarry is located near Myponga on the western Fleurieu Peninsula of South Australia.

Macro and Craig Haywood wish to acknowledge the custodians of the land this work was undertaken on, the Kaurna people, and their Elders past, present and emerging. We acknowledge and respect their continuing culture and the contribution they make to the life of these regions.



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SITE SUMMARY

| | |
|-------------------------|----------------------------|
| Operation name | Whittlesea Quarry |
| Tenement number | Mineral Claim (MC) 4569 |
| Tenement holder | Craig William Haywood |
| Tenement holder contact | craighaywood89@bigpond.com |
| Tenement operators | Craig William Haywood |

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Abbreviations

| |
|---|
| <i>ADP – Approved Development Program</i> |
| <i>AHD – Australian Height Datum</i> |
| <i>ELVIS – Elevation and depth – Foundation spatial data platform</i> |
| <i>ha – hectare</i> |
| <i>km – Kilometre(s)</i> |
| <i>L/s – Litres per second</i> |
| <i>mm/m – millimetre(s)/metre(s)</i> |
| <i>m²/m³ – metres squared/cubed</i> |
| <i>PEPR – Program for Environment Protection and Rehabilitation</i> |
| <i>RSWL – Reduced Standing Water Level</i> |
| <i>UAV – Unmanned Aerial Vehicle.</i> |

Declaration of Accuracy

This declaration is made pursuant to Regulation 84 of the *Mining Regulations 2020*.

I, Craig William Haywood of C Haywood Excavating (ABN 50 513 563 156), the holder of MC 4569, have taken the following steps to review the information and to ensure its accuracy:

- Engaged Macro Environmental Solutions to prepare the document.
- Assisted in the development of the document by providing information in relation to the proposed mining operations.
- Undertook a detailed review of the contents prepared by Macro Environmental Solutions.
- Reviewed and approved all Figures and Drawings provided within the document prepared by Macro Environmental Solutions.

Name: Craig Haywood

Position: Director

Signature: 

Date: 27.01.2025

1 INTRODUCTION

This Mining Proposal (MP) has been prepared to support a Mining Lease Application over Mineral Claim (MC) 4569, in accordance with Section 36 of the *Mining Act 1971*, Regulations 30, 46, 47 and 84 of the *Mining Regulations 2020* and *Ministerial Determination Terms of Reference (TOR) 003 – Extractive mineral quarry lease/licence applications* (version dated 11 December 2020).

This MP has also been produced in alignment with the guidance provided in the following document:

- MG30: Development of environmental objectives for quarrying and mining (December 2020), and
- MG38: New quarry applications (November 2021).

1.1 Operational background

It is understood that historically, SA Water operated a small quarry on the land identified as 5203 Main South Road, Myponga to supply quarry product for the construction of the Myponga Reservoir located to the north.

Following SA Water’s use of the quarry, Extractive Mineral Lease (EML) 5542 was granted to Robert and Shirley Whittlesea for the extraction of extractive minerals on 19 December 1988.

EML 5542 was transferred to the current tenement holder, Craig Haywood, on 11 February 2019.

Operations continue on EML 5542 to the present day in accordance with the Approved Development Program 1995/027, dated 8 May 1995.

To facilitate long term quarrying at the Site, EML 5542 has been ‘over pegged’ by Craig Haywood with MC 4569, which was registered on 30 January 2024.

Details for MC 4569 are provided in **Table 1**.

Table 1 – Mineral Claim 4569 details

| Area | Grant date | Expiry date | Property parcel | Commodities | Property owner |
|---------------|-----------------|-----------------|-----------------|-----------------------|------------------------|
| 8.25 hectares | 30 January 2024 | 29 January 2025 | CT 5878/667 | Siltstone / Sandstone | Shirley May Whittlesea |

The purpose of this MP is to support a subsequent application for an EML over the MC area.

The land of the MC is herein after referred to as the ‘Site’.

1.2 Site location

The Site is located at 5203 Main South Road, Myponga approximately 3.5km south-west of the Myponga township, and approximately 63km south-west of Adelaide (**MP Drawing 1**).

The local area is predominantly used for grazing, rural residential, forestry and potable water storage and supply (at the nearby Myponga Reservoir).

The southern fringe of the Myponga Reservoir is located on the northern side of Main South Road. The Reservoir is separated from MC 4569 by dense native vegetation on the northern side of Main South Road.

The Nixon-Skinner Conservation Park is located on the northern side of Main South Road, approximately 320m from the nearest point of the MC 4569 boundary.

The nearest sensitive receptors also include:

- The landowner's dwelling which is located approximately 220m from the MC 4569 north-east corner,
- dwellings located north-west of MC 4569, with the nearest being approximately 260m from the MC 4569 boundary,
- Heysen's Rest Cabins, a holiday accommodation located approximately 350m from the south-east corner of the MC boundary, and
- a dwelling located approximately 540m from the south-west corner of the MC boundary.

1.3 Land ownership

MC 4569 is located on Allotment 63 in Deposited Plan 57690 in CT 5878/667 (**Attachment 1**).

CT 5878/667 is owned in Fee Simple by Shirley May Whittlesea and is subject to two easements to a Distribution Lessor Corporation, identified as:

- An 11kV SA Power Networks (SAPN) Subtransmission and High Voltage Overhead Line, located approximately 110m from the northern MC boundary.
- A 66kV SAPN Subtransmission and High Voltage Overhead Line, located approximately 20m from the northern MC boundary (Government of South Australia, 2024a).

2 DESCRIPTION OF THE EXISTING ENVIRONMENT

The following Description of the Existing Environment has been prepared in accordance with the requirements of TOR 003.

2.1 Topography and landscape

A map displaying the topography and landscape surrounding the Site is provided in **MP Drawing 2**.

The Site is located in the hilly Mount Lofty Ranges landscape (**Plate 1**). The Site includes mildly steep topography that slopes generally downhill from south-east to north-west.

Elevations at the Site range from approximately 246m AHD at the north-west corner, to approximately 236m AHD at the north-east corner, to approximately 292m AHD at the peak of the hill near the south-west corner, and to another hill peak at approximately 296m AHD near the south-west corner.

The Site is located along a ridgeline running from south-west to north-east to south-west and sits above a dam-lined gully that runs in the same direction adjacent to Main South Road.

The local landscape is a mix of open pastures, Eucalypt woodland and pine plantations, with homesteads on the larger agricultural properties, clusters of rural living blocks and a lease property used as a tourism operation.

The Myponga Reservoir and Main South Road are also predominant features of the landscape (**Plate 2**).

Heritage Agreement (HA) 1580, registered on 18 May 2017, is in place over approximately 30ha of native vegetation located approximately 740m south-east of the south-eastern corner of the MC area.

HA 493, registered on 29 April 1991, is in place over approximately 39ha of native vegetation located approximately 1.6km east of the south-eastern corner of the MC area (Government of South Australia, 2024b).



Plate 1 – The local topography and landscape surrounding MC 4569 to the south



Plate 2 – The local topography and landscape surrounding MC 4569 to the north

2.2 Climate

The Hartley area is classified under Köppen climate classification as a ‘Temperate’ climate class with a ‘distinctly dry (and warm) summer’ (Bureau of Meteorology, 2024a).

The rainfall patterns for the area are considered to be ‘winter dominant’ with between 500 - 800mm rainfall a year on average (Bureau of Meteorology, 2024a).

While the Myponga Bureau of Meteorology (BoM) weather station (site number 023738) is the nearest station, statistics for mean maximum and minimum temperature are only available for the period 1954 – 1967, and no wind speed data is available.

The nearest BoM weather station within a similar climate zone with suitable climate data is located at Parawa (Second Valley Forest AWS) (site number 023875) located approximately 25.4km south-west of the Site (Bureau of Meteorology, 2024b).

Measurements commenced at Parawa station for rainfall, temperature and wind in 1994. Wind measurements ceased in 2010.

A chart showing monthly temperature and rainfall data is provided in **Figure 1**.

In summary:

- The annual mean rainfall is 812.4mm.
- The hottest months are December to March, with January being the hottest month with a mean maximum temperature of 23.7°C.
- The wettest months are from June to July with each month averaging more than 123mm of rain, the highest mean being June with 126.3mm.
- The driest months are December to March which all average less than 40mm, with the lowest average being February with 29.2mm.

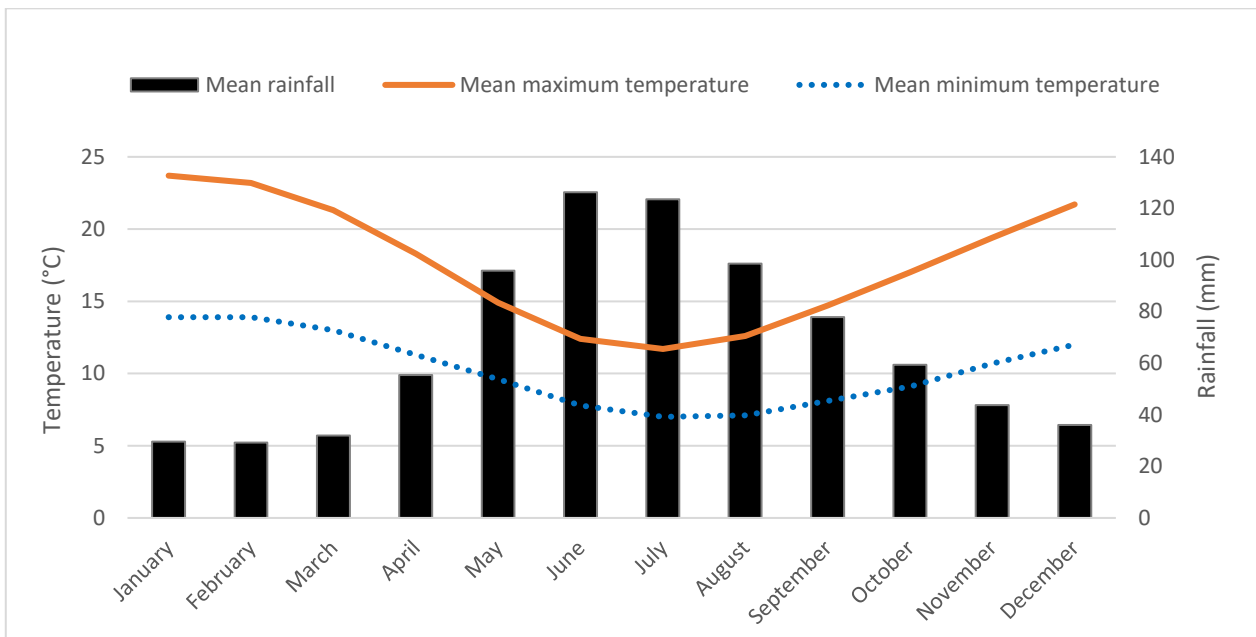


Figure 1 – Mean temperature and rainfall data from Parawa BOM Station (023875)

Wind roses generated from the Parawa BOM Station (023875) based on the 3pm measurements from 1994 to 2010 are provided in **Attachment 2**.

In summary:

- Mean wind speeds are relatively consistent from May through to July ranging from 16.5km/h to 17.1km/h. From August to January average wind speeds increase up to 24.7km/h, and then decrease from February to May, and trough during May at 16.5km/h.
- The total average observations show that the predominant wind direction is from the north-west (approximately 29%), south (approximately 22%) and south-east (approximately 21%) with approximately 72% of all measurements being from these directions. The highest amount of wind speed observations greater than 40km/h are from the north-west.
- From May to September the winds are predominantly from the north-west. From September the winds start to switch from north-west to south and south-east during October and November. Over January to March winds become primarily south-easterlies, before transitioning back to predominantly north-westerlies from March to May.
- Throughout the year, winds from the north and east are uncommon.

Maximum wind gusts, as measured at Parawa BOM Station (023875), range from 78km/h in February to 98km/h in July.

2.3 Topsoil and subsoil

As shown in **MP Drawing 3**, the Soil group over the Site is classified as ‘K – Shallow to moderately deep acidic soils on rock’, specifically ‘K2 - Acidic loam over clay on rock’ (Department of Environment, Water and Natural Resources, 2016).

Undisturbed areas have nearly total grass coverage and trees growing in the soil appear large and healthy.

The soil appears free of acid sulfate, dispersive soils or highly erosive soils that have the potential to impact the rehabilitation and closure.

An inspection of a cut-out of the hill near where soil had not been stripped from the crest was undertaken (**Plate 3**) and it was identified that the soil horizons vary in depth over short distances. Based on the visible soil horizons, it is estimated that there is:

- A layer of topsoil varying from 0.1m – 0.5m in depth (and averaging 0.3m)
- A layer of rocky subsoil from 0.5m – 0.9m in depth (and averaging 0.7m).

Approximately 20,000m² of area is proposed to be stripped of soil over the life of the mine and therefore material available for rehabilitation is estimated to be 20,000m³.

Soil from EML 5542 has been stripped ahead of mining and stockpiled along the western and southern sides of the quarry pit ready for rehabilitation (**Plate 4**). The soil is stockpiled in trapezium shaped windrows that are on average approximately 5m at the bottom base, 2m at the top base and 1.5m in height, and have a cross-section of 5.25m².

The total length of the windrows at the Site is approximately 211m and the volume of soil currently stockpiled on the Site is therefore approximately 1,108m³.

Additional soil is located in stockpiles near the southern quarry pit face and safety bunds around the operation. This material is estimated to be approximately 500m³ of growth medium for rehabilitation.

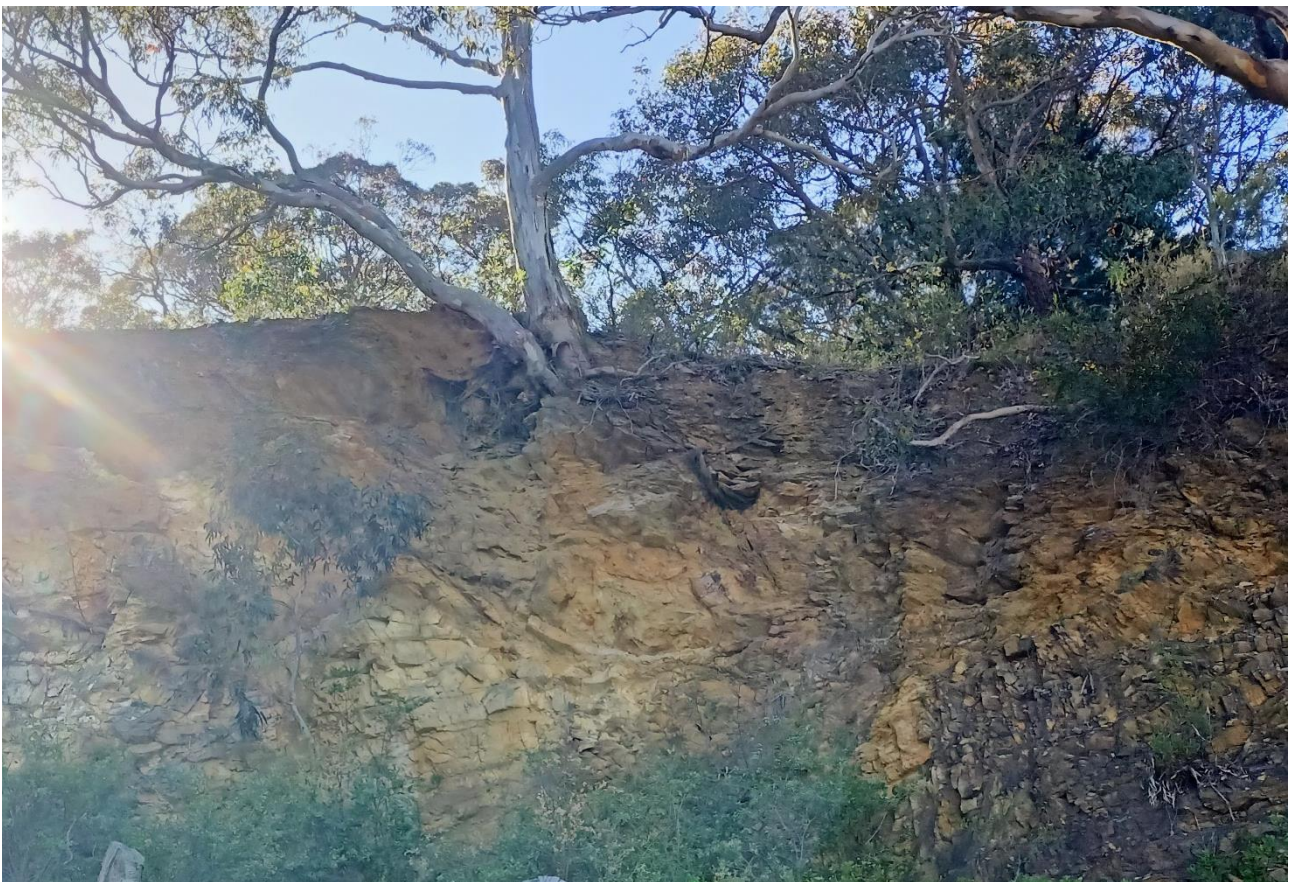


Plate 3 – The soil profile viewed into a pre-existing cut into the hill face on MC 4569



Plate 4 – Soil windrow along the EML 5542 western boundary

2.4 Geological environment

As shown on **MP Drawing 4** the majority of the Site lies within the Saddleworth Formation and borders the Stonyfell Quartzite geology that runs north-east to south-west along the elevated ridgeline.

The stratigraphic description for the Saddleworth Formation, as described in the 100K Geology - map unit symbology on SARIG, is 'Mudstone; siltstone; shale, partly carbonaceous'.

The stratigraphic description for the Stonyfell Quartzite (which is expected to form a very minor quantity of the material extracted or none at all), as described in the 100K Geology - map unit symbology on SARIG, is 'Quartzite, feldspathic, with shale interbeds; silty sandstone in part schistose and calcareous' within the Stonyfell Quartzite (Government of South Australia, 2024a).

The regional geology is identified as the Inman Valley Land System (INV) which occurs within the floors of Permian age glacial valleys. Sediments deposited include sandstones and unconsolidated sandy clays, heavy clays and calcareous clays, weakly lithified to shales (Government of South Australia, 2024c).

The proposed mining operations are proposed to be contained to the depth of the current pit on EML 5542 and the geology is expected to be homogenous throughout the proposed mining areas and therefore no further exploration drilling has been undertaken.

2.4.1 Geological monument

A review of the 'Geological Monuments' spatial layer on SARIG showed that no geological monuments are located at or within 5km of the Site.

2.5 Geohazards

There are no known minerals that may occur in material to be quarried that have the potential to pollute the surrounding environment and/or are hazardous to human health.

The Site area has an earthquake hazard factor of 0.11 or less and is therefore not considered to be in an earthquake hazard zone (Government of South Australia, 2012).

The nearest earthquake to the Site, as shown in the SARIG 'All earthquakes' layer was a magnitude 1.1 earthquake approximately 2km to the north-east in 2009.

The proposed mine plans incorporate benches with maximum 10m high faces that are laid back on a slope of 5h:1v to reduce potential geotechnical stability issues.

The resource does not have asbestiform or radioactive minerals and may include some proportion of silicate minerals.

2.6 Groundwater

2.6.1 Groundwater users

MP Drawing 5 shows details of local groundwater well locations and salinity levels.

The Site is located within the Western Mount Lofty Ranges Prescribed Water Resources Area under the *Landscape South Australia Act 2019* (Government of South Australia, 2024a).

Two groundwater wells (6527-1047 and 6527-1029) are located within the Certificate of Title area, but outside of the MC area. The purpose of the wells as shown on WaterConnect (Government of South Australia, 2024d) are for irrigation use.

All recorded Total Dissolved Solids (TDS) in the wells on the CT range from 450 mg/L (6527-1047) to 1620 mg/L (6527-1029), which is good quality water suitable for all agricultural uses, and the salinity in well 6527-1047 is low enough for use as potable water.

The shallow groundwater yield in the local area as shown on SARIG ranges from 5 L/s to 25 L/s.

Within 5km of the Site the purpose of the wells is shown on WaterConnect as domestic, stock and irrigation use.

2.6.2 Groundwater dependent ecosystems

A map showing Groundwater Dependent Ecosystems (GDEs) within the area is provided in **MP Drawing 6**.

A low potential terrestrial GDE is located approximately 25m to the south of the MC area comprising *Eucalyptus obliqua* woodland.

A low potential aquatic GDE is located in the centre of the northern boundary of the MC area, running from the northern boundary of the Site to the east near parallel to Main South Road.

A low potential terrestrial GDE is located approximately from 350m to the north of the Site comprising *Eucalyptus obliqua* (mixed) woodland.

A moderate potential terrestrial GDE is located approximately 520m north-east of the Site comprising *Eucalyptus fasciculosa* (mixed) woodland.

2.6.3 Groundwater level assessment

Groundwater level data was sourced from WaterConnect (Government of South Australia, 2024d) to assess the groundwater levels below the Site.

Two groundwater wells are located on the property, but outside of the MC area (6527-1029 and 6527-1047) (**MP Drawing 7**).

Well 6527-1047 is located approximately 130m north of the MC area and was measured in April 1991. The depth to water was 33m and the reduced standing water level (RSWL) was therefore 147m AHD.

Well 6527-1029 is located approximately 200m north-east of the MC area and was measured in June 1984. The depth to water was 15m and the RSWL was therefore 225m AHD.

Well 6527-1025 is located approximately 410m east of the MC area and was measured in June 1984. The depth to water was 7m and the RSWL was therefore 243m AHD.

As the proposed lowest elevation of quarrying operations is 255m AHD, the minimum buffer to groundwater is expected to be approximately 12m based on the highest local RSWL measured at 6527-1025.

2.7 Surface water

A map showing the location of sediment retention dams, water courses, waterbodies and watershed basins within the local area is provided in **MP Drawing 8**.

The watershed divide occurs between the eastern and western pits. The eastern pit shares a water shed with the Myponga reservoir located to the north-east and the western pit is at the head waters of a catchment that extends downhill towards the south-west.

There are no drainage lines shown within the MC 4569 area, but a pathway between the ancillary operating area and a drainage line to the north of the Site was identified at the Site. A sediment retention dam is located near the EML 5542 boundary to intercept water leaving the existing site.

A model of the surface water flows within the MC area based on a Digital Terrain Model (DTM) developed from drone imagery taken on 15 November 2025 is provided in **MP Drawing 9**.

Surface flows from the majority of the active mining area (western pit) flow internally into the pit.

Flows from the ancillary mining area flow towards the northern boundary into a sediment retention dam. Water that overflows from the sediment retention dam then flows down to a dam within the property area.

Surface water flows on the eastern side of MC 4569 flows from south to north towards a dam located on the property.

A search undertaken on SARIG on 19 November 2024 confirmed that the Site is not located within:

- the Murray-Darling Basin Boundary as prescribed by the *Water Act 2007*
- a prescribed wells area.

The Site is located within the Western Mount Lofty Ranges Prescribed Water Resources Area.

There are no Prescribed Water Courses within 5km of the Site.

The eastern portion of the MC area is located within Mount Lofty Ranges Water Protection Area with Priority Areas (Government of South Australia, 2024a).

2.8 Vegetation, weeds, and plant pathogens

This section is supported by an *Ecological Baseline Survey* conducted by GBS consulting (GBS) on 13 January 2025. The *Ecological Baseline Survey Report* is provided as **Attachment 3**.

A summary of the observations recorded within MC 4569 during the *Ecological Baseline Survey* includes:

- 8 native flora species and
- 14 introduced flora species, and
- 0 Threatened Ecological Communities.

2.8.1 Native vegetation

MP Drawing 10 provides details of the Eucalypt woodland patch located to the east of the existing pit, and scattered trees either permitted to be cleared or without an existing permit.

A low-potential terrestrial GDE is located approximately 25m to the south of the MC area comprising *Eucalyptus obliqua* woodland.

Two Eucalypt trees have been cleared from the existing pit under the existing approved program.

Two Eucalypt trees approved for clearance remain and will be removed during Stage 1 of the proposed operations.

Methods for identifying the species of native vegetation present at the Site were as follows:

- Conduct an *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search using the online interactive tool (Department of Climate Change, Energy, the Environment and Water (DCCEEW), 2024a) on 19 November 2024 (**Attachment 4**). The search was conducted across the tenement and included a buffer of 5km outside of the tenement boundaries.
- Conduct a search of the Biological Database of South Australia (BDBSA) through the Nature Maps site (Government of South Australia, 2024b) within 5km of the Site.
- Undertake an *Ecological Baseline Survey* within the proposed mining areas (**Attachment 3**).

2.8.1.1 Threatened plant species

The EPBC Act Protected Matters Search identified 19 listed threatened flora species (**Table 2**).

Table 2 – Threatened flora species identified in the EPBC Act Protected Matters Search

| Species name | Common name | Threatened category | Presence rank | Buffer status |
|---|---|-----------------------|--|------------------|
| <i>Veronica derwentiana</i> subsp. <i>homalodonta</i> | Mount Lofty Speedwell | Critically Endangered | Species or species habitat likely to occur within area | Buffer area only |
| <i>Pterostylis bryophila</i> | Hindmarsh Valley Greenhood | Critically Endangered | Species or species habitat may occur within area | Buffer area only |
| <i>Hibbertia tenuis</i> | null | Critically Endangered | Species or species habitat likely to occur within area | Tenement area |
| <i>Prasophyllum murfetii</i> | Fleurieu Leek Orchid | Critically Endangered | Species or species habitat likely to occur within area | Tenement area |
| <i>Correa eburnea</i> | Deep Creek Correa | Endangered | Species or species habitat may occur within area | Buffer area only |
| <i>Allocasuarina robusta</i> | Mount Compass Oak-bush | Endangered | Species or species habitat likely to occur within area | Buffer area only |
| <i>Prasophyllum pruinatum</i> | Plum Leek-orchid | Endangered | Species or species habitat may occur within area | Tenement area |
| <i>Caladenia tensa</i> | Greencomb Spider-orchid, Rigid Spider-orchid | Endangered | Species or species habitat may occur within area | Tenement area |
| <i>Eucalyptus paludicola</i> | Mount Compass Swamp Gum, Fleurieu Swamp Gum, Marsh Gum | Endangered | Species or species habitat may occur within area | Tenement area |
| <i>Thelymitra matthewsii</i> | Spiral Sun-orchid | Endangered | Species or species habitat likely to occur within area | Tenement area |
| <i>Euphrasia collina</i> subsp. <i>osbornii</i> | Osborn's Eyebright | Endangered | Species or species habitat may occur within area | Tenement area |
| <i>Thelymitra epipactoides</i> | Metallic Sun-orchid | Endangered | Species or species habitat may occur within area | Tenement area |
| <i>Prasophyllum pallidum</i> | Pale Leek-orchid | Vulnerable | Species or species habitat likely to occur within area | Tenement area |
| <i>Glycine latrobeana</i> | Clover Glycine, Purple Clover | Vulnerable | Species or species habitat likely to occur within area | Tenement area |
| <i>Caladenia concolor</i> | Crimson Spider-orchid, Maroon Spider-orchid | Vulnerable | Species or species habitat may occur within area | Tenement area |
| <i>Dodonaea procumbens</i> | Trailing Hop-bush | Vulnerable | Species or species habitat may occur within area | Tenement area |
| <i>Correa calycina</i> | Hindmarsh Correa | Vulnerable | Species or species habitat known to occur within area | Tenement area |
| <i>Olearia pannosa</i> subsp. <i>pannosa</i> | Silver Daisy-bush, Silver-leaved Daisy, Velvet Daisy-bush | Vulnerable | Species or species habitat known to occur within area | Tenement area |
| <i>Senecio macrocarpus</i> | Large-fruit Fireweed, Large-fruit Groundsel | Vulnerable | Species or species habitat may occur within area | Tenement area |

To confirm the presence of threatened vegetation in the local area, the BDBSA was accessed through the Nature Maps site (Government of South Australia, 2024b).

A search of the BDBSA was undertaken for observations of threatened native flora listed under State or National legislation within 5km of the Site.

The search returned 319 separate records for 66 different listed threatened flora species (**Table 3**).

The location of listed threatened flora species in relation to the Site is provided in **Figure 2**.

Table 3 – State and National listed threatened flora species registered on the BDBSA within 5km of the Site

| Species name | Common name | EPBC Act listing | NPW Act listing |
|---|-----------------------------|------------------|-----------------|
| <i>Allocasuarina robusta</i> | Mount Compass Oak-bush | Endangered | Endangered |
| <i>Amphibromus archeri</i> | Pointed Swamp Wallaby-grass | - | Rare |
| <i>Anogramma leptophylla</i> | Annual Fern | - | Rare |
| <i>Austrostipa oligostachya</i> | Fine-head Spear-grass | - | Endangered |
| <i>Blechnum nudum</i> | Fishbone Water-fern | - | Rare |
| <i>Blechnum wattsii</i> | Hard Water-fern | - | Rare |
| <i>Brachyscome parvula</i> | Coast Daisy | - | Rare |
| <i>Caladenia leptochila ssp. leptochila</i> | Narrow-lip Spider-orchid | - | Rare |
| <i>Caladenia reticulata</i> | Veined Spider-orchid | - | Rare |
| <i>Carex gunniana</i> | Mountain Sedge | - | Rare |
| <i>Cladium procerum</i> | Leafy Twig-rush | - | Rare |
| <i>Correa aemula</i> | Hairy Correa | - | Rare |
| <i>Correa calycina var. calycina</i> | Hindmarsh Correa | Vulnerable | Vulnerable |
| <i>Corybas unguiculatus</i> | Small Helmet-orchid | - | Rare |
| <i>Deyeuxia densa</i> | Heath Bent-grass | - | Rare |
| <i>Diuris brevifolia</i> | Short-leaf Donkey-orchid | - | Endangered |

| Species name | Common name | EPBC Act listing | NPW Act listing |
|--|-----------------------|------------------|-----------------|
| <i>Drosera binata</i> | Forked Sundew | - | Rare |
| <i>Elatine gratioloides</i> | Waterwort | - | Rare |
| <i>Eryngium vesiculosum</i> | Prostrate Blue Devil | - | Rare |
| <i>Eucalyptus fasciculosa</i> | Pink Gum | - | Rare |
| <i>Euphrasia collina ssp. osbornii</i> | Osborn's Eyebright | Endangered | Endangered |
| <i>Gastrodia sesamoides</i> | Potato Orchid | - | Rare |
| <i>Gleichenia microphylla</i> | Coral Fern | - | Rare |
| <i>Glycine latrobeana</i> | Clover Glycine | Vulnerable | Vulnerable |
| <i>Gonocarpus micranthus ssp. micranthus</i> | Creeping Raspwort | - | Rare |
| <i>Gratiola pumilo</i> | Dwarf Brooklime | - | Rare |
| <i>Hypericum japonicum</i> | Matted St John's Wort | - | Rare |
| <i>Hypolepis rugosula ssp. rugosula</i> | Ruddy Ground-fern | - | Rare |
| <i>Isoetes drummondii ssp. drummondii</i> | Plain Quillwort | - | Rare |
| <i>Isotoma fluviatilis ssp. australis</i> | Swamp Isotome | - | Rare |
| <i>Juncus prismatocarpus</i> | Branching Rush | - | Endangered |
| <i>Juncus procerus</i> | Tall Rush | - | Rare |
| <i>Lycopodiella lateralis</i> | Slender Clubmoss | - | Rare |
| <i>Lythrum salicaria</i> | Purple Loosestrife | - | Rare |
| <i>Machaerina laxa</i> | Lax Twig-rush | - | Rare |
| <i>Melaleuca squamea</i> | Swamp Honey-myrtle | - | Rare |
| <i>Mentha diemenica</i> | Slender Mint | - | Rare |
| <i>Microtis atrata</i> | Yellow Onion-orchid | - | Rare |
| <i>Montia australasica</i> | White Purslane | - | Rare |

| Species name | Common name | EPBC Act listing | NPW Act listing |
|--|------------------------|------------------|-----------------|
| <i>Myriophyllum amphibium</i> | Broad Milfoil | - | Rare |
| <i>Myriophyllum crispatum</i> | Upright Milfoil | - | Vulnerable |
| <i>Myriophyllum papillosum</i> | Robust Milfoil | - | Rare |
| <i>Myriophyllum variifolium</i> | Varied Milfoil | - | Rare |
| <i>Olearia glandulosa</i> | Swamp Daisy-bush | - | Vulnerable |
| <i>Phyllangium distylis</i> | Tiny Mitrewort | - | Rare |
| <i>Prasophyllum australe</i> | Austral Leek-orchid | - | Rare |
| <i>Prostanthera chlorantha</i> | Green Mintbush | - | Rare |
| <i>Pterostylis curta</i> | Blunt Greenhood | - | Rare |
| <i>Pterostylis foliata</i> | Slender Greenhood | - | Rare |
| <i>Ptilotus erubescens</i> | Hairy-tails | - | Rare |
| <i>Pultenaea dentata</i> | Clustered Bush-pea | - | Vulnerable |
| <i>Schizaea fistulosa</i> | Narrow Comb-fern | - | Vulnerable |
| <i>Schoenus laevigatus</i> | - | - | Rare |
| <i>Scutellaria humilis</i> | Dwarf Skullcap | - | Rare |
| <i>Sphaerolobium minus</i> | Leafless Globe-pea | - | Rare |
| <i>Spiranthes australis</i> | Austral Lady's Tresses | - | Rare |
| <i>Sprengelia incarnata</i> | Pink Swamp-heath | - | Rare |
| <i>Stellaria angustifolia ssp. tenella</i> | Swamp Starwort | - | Rare |
| <i>Thelymitra flexuosa</i> | Twisted Sun-orchid | - | Rare |
| <i>Thelymitra grandiflora</i> | Great Sun-orchid | - | Rare |
| <i>Thelymitra inflata</i> | Plum Sun-orchid | - | Vulnerable |
| <i>Veronica gracilis</i> | Slender Speedwell | - | Vulnerable |

| Species name | Common name | EPBC Act listing | NPW Act listing |
|--|--------------------|------------------|-----------------|
| <i>Viminaria juncea</i> | Native Broom | - | Rare |
| <i>Xanthorrhoea semiplana ssp. tateana</i> | Tate's Grass-tree | - | Rare |
| <i>Xanthosia tasmanica</i> | Southern Xanthosia | - | Rare |
| <i>Xyris operculata</i> | Tall Yellow-eye | - | Rare |

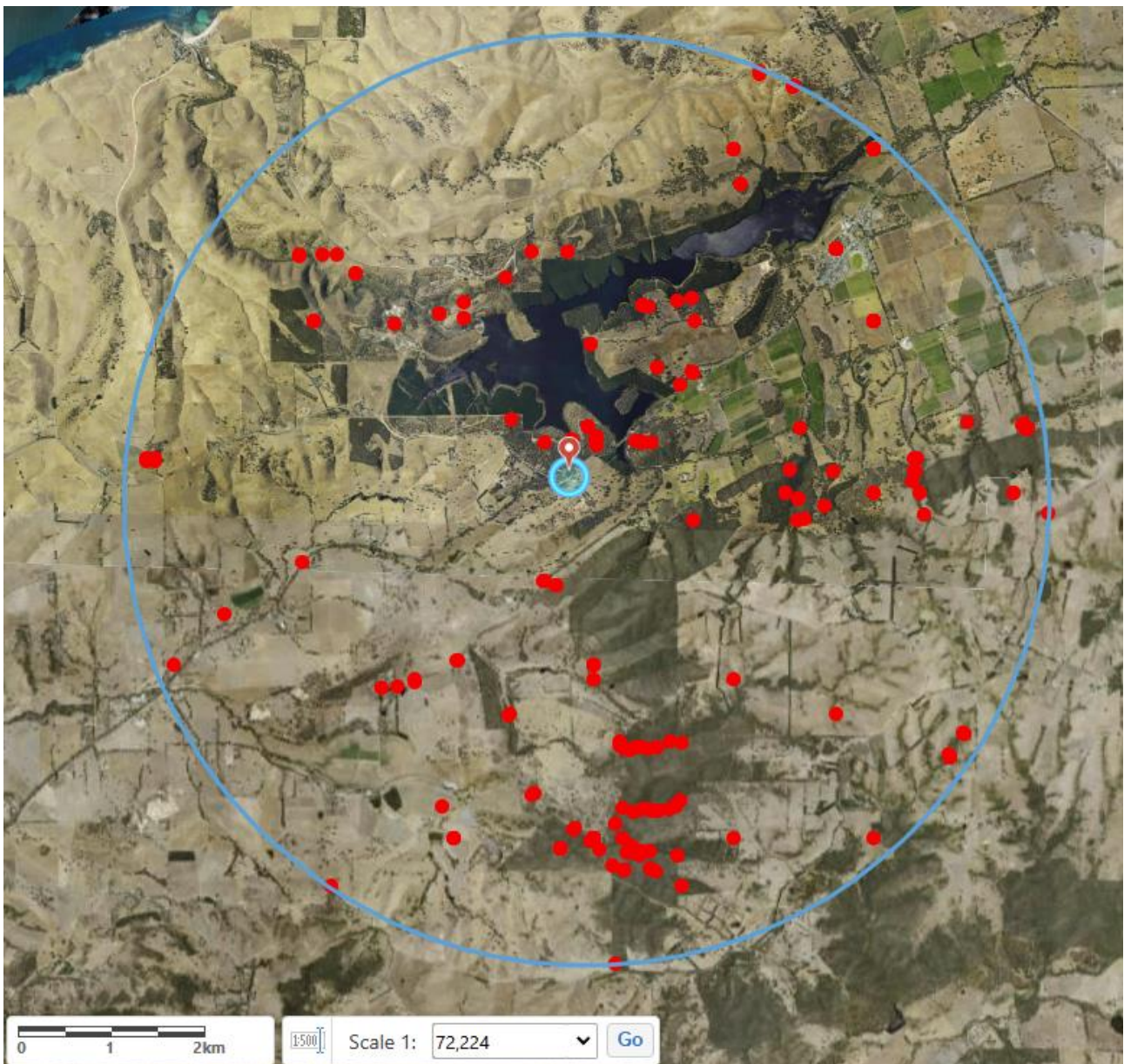


Figure 2 – State and National listed threatened flora species locations

2.8.1.2 Observations from the Ecological Baseline Survey

A vegetation survey using the Bushland Assessment Method (BAM) was undertaken across the MC 4569 area on 13 January 2025.

A list of vegetation species for the Site is provided in **Attachment 3** and includes 8 native vegetation species, 6 of which are located within the disturbance area. None of the observed species are listed as threatened under the EPBC Act (Smith, 2025).

2.8.1.3 Threatened ecological communities

The EPBC Act Protected Matters Search conducted on 19 November 2024 (**Attachment 4**) identified one listed Threatened Ecological Community (TEC) (**Table 4**).

Table 4 – Threatened ecological communities likely to occur within 5km of the Site

| Community name | Threatened category | Presence rank | Buffer status |
|--|-----------------------|--------------------------------------|------------------|
| Swamps of the Fleurieu Peninsula (SFP) | Critically Endangered | Community known to occur within area | Buffer area only |

A map showing the location of the SFP TECs from the *Environment Australia’s Communities of National Environmental Significance database* shows that the nearest SFP TEC is located approximately 2.5km south-west of the Site (**Figure 3**).

A review of the surface water network identified that the nearby TEC is within the Carrickalinga Creek but not hydrologically connected to the Site. The Site is located at the headwaters of a drainage line that follows Main South Road that feeds into Carrickalinga Creek approximately 1.5km downstream of the SFP TEC location. Therefore, there is no surface water pathway between the Site and the nearby SFP TEC.

It was confirmed during the *Ecological Baseline Survey* that no SFP TECs are present at the Site (Smith, 2025).



Figure 3 – SFP TEC location (green box) in reference to the Site (orange dot)

Source: Commonwealth of Australia (2003)

2.8.2 Weeds

To confirm the presence of weeds in the local area, the BDBSA was accessed through the Nature Maps site to create a list of introduced flora (weeds) within 2km of the Site (Government of South Australia, 2024b).

The search identified 165 species of weeds registered within 2km of the Site boundary (**Figure 4**). Of these, 17 species are listed as declared weeds pursuant to the *Landscape South Australia Act 2019*.

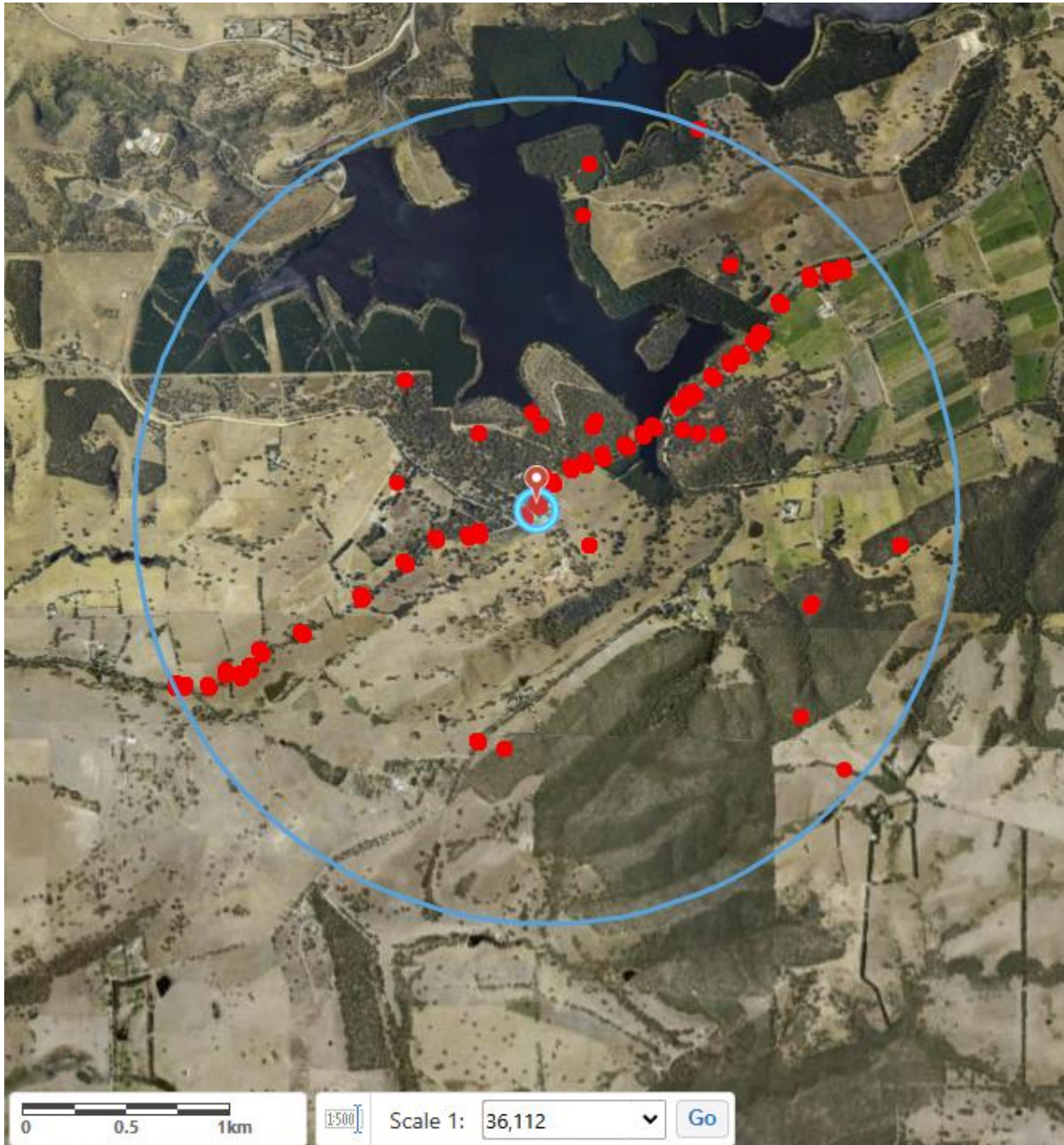


Figure 4 – Location of introduced flora species within 2km (blue ring) of the Site boundary

The introduced flora species listed as declared are as follows:

- *Asparagus asparagoides* f. (*Bridal Creeper*)
- *Asparagus declinatus*
- *Chrysanthemoides monilifera* ssp. *Monilifera* (*Boneseed*)
- *Cortaderia selloana* ssp. *Selloana* (*Common Pampas Grass*)
- *Cytisus scoparius* (*English Broom*)
- *Echium plantagineum* (*Salvation Jane*)
- *Fraxinus angustifolia* ssp. *Angustifolia* (*Narrow-leaved Ash*)
- *Gazania linearis* (*Gazania*)
- *Genista monspessulana* (*Montpellier Broom, Cape Broom*)
- *Marrubium vulgare* (*Horehound*)
- *Moraea flaccida* (*One-leaf Cape Tulip*)
- *Pinus halepensis* (*Aleppo Pine*)
- *Rosa canina* (*Dog Rose*)
- *Rubus anglocandicans*
- *Ulex europaeus* (*Gorse*)
- *Watsonia meriana* cv. *Bulbillifera* (NC) (*Bulbil Watsonia*)
- *Zantedeschia aethiopica* (*White Arum Lily*).

As shown in the *Ecological Baseline Survey Report* in **Attachment 3** (Smith, 2025), 14 species of introduced vegetation were observed to be present at the Site.

Of the species observed at the Site during the inspections and the *Ecological Baseline Survey*, 3 species of environmental weeds are declared under the *Landscape South Australia Act 2019* (Department for Environment and Water, 2020). The declared species include:

- *Chrysanthemoides monilifera* ssp. *Monilifera* (*Boneseed*)*
- *Genista monspessulana* (*Montpellier Broom, Cape Broom*)*
- *Rosa canina* (*Dog Rose*).

*Also listed as a *Weed of National Significance*.

2.8.3 Pathogens

No plant pathogens are known to be present at the Site.

A review of the spatial data displaying the locations of phytophthora infestations within South Australia Government of South Australia (2024b), showed that the nearest phytophthora sighting (not confirmed in a soil test) was recorded to have occurred approximately 3.4kms south of the Site within the Myponga Conservation Park (**MP Drawing 11**).

No tree dieback or obvious signs of plant pathogens have been observed during the fieldwork completed at the Site.

2.9 Fauna

2.9.1 Native fauna

The methods for identifying the presence of native fauna at the Site were as follows:

- Conduct an EPBC Protected Matters Search within 5kms of the Site
- Conduct a search of the BDBSA within 5km of the Site, and
- Undertake a Level 2 fauna survey within the proposed mining areas (*Ecological Baseline Survey*).

The EPBC Act Protected Matters Search conducted on 19 November 2024 (**Attachment 4**) found that no critical habitats exist within the Site but identified 47 listed threatened native fauna species, which are displayed in **Table 5**.

Table 5 – Threatened fauna species listed in the EPBC Act Protected Matters Search

| Species name | Common name | Threatened category | Presence rank | Buffer status |
|--|---|-----------------------|--|------------------|
| Class: Bird | | | | |
| <i>Calidris ferruginea</i> | Curlew Sandpiper | Critically Endangered | Species or species habitat likely to occur within area | Tenement area |
| <i>Numenius madagascariensis</i> | Eastern Curlew, Far Eastern Curlew | Critically Endangered | Species or species habitat may occur within area | Tenement area |
| <i>Melanodryas cucullata cucullata</i> | South-eastern Hooded Robin, Hooded Robin (south-eastern) | Endangered | Species or species habitat likely to occur within area | Tenement area |
| <i>Tringa nebularia</i> | Common Greenshank, Greenshank | Endangered | Species or species habitat likely to occur within area | Tenement area |
| <i>Stagonopleura bella samueli</i> | Western Beautiful Firetail, Beautiful Firetail (Mt Lofty Range and Kangaroo Island) | Endangered | Species or species habitat may occur within area | Tenement area |
| <i>Stipiturus malachurus intermedius</i> | Fleurieu Peninsula Southern Emu-wren, Mount Lofty Southern Emu-wren | Endangered | Species or species habitat likely to occur within area | Tenement area |
| <i>Macronectes giganteus</i> | Southern Giant-Petrel, Southern Giant Petrel | Endangered | Species or species habitat may occur within area | Buffer area only |
| <i>Limosa lapponica baueri</i> | Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit | Endangered | Species or species habitat may occur within area | Buffer area only |
| <i>Zoothera lunulata halmaturina</i> | South Australian Bassian Thrush, Western Bassian Thrush | Endangered | Species or species habitat likely to occur within area | Tenement area |
| <i>Thalassarche cauta</i> | Shy Albatross | Endangered | Species or species habitat likely to occur within area | Buffer area only |
| <i>Botaurus poiciloptilus</i> | Australasian Bittern | Endangered | Species or species habitat likely to occur within area | Tenement area |
| <i>Diomedea sanfordi</i> | Northern Royal Albatross | Endangered | Species or species habitat may occur within area | Buffer area only |
| <i>Rostratula australis</i> | Australian Painted Snipe | Endangered | Species or species habitat likely to occur within area | Tenement area |

| Species name | Common name | Threatened category | Presence rank | Buffer status |
|-------------------------------------|---|---|--|------------------|
| <i>Hylacola pyrrhopygia parkeri</i> | Chestnut-rumped Heathwren (Mt Lofty Ranges) | Endangered (listed as <i>Calamanthus pyrrhopygius parkeri</i>) | Species or species habitat known to occur within area | Tenement area |
| <i>Falco hypoleucos</i> | Grey Falcon | Vulnerable | Species or species habitat likely to occur within area | Tenement area |
| <i>Sternula nereis nereis</i> | Australian Fairy Tern | Vulnerable | Species or species habitat likely to occur within area | Tenement area |
| <i>Macronectes halli</i> | Northern Giant Petrel | Vulnerable | Species or species habitat likely to occur within area | Buffer area only |
| <i>Stagonopleura guttata</i> | Diamond Firetail | Vulnerable | Species or species habitat likely to occur within area | Tenement area |
| <i>Thalassarche carteri</i> | Indian Yellow-nosed Albatross | Vulnerable | Species or species habitat likely to occur within area | Buffer area only |
| <i>Thalassarche steadi</i> | White-capped Albatross | Vulnerable | Species or species habitat known to occur within area | Buffer area only |
| <i>Calidris acuminata</i> | Sharp-tailed Sandpiper | Vulnerable | Species or species habitat may occur within area | Tenement area |
| <i>Neophema chrysostoma</i> | Blue-winged Parrot | Vulnerable | Species or species habitat known to occur within area | Tenement area |
| <i>Gallinago hardwickii</i> | Latham's Snipe, Japanese Snipe | Vulnerable | Species or species habitat likely to occur within area | Tenement area |
| <i>Phoebastria fusca</i> | Sooty Albatross | Vulnerable | Species or species habitat likely to occur within area | Buffer area only |
| <i>Diomedea exulans</i> | Wandering Albatross | Vulnerable | Species or species habitat likely to occur within area | Buffer area only |
| <i>Diomedea epomophora</i> | Southern Royal Albatross | Vulnerable | Species or species habitat may occur within area | Buffer area only |
| <i>Grantiella picta</i> | Painted Honeyeater | Vulnerable | Species or species habitat may occur within area | Tenement area |
| <i>Thalassarche melanophris</i> | Black-browed Albatross | Vulnerable | Species or species habitat likely to occur within area | Buffer area only |
| <i>Ardenna grisea</i> | Sooty Shearwater | Vulnerable | Species or species habitat may occur within area | Buffer area only |
| <i>Hirundapus caudacutus</i> | White-throated Needletail | Vulnerable | Species or species habitat likely to occur within area | Tenement area |
| <i>Calidris canutus</i> | Red Knot, Knot | Vulnerable | Species or species habitat may occur within area | Tenement area |

| Species name | Common name | Threatened category | Presence rank | Buffer status |
|--|---|---------------------|--|------------------|
| <i>Thinornis cucullatus cucullatus</i> | Eastern Hooded Plover, Eastern Hooded Plover | Vulnerable | Species or species habitat known to occur within area | Buffer area only |
| <i>Diomedea antipodensis</i> | Antipodean Albatross | Vulnerable | Species or species habitat likely to occur within area | Buffer area only |
| <i>Thalassarche impavida</i> | Campbell Albatross, Campbell Black-browed Albatross | Vulnerable | Species or species habitat may occur within area | Buffer area only |
| <i>Pachyptila turtur subantarctica</i> | Fairy Prion (southern) | Vulnerable | Species or species habitat known to occur within area | Buffer area only |
| <i>Aphelocephala leucopsis</i> | Southern Whiteface | Vulnerable | Species or species habitat likely to occur within area | Tenement area |
| Class: Mammal | | | | |
| <i>Pteropus poliocephalus</i> | Grey-headed Flying-fox | Vulnerable | Species or species habitat likely to occur within area | Tenement area |
| Class: Reptile | | | | |
| <i>Aprasia pseudopulchella</i> | Flinders Ranges Worm-lizard | Vulnerable | Species or species habitat may occur within area | Tenement area |
| <i>Chelonia mydas</i> | Green turtle | Vulnerable | Species or species habitat may occur within area | Buffer area only |
| Class: Shark | | | | |
| <i>Carcharodon carcharias</i> | Great White Shark | Vulnerable | Species or species habitat known to occur within area | Buffer area only |

The BDBSA was accessed through the Nature Maps site (Government of South Australia, 2024b). A search of the BDBSA was undertaken for observations of native fauna listed under State or National legislation within 5km of the Site (**Figure 5**).

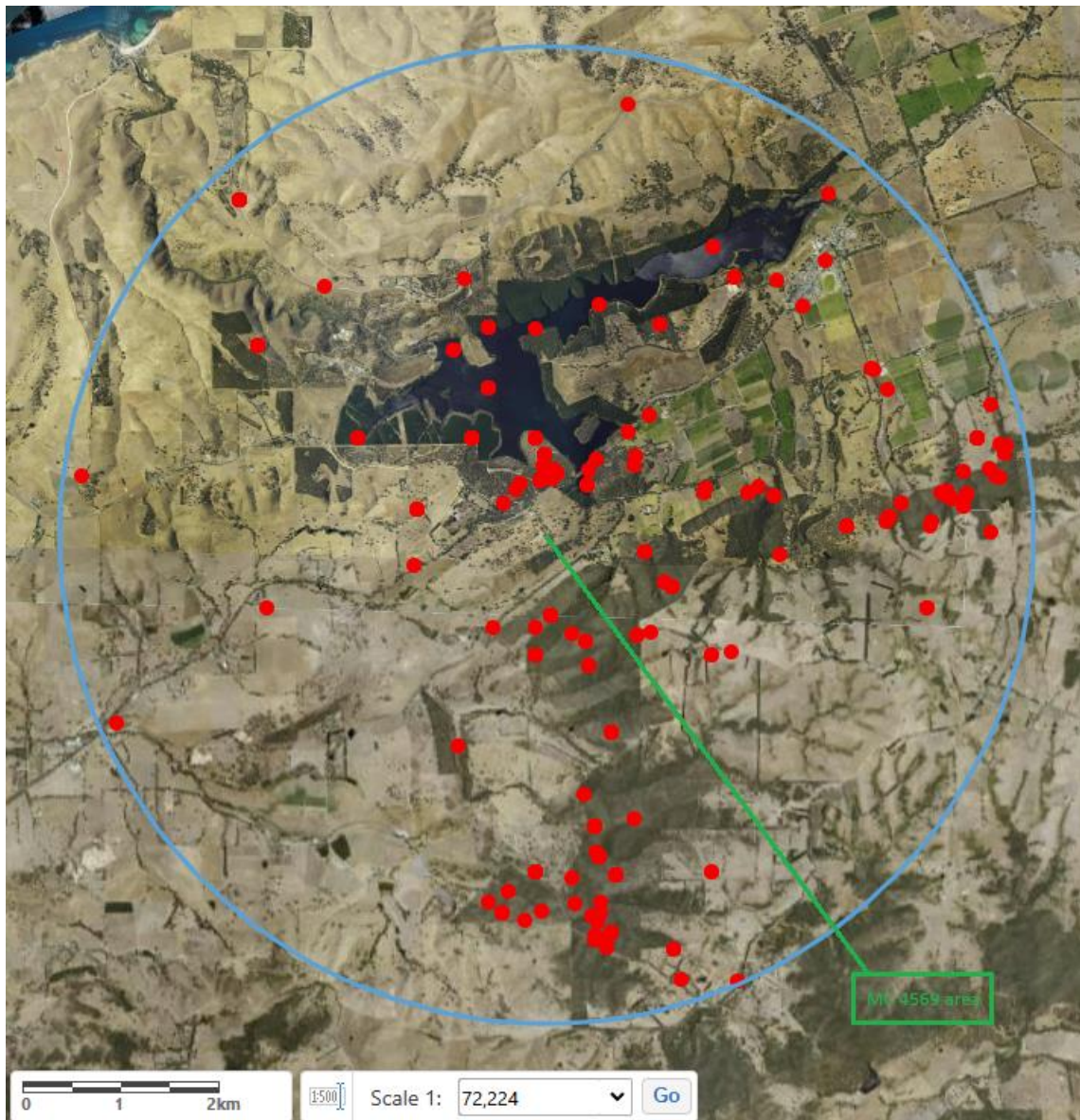


Figure 5 – Location of listed threatened fauna observations within 5km (blue ring) of the Site

The observed listed species recorded included:

- 30 species of birds
- 7 species of mammals
- 2 species of amphibians
- 2 species of reptiles.

Of the native fauna species with reported observations within 5km of the Site, 10 were listed in the EPBC Protected Matters Search as threatened. These are as follows:

- *Melanodryas cucullata cucullata* (South-eastern Hooded Robin): listed as Endangered
- *Tringa nebularia* (Common Greenshank): listed as Endangered
- *Stagonopleura bella Samuelli* (Western Beautiful Firetail): listed as Endangered
- *Zoothera lunulata halmaturina* (South Australian Bassian Thrush): listed as Endangered
- *Thalassarche cauta* (Shy Albatross): listed as Endangered

- *Hylacola pyrrhopygia parkeri* (Chestnut-rumped Heathwren (Mt Lofty Ranges)): listed as Endangered
- *Thalassarche carteri* (Indian Yellow-nosed Albatross): listed as Vulnerable
- *Gallinago hardwickii* (Latham's Snipe, Japanese Snipe): listed as Vulnerable
- *Thinornis cucullatus cucullatus* (Eastern Hooded Plover): listed as Vulnerable
- *Pteropus poliocephalus* (Grey-headed Flying-fox): listed as Vulnerable.

Of the native fauna species with reported observations within 5kms of the Site, 23 were listed in the *National Parks and Wildlife Act 1972* (NPW Act) as follows:

- *Actitis hypoleucos* (Common Sandpiper): listed as Rare
- *Anhinga novaehollandiae novaehollandiae* (Australasian Darter): listed as Rare
- *Antechinus flavipes* (Yellow-footed Antechinus): listed as Vulnerable
- *Arenaria interpres interpres* (Ruddy Turnstone): listed as Rare
- *Biziura lobata menziesi* (Musk Duck): listed as Rare
- *Egretta sacra sacra* (Pacific Reef Heron): listed as Rare
- *Eulamprus heatwolei* (Yellow-bellied Water Skink): listed as Vulnerable
- *Falco peregrinus Macropus* (Peregrine Falcon): listed as Rare
- *Falcunculus frontatus frontatus* (Eastern Shriketit): listed as Rare
- *Gallinago hardwickii* (Latham's Snipe): listed as Rare
- *Hylacola pyrrhopygia parkeri* (Chestnut-rumped Heathwren (Mount Lofty Ranges)): listed as Endangered
- *Isodon obesulus obesulus* (Southern Brown Bandicoot (SA mainland and KI)): listed as Vulnerable
- *Myiagra inquieta* (Restless Flycatcher): listed as Rare
- *Neophema elegans elegans* (Elegant Parrot): listed as Rare
- *Oxyura australis* (Blue-billed Duck): listed as Rare
- *Petroica boodang boodang* (Scarlet Robin): listed as Rare
- *Petroica phoenicea* (Flame Robin): listed as Vulnerable
- *Pseudophryne bibronii* (Brown Toadlet): listed as Rare
- *Rattus lutreolus* (Swamp Rat): listed as Rare
- *Spatula rhynchotis* (Australasian Shoveler): listed as Rare
- *Thinornis cucullatus cucullatus* (Hooded Plover): listed as Vulnerable
- *Varanus rosenbergi* (Heath Goanna): listed as Vulnerable
- *Zanda funerea whiteae* (Yellow-tailed Black Cockatoo): listed as Vulnerable.

The Ecological Baseline Survey, undertaken on 13 January 2025, identified 20 species of native fauna species (all birds) within the survey area. The full list of native fauna species observed is provided in **Attachment 3**.

The listed threatened fauna species were cross-referenced against the list of observed native vegetation species from the Ecological Baseline Survey (Smith, 2025). None of the listed species featured in the EPBC Protected Matters Search were observed during the survey and one observed species was listed as 'vulnerable' under the State NPW Act.

2.9.2 Introduced fauna

The methods for identifying the presence of native fauna at the Site were as follows:

- Conduct a search of the BDBSA within 5km of the Site (**Figure 6**), and
- Undertake a Level 2 fauna survey within the proposed mining areas (Ecological Baseline Survey).

The BDBSA list of introduced fauna observed within 5km of the Site is as follows:

- *Alauda arvensis arvensis* (Eurasian Skylark)
- *Carduelis carduelis britannica* (European Goldfinch)
- *Chloris chloris* (European (Common) Greenfinch)
- *Columba livia* (Feral Pigeon)
- *Gambusia holbrooki* (Eastern Gambusia)
- *Lepus europaeus* (European Brown Hare)
- *Mus musculus* (House Mouse)
- *Oryctolagus cuniculus* (Rabbit (European Rabbit))
- *Passer domesticus domesticus* (House Sparrow)
- *Rattus rattus* (Black Rat (Ship Rat, Roof Rat))
- *Sturnus vulgaris vulgaris* (Common Starling)
- *Turdus merula merula* (Common Blackbird)
- *Vulpes vulpes* (Red Fox).

The *Ecological Baseline Survey* identified one introduced fauna species at the Site, *Carduelis carduelis britannica* (European Goldfinch).

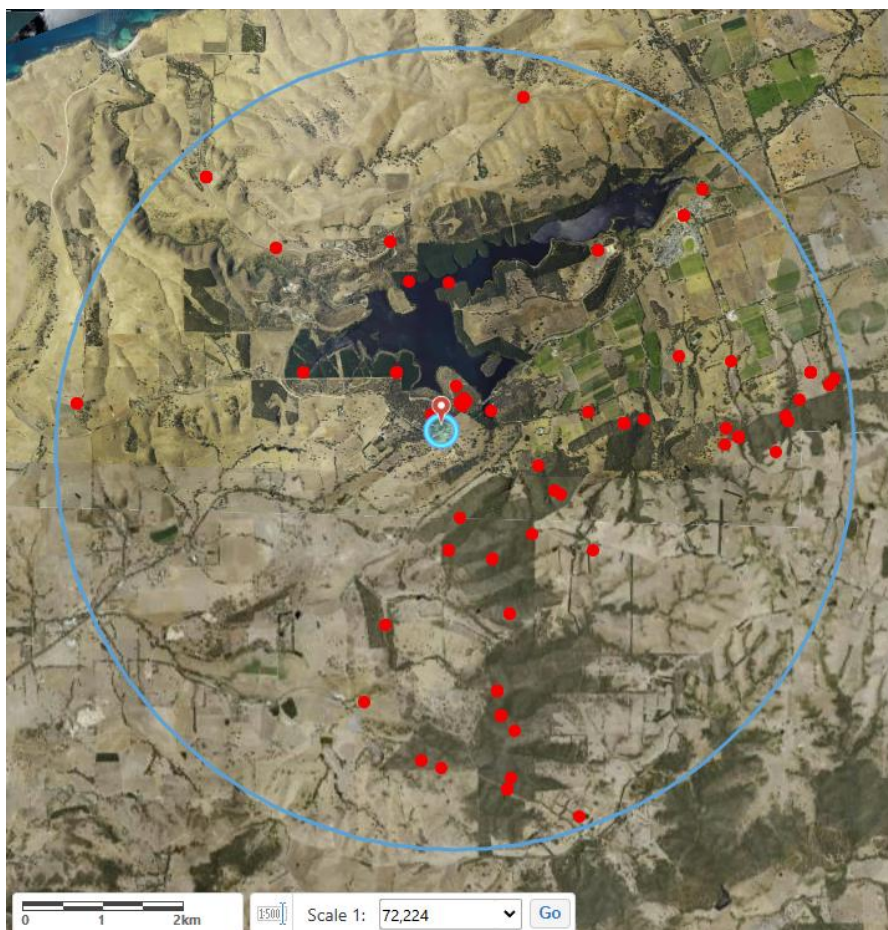


Figure 6 – Location of introduced fauna observations within 5km (blue ring) of the Site

2.10 Caves

A search of the South Australian Heritage Places Database (Government of South Australia, 2024e) did not identify any heritage listed caves within the District Council of Yankalilla area.

No evidence of caves or karst features has been observed at the Site since the commencement of operations on the underlying EML and caves are not expected to be present within the MC 4569 area.

2.11 Land use

2.11.1 Historical land use

The underlying EML 5542 was registered on 19 December 1988 for the production of extractive materials and has been operating pursuant to ADP 1995/027 approved under the *Mining Act 1971* on 8 May 1995.

The current land use at the property at the time of ADP 1995/027 being drafted in 1995 was for grazing, and an inspection of the area did not identify any potential historical sources of contamination or contaminating land uses.

2.11.2 Local land use and zoning

The South Australian Generalised Land Use spatial layer from 2022 is featured in **MP Drawing 12** and shows the CT is categorised as livestock, with the surrounding area categorised as livestock to the south and east, rural residential to the south, west and north, forestry to the north-east, reserve to the north and utilities/industry to the north (Government of South Australia, 2024f).

The boundary between the Rural Zone and Productive Rural Landscape Zone is located approximately through the centre of the CT, including the MC area (Government of South Australia, 2024g).

Desired Outcomes for the Productive Rural Landscape Zone are as follows:

- DO 1 A diverse range of land uses at an appropriate scale and intensity that capitalise on the region's proximity to the metropolitan area and the tourist and lifestyle opportunities this presents while also conserving the natural and rural character, identity, biodiversity and sensitive environmental areas and scenic qualities of the landscape.*
- DO 2 A zone that promotes agriculture, horticulture, value adding opportunities, farm gate businesses, the sale and consumption of agriculturally based products, tourist development and accommodation that expands the economic base and promotes its regional identity.*
- DO 3 Create local conditions that support new and continuing investment while seeking to promote co-existence with adjoining activities and mitigate land use conflicts.*

Desired Outcomes (DO) for the Rural Zone are as follows:

- DO 1 A zone supporting the economic prosperity of South Australia primarily through the production, processing, storage and distribution of primary produce, forestry and the generation of energy from renewable sources.*

DO 2 A zone supporting diversification of existing businesses that promote value-adding such as industry, storage and warehousing activities, the sale and consumption of primary produce, tourist development and accommodation.

Easements for electricity transmission lines traverse the property but are not within the MC 4569 area.

2.11.3 Other Mining Act approvals over the area

Petroleum Exploration Licence Application (PELA) 688 was submitted on 12 May 2021 by Byrock Resources Pty Ltd and covers approximately 9,952km² of the northern Yorke Peninsula from Artherton in the south and extending as far north as Crystal Brook and includes the MC area. As PELA 688 was not approved at the time of MC 4569 being registered a Notice of Entry was not required to be served.

The closest mining tenement (other than the underlying EML 5542) is the Wild Dog Creek Quarry (EML 6193), which is an active, operational sandstone quarry located approximately 3.3kms to the south-west, operated by Wenham Earthmovers Pty Ltd.

2.11.4 Proposed future land use

The final landform will be safe and stable and will visually conform with the wider landscape.

The proposed post-mining land uses are as follows:

- Native vegetation area and fauna habitat (quarry pit benches and adjacent areas)
- Grazing (quarry pit floor and ancillary mining areas).

Native vegetation plantings along the final quarry pit benches will be tightly spaced to screen the views of the exposed bench faces and are also designed to connect the Eucalypt woodlands either side of the existing pit.

The final landform design includes a 1v:3h batter on the northern sides connecting the pit floors to the natural land surface. This will allow access for vehicles and can be safely traversed by livestock.

The final pit dimensions have been designed in consideration of the Western Australian *Safety Bund Walls Around Abandoned Open Pit Mines Guideline* (WA safety bunding guidelines) (Government of Western Australia, 1997).

2.12 Proximity to infrastructure and housing

The locations of residences and human infrastructure in the local area are shown in **MP Drawing 13**.

2.12.1 Local infrastructure

The dwelling on the Site is serviced by a SAPN Low Voltage Overhead Line.

An 11kV SAPN Subtransmission and High Voltage Overhead Line is located approximately 110m from the northern MC boundary.

A 66kV SAPN Subtransmission and High Voltage Overhead Line is located approximately 20m from the northern MC boundary (Government of South Australia, 2024a).

All operations on EML 5542 have occurred within 200m of a transmission line pole without causing impacts.

Two groundwater wells (6527-1047 and 6527-1029) are located within the CT area, but outside of the MC area.

Multiple dams are present within 500m of the Site along the drainage lines. The dams are usually full of water and used for stock watering.

A review of Location SA Map Viewer identified that there are no gas or water pipelines in the vicinity of the Site.

Main South Road is a sealed State maintained two-way arterial road, located approximately 220m to the north of the Site and includes the primary access point for both the landowners dwelling and the quarry.

Nunn Road, an unsealed local road is located approximately 290m from the southern MC boundary (Government of South Australia, 2024f).

The Heysen Trail runs along Nunns Rd to the south of the Site.

2.12.2 Local housing

The Site is located in an area predominantly used for livestock, rural residential, forestry and reserves.

As shown in **MP Drawing 13**, 15 dwellings (sensitive receptors) have been identified within 1km of the MC boundary including:

- Dwelling (approximately 190m from the northern MC boundary) (Landowner residence)
- Dwelling (within 400m of south-east corner of MC area) (SR1)
- Dwelling (within 1km south-west corner of MC area) (SR2)
- Dwelling (within 1km of south-west corner of MC area) (SR3)
- Dwelling (within 1km) (SR4)
- Dwelling (within 1km of north-west corner of MC area) (SR5)
- Dwelling (within 1km of north-west corner of MC area) (SR6)
- Dwelling (within 1km) (SR7)
- Dwelling (within 1km north-west corner of MC area) (SR8)
- Dwelling (within 1km north-west corner of MC area) (SR9)
- Dwelling (within 1km north-west corner of MC area) (SR10)
- Dwelling (within 1km north-west corner of MC area) (SR11)
- Dwelling (within 1km north-west corner of MC area) (SR12)
- Dwelling (within 400m north-west corner of MC area) (SR13)
- Dwelling (within 1km north-east corner of MC area) (SR14).

A Tourism accommodation (Heysen's Rest Cabins) is located approximately 310m from the MC 4569 south-west corner.

2.13 Exempt land

The exempt land area across MC 4569 is shown in **MP Drawing 14**.

The following exempt land has been identified within the MC 4569 area in accordance with Section 9 of the *Mining Act 1971*:

- 5203 Main South Road (landowner's property) – land situated within 400m of a building or structure used as a place of residence, and land within 150m of a well or dam.
- 66kV and 11kV SAPN transmission lines – land situated within 150m of a building or structure, with a value equal to or exceeding the prescribed amount, used for an industrial or commercial purpose.
- 6 Forktree Road – land situated within 400m of a building or structure used as a place of residence (to be confirmed if used as a place of residence).
- 45 Nunn Road – land situated within 400m of a building or structure used as a place of residence.

Form 23As have been issued to the landowner and SAPN, and both the landowner and SAPN have signed the Form 23B waiver forms.

Further consultation with the owners of 6 Forktree Road and 45 Nunn Road in relation to the waivers will continue during the assessment of the mining proposal.

The proposed operations are a continuation of the current operations of EML 5542, which was previously held by the landowner. The Site is accessed via the landowner's property entrance point. The landowner has advised that they are comfortable with this arrangement to continue and therefore there is a reasonable prospect to access the land.

A review of SARIG shows that the land is not covered by an Indigenous Land Use Agreement (ILUA) and as the land is owned freehold, the MC 4569 is not subject to Native Title.

2.14 Amenity

The Site is located in a hilly landscape with a mix of commercial, industrial and residential land uses.

The area is considered to hold a moderate to high level of aesthetic value and amenity for the local community.

The Site is in close proximity to Main South Road, which was observed during an inspection on 13 January 2025 to be the main source of noise in the local area, and some odour and presence of insects is expected due to the grazing activities and various open water sources in the local area.

The existing quarry is visible from Main South Road. The Site has partial tree screening by a row of trees adjacent to Main South Road, and from a partially vegetated bund established at the northern side of the Site (**Plate 5**).



Plate 5 – The partial tree screen along the northern side of quarry

An assessment of the visibility of the MC 4569 was undertaken through conducting a ‘Viewshed Analysis’ for all sensitive receptor locations within 1km of the MC 4569 boundary.

The ‘Viewshed Analysis’ is based on the view from each dwellings location at 2.0m from the ground. The software then utilises a Digital Elevation Model obtained from the Elevation and Depth - Foundation Spatial Data (ELVIS) platform to identify sections of the surface that are visible from the viewers location.

The results from the analysis are provided in **MP Drawing 15**. The locations of each SR are shown in **MP Drawing 13**.

The results suggest that SR1 – SR3 and SR14 will not have visibility into the majority of the Site, but that SR4 – SR13, which is the cluster of dwellings at the eastern end of Fork Tree Road to the north of the Site do have views across the majority of the MC 4569 area. The results suggest that it is appropriate for mining, rehabilitation and environmental planning to consider potential visual amenity impacts from the northern aspect.

It should be noted that the results do not incorporate trees as an obstacle to view.

Should the lease be approved, a selection of visual amenity monitoring locations will be identified at or near sensitive receptor locations that are most likely to have a view of the existing and/or proposed operational areas and baseline photographs will be provided in the Program for Environment Protection and Rehabilitation (PEPR).

An inspection of the area where SR7 – SR13 are located along Forktree Road identified that thick vegetation is likely to screen any views of MC 4569 (**Plate 6**).

An inspection from the East Pit area confirmed that the top of the hill (Stage 2) will be visible from SR1 and SR2 (**Plate 7**) but that the view of the East Pit from SR4 to SR13 will be predominantly screened by the existing vegetation (**Plate 8**).

An inspection of the view from the south along Nunns Road confirmed that the Site will not be visible from SR3 (**Plate 9**) and activity at the top of the hill in Stage 2 may be visible from SR14.



Plate 6 – The view towards MC 4569 from Forktree Road



Plate 7 – The view towards SR1 and SR2 from the southern boundary of the East Pit



Plate 8 – The view from the East Pit towards Forktree Rd



Plate 9 – The view from SR3 on Nunn Road

2.15 Air quality

Air quality in the local area is expected to be of generally good quality.

The area also has several unsealed roads that will contribute to levels of dust within the atmosphere.

Local air quality may also be impacted infrequently by local and large regional bushfires.

Domestic combustion heaters located in dwellings located in the area may be expected to cause minor air quality impacts during the winter months.

Quarrying activities on the existing EML 5542 have the potential to generate dust during excavation activities, crushing and screening campaigns, loading trucks and through wheel generated dust. Production at the Site is limited to 20,000 – 30,000 tonnes per year and quarrying and processing is undertaken intermittently and have not lead to dust complaints in the past.

As the proposed operations are consistent with those presently undertaken on EML 5542, no new sources of dust are proposed, and an increase in dust emissions from the Site are not expected.

2.16 Noise

Potential noise sources from the Site include extraction operations, crushing and screening, load and haul activities, topsoil stripping, rehabilitation earthworks and delivery truck movements.

Operations will predominantly occur from Monday to Friday starting no earlier than 7:00am and finishing no later than 6:00pm. If market demand is high, operations may also occur on Saturdays from 7:00am to 3:00pm.

No work will occur on Sundays or Public Holidays.

The hours between 7:00am and 6:00pm are within the 'day' period as defined in the South Australian *Environment Protection (Commercial and Industrial Noise) Policy 2023* (EPA Noise Policy).

A review of the South Australian Property and Planning Atlas (SAPPA) identified that the Site property and neighbouring properties are categorised as 'Rural' and 'Productive Rural Landscape' (Government of South Australia, 2024g).

The appropriate land use category under the EPA Noise Policy is considered to be 'Rural industry'.

The applicable indicative 'day' noise factor for 'Rural Industry' is an LAeq of 57 dB(A) when measured over a 15-minute period in accordance with the EPA Noise Policy.

2.17 Heritage (Aboriginal, European, Geological)

A review of registered heritage sites was undertaken on the *Location SA Map Viewer* (Government of South Australia, 2024f) and *Nature Maps* (Government of South Australia, 2024b) showed that the nearest registered heritage place is the Bowyer Brick Yards Complex, located approximately 4.5km to the south-west of the Site near Wattle Flat.

A review of the 'Geological Monuments' spatial layer on SARIG showed that no geological monuments are located at or within 5km of the Site.

A search of the Aboriginal Heritage Site Register (Taa Wika) was undertaken on 25 November 2024. The search included the Site area and a 5km buffer around the Site boundary.

One listed Aboriginal Heritage Site (Point) was identified from the search (**Attachment 5 – confidential**), located approximately 1.3km from the Site boundary.

Mining operations are not expected to cause any impact to the listed Site due to the distance from the operations. However, the identification of the registered Site does highlight that Aboriginal Sites and objects are present in the local area.

2.18 Proximity to conservation areas

The locations of nearby conservation areas are shown in **MP Drawing 16**.

The nearest conservation areas are the:

- Nixon Skinner Conservation Park (CP), located approximately 315m to the north of the north-eastern corner of the MC area
- Myponga CP located approximately 2.3km south of the south-eastern corner of the MC area
- Yulte CP located approximately 3.3km east of the south-eastern corner of the MC area (Government of South Australia, 2024f).

Heritage Agreement (HA) 1580, registered on 18 May 2017, is in place over approximately 30ha of native vegetation located approximately 740m south-east of the south-eastern corner of the MC area.

HA 493, registered on 29 April 1991, is in place over approximately 39ha of native vegetation located approximately 1.6km east of the south-eastern corner of the MC area (Government of South Australia, 2024b).

2.19 Pre-existing site contamination and previous disturbance

There is no known existing contamination of the Site.

The extent of the pre-existing disturbance associated with operations on EML 5542 is provided in **MP Drawing 17**.

3 DESCRIPTION OF PROPOSED OPERATIONS

3.1 General description and maps/plans of operations

The proposed Mining Lease is a continuation of the existing Whittlesea Quarry, which operates under EML 5542, approved under the *Mining Act, 1971* in 1988, using the same methods and equipment.

The larger and more regularly shaped proposed Mining Lease will replace the existing irregularly shaped, 2.82 hectare EML, and is intended to facilitate improved rehabilitation outcomes and extend the life of the quarry on the property.

Quarrying operations are proposed to initially continue in the existing pit (West Pit). It is proposed that extractive minerals will be produced from the quarry using conventional machinery and occasionally using drill and blast methods for harder sections, as is the current practice.

Blasting would be infrequent, and the community would be notified of blasts at least 24-hours prior to the blast occurring.

It is proposed that extracted material continues to be processed into smaller sizes by the crushing and screening plant located on the quarry pit floor in the current location that these activities occur on EML 5542.

It is proposed that these operations will continue to occur on a campaign basis to create product stockpiles that will be accessed throughout the year as required. As the stockpiles become depleted, the process of extraction, processing and stockpiling re-occurs as is the current process for the operations on EML 5542.

It is proposed that the tenement will continue to be accessed via Main South Road.

The estimated annual production will continue to be 25,000 to 30,000 tonnes per annum.

It is proposed that the operations continue to occur from Monday to Friday starting no earlier than 7:00am and finishing no later than 6:00pm. If market demand is high, it is proposed that operations may also occur on Saturdays between the hours of 7:00am to 3:00pm.

No work is proposed to occur on Sundays or Public Holidays.

Proposed quarrying will initially continue in the existing West Pit for approximately 11 years. The pit will extend back into the hill towards the south by 25m – 45m and have 3 benches formed, each with 10m high faces.

During this period of quarrying in the West Pit it is proposed that additional trees are planted on the northern side of the quarry to expand the existing tree screen along the EML 5542 northern boundary, and to potentially offset proposed tree clearance.

Once quarrying is completed in the West Pit, it is proposed that work commences on the East Pit, starting on the plateau area at the top of the hill. Soil would be stripped ahead of quarrying and would be used to create visual screening mounds adjacent to the quarry pit on the northern and southern sides.

As quarrying commences in the East Pit, rehabilitation of the West Pit would commence. This would include tree plantings to link the adjacent woodlands together and creating a grassed grazing surface on the pit floor.

The East Pit would then be extended to the north as the top benches on the southern side of the pit are rehabilitated to reduce visual impacts from the northern aspect.

The total mine life for the East Pit would be approximately 19 years.

The East Pit would also be rehabilitated to have a mix of native vegetation plantings on the benches, and a grazing area on the pit floor.

All soils would continue to be stripped from the surface ahead of quarrying commencing and temporarily stockpiled adjacent to the quarry and then utilised for the rehabilitation of the Site at the completion of quarrying operations.

The final landform will include a pit floor and shaped ancillary mining areas that will be returned to grazing activities.

The quarry pit will have benches approximately 10m high and will be covered with soils and converted into the native vegetation seeding/planting area. This native vegetation will link existing patches of woodland to create a corridor for native animals living at the property.

The proposed final land use is the current land use of grazing land, with sections of native woodlands.

The following Drawings have been provided to support the description of mining operations:

- **MP Drawing 18** – Stage 1 mining and rehabilitation plan
- **MP Drawing 19** – Stage 2 mining and rehabilitation plan
- **MP Drawing 20** – Stage 3 mining and rehabilitation plan
- **MP Drawing 21** – Concept final landform and design
- **MP Drawing 22** – Concept final landform and design (with vegetation)
- **MP Drawing 23** – Concept final landform and design cross-sections
- **MP Drawing 24** – Product transport and vehicle access map.

3.2 Resources and products

3.2.1 Resource

The target resources on MC 4569 are extractive minerals (quartzites, gneiss and other stone from the Saddleworth Formation).

Based on the homogenous resource present across the existing West Pit, it is expected that the same resource will be present across the MC 4569 area as shown in **MP Drawing 4**.

3.2.1.1 Statement of current estimated resource

An estimate of the resource available at the Site has been undertaken using volume calculation software that measures the volume between the current landform and the elevations within the proposed mining plans.

The estimate assumes that the extractive minerals are present across the entire MC 4569 area, and that all undisturbed areas are covered by 1.0m of soil over the target resource.

The resource estimate is provided in **Table 6**.

The estimated net volume (with soils subtracted) of the resource across both quarry pits is 427,158 m³ or 854,316 tonnes when calculated using a bulk density of 2.0.

Table 6 – Estimated resources within the proposed mining plans

| Mining Stage | Estimated resource volume (m³) | Estimated soils (m³) | Estimated resource (tonnes) | Estimated time to completion (years) |
|---------------------------|--|--|------------------------------------|---|
| West Pit (Stage 1) | 158,504 | 3,528 | 317,008 | 11 |
| East Pit (Stages 2 and 3) | 268,654 | 16,296 | 537,309 | 18 |
| Total | 427,158 | 19,824 | 854,316 | 29 |

3.2.2 Production rate and products

The estimated annual production rate is 25,000 – 30,000 tonnes.

The resource will be used for road base, driveways, shed pads and other similar extractive uses.

All extracted material is intended to be sold as extractive minerals. All soils or material not sold will remain on the Site and used in rehabilitation.

3.2.2.1 Production rates and mine life

It is estimated that under full production (30,000 tonnes per annum), the life of the quarry will be approximately 29 years.

A summary of the estimated production rates and remaining life of mining is provided in **Table 6** above.

3.3 Quarrying activities

3.3.1 Type or types of quarry operation to be carried out

The general layout of the Site is provided in **MP Drawing 17**.

The proposed quarrying methods are consistent with the methods current used at the Site under EML 5542.

A summary of the quarrying methods at the Site are as follows:

- Mining operations will initially continue in the existing West Pit. Rock will be extracted using conventional machinery and occasionally using drill and blast methods for harder sections. Blasting would be infrequent, and the community will be notified of blasts at least 24-hours prior to the blast occurring.
- Extracted material is then processed into smaller product sizes by the crushing and screening plant located on the quarry pit floor. These operations will occur on a campaign basis to create product stockpiles that will be accessed throughout the year as required. As the stockpiles become depleted, the process of extraction, processing and stockpiling re-occurs.
- The tenement will continue to be accessed via Main South Road.

3.3.1.1 Rehabilitation

Achievement of the final landform is expected to be completed using the materials currently available at the Site.

The proposed final land use is the current land use of grazing land, with sections of native woodland.

Soils are stripped from the surface ahead of quarrying operations commencing and temporarily stockpiled adjacent to the quarry and then utilised for the rehabilitation of the Site at the completion of quarrying operations.

The final landform will include a pit floor and shaped ancillary mining areas that will be returned to grazing activities.

The quarry pit will have benches approximately 8m wide and will be covered in soils and converted into the native vegetation seeding/planting area. This native vegetation will link existing patches of woodland to create a corridor for native animals living at the property and will screen the views of the exposed rock bench faces from the northern side of the Site.

3.3.1.1.1 Rehabilitation material balance

As discussed in Section 2.3, approximately 21,600 m³ of rehabilitation material will be available for rehabilitation at the Site.

A safety bund is proposed to be formed along the southern MC 4569 boundary with a base of 5m and a height of 2.0m in accordance with the WA safety bunding guidelines. This will require approximately 2,262 m³ of the rehabilitation material. The residual rehabilitation material is therefore 19,338 m³.

It is expected that the pit floor and ancillary mining areas will require a minimum of 0.5m of rehabilitation material to achieve the final landform.

The material balance calculations based on the rehabilitation material present and the minimum amount of rehabilitation material required to achieve the final landform is provided in **Table 7**.

The total volume of rehabilitation material required to meet the minimum requirements for the rehabilitation at the Site is approximately 17,915 m³. This leaves a surplus of approximately 1,424 m³ that can be used to increase the depth of the rehabilitation material above the minimum requirements.

Table 7 – Rehabilitation material balance

| Rehabilitation areas | Area (West Pit) | Area (East Pit) | Minimum depth | Volume (West Pit) | Volume (East Pit) | Volume (Total) |
|-----------------------|-----------------|-----------------|---------------|-------------------|-------------------|----------------|
| Pit floor | 7,623 | 4,798 | 0.5 | 3,812 | 2,399 | 6,211 |
| Ancillary mining area | 8,022 | 0 | 0.5 | 4,011 | 0 | 4,011 |
| Batters | 2,050 | 1,622 | 0.5 | 1,025 | 811 | 1,836 |
| Bench 1 | 1,647 | 3,145 | 0.5 | 824 | 1,573 | 2,396 |
| Bench 2 | 1,557 | 2,647 | 0.5 | 779 | 1,324 | 2,102 |
| Bench 3 | 942 | 1,776 | 0.5 | 471 | 888 | 1,359 |
| Total | 21,841 | 13,988 | 0.5 | 10,921 | 6,994 | 17,915 |

3.3.1.2 *Equipment to be used in mining and rehabilitation*

An overview of the type of equipment anticipated to be used to perform mining operations at the Site include:

- Excavator
- Front End Loader
- Haul Trucks
- Mobile Crushing Plant
- Screening Plant
- Mobile Generator Unit
- Rock Breakers.

3.3.2 Sequence of quarrying and progressive rehabilitation

The sequence of mining and progressive rehabilitation is provided in the following drawings:

- **MP Drawing 18** – Stage 1 mining and rehabilitation plan
- **MP Drawing 19** – Stage 2 mining and rehabilitation plan
- **MP Drawing 20** – Stage 3 mining and rehabilitation plan

3.3.2.1 *Stage 1 operations*

3.3.2.1.1 *Rock extraction*

The proposed Stage 1 mining area covers a total disturbance area of approximately 2.93 ha, which includes 1.57 ha of active mining area, and 1.36 ha of ancillary mining areas (**MP Drawing 18**).

Quarrying operations will continue in the existing West pit back to the terminal southern pit boundary approximately 20m in from the MC 4569 boundary.

Extractive minerals will continue to be extracted using conventional heavy machinery (e.g. excavators), or infrequently by using drill and blast methods where conventional methods are unsuccessful.

Raw material will be transported to the ancillary mining area for processing and stockpiling. This will be consistent with how operations have been undertaken on EML 5542.

Three benches will be formed in the south-west corner, where the maximum pit depth of 40m will be reached. Each bench is connected by a 10m high face that will be laid back to a terminal slope of 5v:1h.

Each bench will be a minimum of 8m wide, creating a 45° angle from the intersection of the pit floor and lowest pit face to the crest of the highest face of the pit.

Low safety bunds (approximately 0.6m high) will be established along the edge of the benches during quarrying operations and will remain at the completion of mining.

Each bench will terminate at the corresponding surface level on the western and eastern side of the pit, allowing access to each bench from two points and facilitating final rehabilitation works.

3.3.2.1.2 *Native vegetation clearance*

Five *Eucalyptus leucoxylon ssp leucoxylon* (SA Blue Gum) trees are proposed to be cleared during Stage 1 in accordance with the Native Vegetation Management Plan featured in **Attachment 3**.

Two additional trees are proposed to be cleared during Stage 1, and both these trees were approved for clearance in ADP 1995/027 and therefore no further approvals to clear the trees are required.

The SEB value for the clearance of the trees in Stage 1 is \$27,323.15 or 22.22 SEB points.

3.3.2.1.3 Progressive rehabilitation

Progressive rehabilitation of Stage 1 will not be possible due to the limited footprint of the quarry and the full disturbance area being in use for Stage 1 operations.

Native vegetation planting is proposed to commence within and below the existing screening mound along the northern boundary of the Site. Approximately 0.8 ha of land is available within the MC 4569 area for the planting to be established.

A summary of the disturbance area at the commencement and completion of Stage 2 is provided in **Table 8**.

3.3.2.2 Stage 2 operations

3.3.2.2.1 Rock extraction

The proposed Stage 2 mining area will include an additional disturbance area of approximately 0.99 ha, which includes 0.82 ha of active mining area and 0.17 ha of additional soil stockpiling areas (**MP Drawing 19**).

The commencement of Stage 2 operations will commence at the completion of quarrying in the West Pit.

The existing property track that connects the ancillary mining area to the East Pit will be resurfaced for use as an internal haul road for heavy vehicles to access the East Pit at the south-western corner.

Soil will be stripped ahead of mining in the East Pit and will be stored in 2.0m high windrows on the southern and northern side of the Stage 2 mining area where it will also provide visual screening.

The Stage 2 mining area is located across a plateau at the peak of the hill. It is proposed that the pit be developed by cutting into the top of the hill where the topography can then screen any views into the pit. {

The southern crest of the pit in Stage 2 is at approximately 290m AHD, and the northern crest is at approximately 288m AHD. Therefore, given all nearby sensitive receptors to the north of the Site are at lower elevations, the 2.0m high soil stockpiles would screen the views of the southern quarry face.

Extractive minerals will continue to be extracted using conventional heavy machinery (e.g. excavators), or infrequently by using drill and blast methods where conventional methods are unsuccessful.

Raw material will be transported to the ancillary mining area for processing and stockpiling. This will be consistent with how operations have been undertaken on EML 5542 and in Stage 1.

Two benches will be formed on the southern and eastern (uphill) sides of the pit, and one bench will be formed on the western and northern sides. The maximum pit depth in Stage 2 will be approximately 27m. Each bench is connected by a maximum 10m high face that will be laid back to a terminal slope of 5v:1h.

Each bench will be a minimum of 8m wide, creating a 45° angle from the intersection of the pit floor and lowest pit face to the crest of the highest face of the pit.

Low safety bunds (approximately 0.6m high) will be established along the edge of the benches during quarrying operations and will remain at the completion of mining.

The upper bench will terminate at the corresponding surface level where the access road enters the pit, and at the north-east corner of the pit. The lower bench and pit floor will be accessed by ramps.

3.3.2.2.2 *Native vegetation clearance*

10 *Eucalyptus leucoxylon ssp leucoxylon* (SA Blue Gum) trees are proposed to be cleared during Stage 2 in accordance with the Native Vegetation Management Plan featured in **Attachment 3**.

The SEB value for the clearance of the trees in Stage 2 is \$42,288.17 or 34.39 SEB points.

3.3.2.2.3 *Progressive rehabilitation*

Progressive rehabilitation activities during Stage 2 include the following activities in the West Pit (Stage 1 mining area):

- Establishment of the final bench safety bund along the southern MC 4569 boundary (where it aligns with the West Pit) constructed in accordance with Section 4.2 of the WA safety bunding guideline.
- Contouring of the northern batter from the edge of the ancillary mining area to the West Pit floor.
- Ripping of the pit floor and bench surfaces.
- Soil respreading over the northern batter, the pit floor and the benches to an average depth of 0.5m.
- The northern batter and pit floor will be seeded with pasture grasses.
- The West Pit benches will be planted and/or seeded with native vegetation species that are present in the adjacent woodland areas.

Rehabilitation milestone 2A – Establishment of a final safety bund along the southern MC 4569 boundary (where it aligns with the West Pit) within 1-year of final extraction in Stage 1.

Rehabilitation milestone 2B – Completion of soil respreading over the northern batters, pit floor and benches within 2-years of final extraction in Stage 1.

Rehabilitation milestone 2C – Completion of vegetation planting and/or seeding within 3-years of the final extraction in Stage 1.

Rehabilitation milestone 2D – Within 3-years of final extraction in Stage 1, an annual revegetation monitoring program has been developed and is analysing and reporting on the success of the initial rehabilitation program, so that any learnings can be applied to future rehabilitation activities.

A summary of the disturbance area at the commencement and completion of Stage 2 is provided in **Table 8**.

3.3.2.3 *Stage 3 operations*

3.3.2.3.1 *Rock extraction*

The proposed Stage 3 mining area will include an additional disturbance area of approximately 0.97 ha, which includes 0.74 ha of active mining area, 0.13 ha of additional soil stockpiling areas and approximately 0.1 ha of additional access tracks to ensure each bench and the pit floor has two access options (**MP Drawing 20**).

Soil stockpiles along the northern side of the pit will be relocated to the southern end of the pit ready for respreading over the upper two benches.

Soil from the Stage 3 mining area will be progressively stripped as the pit extend northwards and will be stockpiled adjacent to the East Pit.

Quarrying operations will continue in the East Pit progressively extending the pit to the northern terminal boundary and lowering the pit floor to approximately 255m AHD.

The terminal pit boundaries will be approximately 20m in from the MC 4569 boundary.

Extractive minerals will continue to be extracted using conventional heavy machinery (e.g. excavators), or infrequently by using drill and blast methods where conventional methods are unsuccessful.

Raw material will be transported to the pre-existing ancillary mining area for processing and stockpiling, or an alternative ancillary mining area may be established on the floor of the East Pit once enough space is available to do so.

The three benches along the eastern side of the pit will continue to be established northwards, and the two benches on the western side of the pit will also continue northwards.

As the topography lowers to the north, only a single bench will be present at the northern end of the pit.

The maximum pit depth of 40m will be reached. Each bench is connected by a 10m high face that will be laid back to a terminal slope of 5v:1h.

Each bench will be a minimum of 8m wide, creating a 45° angle from the intersection of the pit floor and lowest pit face to the crest of the highest face of the pit.

Low safety bunds (approximately 0.6m high) will be established along the edge of the benches during quarrying operations and will remain at the completion of mining.

Each bench will terminate at the corresponding surface level on the western and eastern side of the pit, allowing access to each bench from two points and facilitating final rehabilitation works.

3.3.2.3.2 Native vegetation clearance

Three *Eucalyptus leucoxylon ssp leucoxylon* (SA Blue Gum) trees are proposed to be cleared during Stage 3 in accordance with the Native Vegetation Management Plan featured in **Attachment 3**.

The SEB value for the clearance of the trees in Stage 3 is \$17,215.30 or 14.00 SEB points.

3.3.2.3.3 Progressive rehabilitation

Progressive rehabilitation activities during Stage 3 include the following activities in the East Pit (Stage 2 mining area):

- Establishment of the final bench safety bund along the southern and south-western MC 4569 boundary, and along the southern end of the western pit boundary constructed in accordance with Section 4.2 of the WA bunding guideline.
- Ripping of the southern and eastern bench surfaces completed to the terminal boundary in Stage 2.
- Ripping of the lower bench and pit floor at the southern end of the East Pit once mining has progressed towards the north.
- Soil respreading over the southern and eastern bench surfaces completed to the terminal boundary in Stage 2 to an average depth of 0.5m.

- Planting and/or seeded with native vegetation species that are present in the adjacent woodland areas over the southern and eastern bench surfaces completed to the terminal boundary during Stage 2.
- Ripping of the lower bench and pit floor at the southern end of the East Pit once mining has progressed towards the north.
- Soil respreading over the lower bench and pit floor at the southern end of the East Pit to an average depth of 0.5m.
- Planting and/or seeded with native vegetation species that are present in the adjacent woodland areas the lower bench and pit floor at the southern end of the East Pit.

Rehabilitation milestone 3A – Establishment of a final safety bund southern and south-western MC 4569 boundary, and along the southern end of the western pit boundary within 1-year of final extraction in Stage 2.

Rehabilitation milestone 3B – Completion of soil respreading over the southern and eastern bench surfaces completed to the terminal boundary in Stage 2 within 2-years of final extraction in Stage 2.

Rehabilitation milestone 3C – Completion of vegetation planting and/or seeding over the southern and eastern bench surfaces completed to the terminal boundary in Stage 2 within 3-years of the final extraction in Stage 2.

Rehabilitation milestone 3D – Evidence of an annual revegetation monitoring program has continued analysing and reporting on the success of the initial, and subsequent, rehabilitation programs, so that any learnings can be applied to future rehabilitation activities.

A summary of the disturbance area at the commencement and completion of Stage 3 is provided in **Table 8**.

3.3.2.4 Operational disturbance area summary

A summary of the disturbed area at the commencement and completion of all stages is provided in **Table 8**.

Table 8 – Operational disturbance and rehabilitation summary

| Stage | Start disturbance (ha) | Stage disturbance (ha) | Stage rehabilitation (ha) | End disturbance (ha) |
|---------|------------------------|------------------------|---------------------------|----------------------|
| Stage 1 | 2.37 | 0.56 | 0 | 2.93 |
| Stage 2 | 2.93 | 0.99 | 1.57 | 2.35 |
| Stage 3 | 2.35 | 0.97 | 0.7 | 2.62 |

3.3.3 Stockpiles

3.3.3.1 Topsoil and subsoil stockpiles

Topsoil will be stockpiled in windrows with a maximum height of 2m and with outer batters with slope angles of approximately 1v:2h or less at the locations shown on **MP Drawings 18 – 20**.

The stockpiles will establish a coverage of grass, monitored for erosion issues and controlled for weeds.

3.3.3.2 *Product stockpiles*

Product stockpiles will be formed neatly at the end of the stackers to a maximum height of approximately 5m. The maximum amount of material stockpiled at the Site at the end of a crushing and screening campaign is 10,000 tonnes.

Product stockpiles will be located in the ancillary mining area as shown in **MP Drawings 18 – 20** and may also occur on the floor of the East Pit in Stage 3 (**MP Drawing 20**).

3.3.3.3 *Overburden stockpiles*

The target resource has been found to occur directly below the subsoils at the Site, with no overburden.

Any overburden intercepted will be stockpiled to a maximum height of 3m in the soil stockpiling areas shown in **MP Drawings 18 – 20** and utilised in the rehabilitation of the Site.

3.3.4 Use of explosives

Blasting will occur infrequently, approximately once per year or less.

All blasting is undertaken by qualified staff and/or contractors in accordance with Australian Standard 2187.2-2006 – Part 2: Use of Explosives. The blasting management and safety measures will be prepared and executed by the contractor.

No explosives are stored on Site and only ordered and used as required and supplied by third party providers.

All neighbouring property owners will be contacted and informed about each blast via text message approximately 24-hours prior to the blast.

Blasting will be arranged in consultation with the landowners to ensure that livestock and workers are relocated away from the quarry.

Blast Guards are situated at the property access point to ensure no one enters the property while the blast is undertaken.

3.3.5 Modes and hours of operation

Mining operations at the Site will be undertaken continuously throughout the year.

Operations will predominantly occur from Monday to Friday starting no earlier than 7:00am and finishing no later than 6:00pm. If market demand is high, operations may also occur on Saturdays between the hours of 7:00am to 3:00pm.

No operations will occur on Sundays or Public Holidays.

Maintenance may be undertaken anytime.

3.4 Crushing, processing, and product transport

3.4.1 Fixed plant

No fixed crushing or screening plant is proposed to be established at the Site.

3.4.2 Hours of operation

Refer Section 3.3.5 – Modes and hours of operation.

3.4.3 Processing wastes

No chemical additives are proposed to be used in the processing of the products from the Site and therefore processing wastes will not be created by mining operations on the MC area.

3.4.4 Industrial and domestic wastes

Waste production at the Site is minimal.

Minor mobile equipment maintenance occurs at the Site. Major servicing and maintenance of mobile equipment and machinery will be generally carried out off-site unless it is not feasible to relocate the plant in which case work may be carried out on the tenement. Any wastes generated by minor servicing will be temporarily stored on site in accordance with EPA guidelines.

Diesel is stored within a tank bunded in accordance with the EPA Bunding and spill management guidelines (2016).

A spill kit is present at the Site, and any minor spills will be treated with absorbent sand and contaminated material will either be removed from the Site to an EPA licenced facility or treated in a bioremediation area and decontaminated.

Any general wastes produced during operations is temporarily stored in bins with lids to prevent vermin from accessing the waste. Waste will then be relocated from the Site to the tenement holder's depot.

3.4.5 Waste-derived fill

Waste-derived fill is not proposed to be received at the Site.

3.5 Supporting surface infrastructure

The Site supporting surface infrastructure is shown in **MP Drawing 13**.

3.5.1 Access and roads

The Site access point is located on the southern side of Main South Road as shown in **MP Drawing 24**.

Haul trucks will exit through the existing EML 5542 haul road to Main South Road (**Plate 3**), which is a sealed State maintained two-way arterial road, located approximately 220m to the north of the Site and includes the primary access point for both the landowners dwelling and the quarry.

An alternative track (an offshoot from the existing access track) will be established in Stage 3 is shown on **MP Drawing 20** to provide alternative access into the East Pit.

An average of four loaded trucks leave the Site on a workday, this increases to a maximum of 10 trucks per day during a campaign.

No upgrades are required as the existing entrance has functioned adequately since operations at the exiting quarry first commenced.

3.5.2 Accommodation and offices

A small Site hut is located within the ancillary mining area to store documents.

3.5.3 Public services and utilities used by the operation

There is no mains power or mains water on the Site.

All plant and a fuel bowser are powered by a diesel generator.

Mobile phone coverage is available at the Site.

3.5.4 Visual screening

A visual screening mound and (partial) tree screen is located along the northern side of the West Pit. Additional trees will be planted in high density on the northern side of the West Pit and ancillary mining area to enhance the tree screen.

The tree species will be the same as those present in the existing woodland areas on the property and opportunities to plant regionally threatened species, or that provide habitat/forage for regional threatened native fauna will be investigated.

Existing vegetation along the eastern side of the West Pit would be expected to screen and soften views into the East Pit when opened.

The proposed sequence of mining would allow quarrying into the hill and then behind the hill to use the topography to screen views into the East Pit as far as reasonably practicable.

Soil stockpiles will be located adjacent to the northern and southern side of the East Pit to screen views.

Details of proposed screening to assist in reducing any potential amenity impacts from the proposed operations are as follows:

- Stage 1:
 - Additional vegetation to be planted in the screening mound north of the West Pit.
- Stage 2:
 - A vegetated screening mound is proposed along the southern and south-western MC boundary (**MP Drawing 19**).
 - Progressive rehabilitation of the West Pit that will include the establishment of native trees on the benches that are intended to screen the views of the quarry faces and soften the visual impact of the Site in general.
- Stage 3:

- Progressive rehabilitation at the southern end of the East Pit will include the establishment of native trees on the benches that are intended to screen the views of the quarry faces as the East Pit extends downhill to the north, which will expose the upper southern benches of the East Pit.
- Soil stockpiles will be located adjacent to the northern, western and eastern side of the northern end of the East Pit to provide partial screening (**MP Drawing 20**).

3.5.5 Fuel and chemical storage

A self-bunded diesel tank, spill kit and fire extinguisher are stored on Site.

Oil is stored within shipping containers.

3.5.6 Site security

An access gate is located along the access track near the landowners shed, and the property is surrounded by paddock fencing.

The landowner lives on the property and monitors for any unauthorised access to the property.

Safety signage is present in multiple locations around the operating area.

A 10km/h speed limit is in place on the Site.

3.5.7 Erosion, sediment, and silt control

Modelled surface water flows at the Site are shown in **MP Drawing 9**.

Surface water flows from the existing West Pit are internally draining.

Surface water from the existing ancillary mining area flows northwards and is captured in a sediment retention dam near the northern EML 5542 boundary. Any overflow from this dam follows a drainage line running towards the north-west and enters a larger dam on the landowner's property.

All surface water in the East Pit will be internally draining and a sediment retention dam will not be required.

Monitoring for erosion and sediment control in the ancillary mining area and sediment control dam will be undertaken following heavy storms.

A local hydrology map is shown in **MP Drawing 8**.

3.6 Vegetation clearance

A description of the proposed native vegetation clearance, and Significant Environmental Benefit (SEB) calculations are provided in **Attachment 3**.

Quarry planning has targeted resource areas with lower densities of scattered native vegetation to avoid greater losses of native vegetation, or any disturbance of remnant patches of vegetation on the property.

It is proposed that 18 *Eucalyptus leucoxylon ssp leucoxylon* (SA Blue Gum) trees are cleared in the path of quarrying during the life of the quarry (approximately 1 tree every 19 months).

A total (SEB) payment for clearance of 18 trees has been calculated at \$86,826.63, which consists of an SEB Payment of \$82,300.12 plus an administration fee of \$4,526.51.

Should an on-ground SEB offset be pursued a total of 70.61 SEB points would be required to be offset.

The possibility of undertaking an on-ground offset to deliver the Significant Environmental Benefit will be explored as suitable patches of degraded native vegetation are present in adjacent areas. This will require negotiation with landowners.

Should an on-ground offset prove not to be feasible then the SEB would be provided through payment into the Native Vegetation Fund.

3.7 Site Water Management

3.7.1 Water supply

Mains water is not available at the Site.

Groundwater is accessed from a production bore on the property under Water Licence (WL) 118706 (**Attachment 6**) and is pumped into tanks located on the hill adjacent to the West Pit.

Approximately 10 – 15 tanks per year are required for processing.

The annual usage for dust suppression is approximately 750 kL and the water allocation under WL 118706 is 5,520 kL.

3.7.2 Process water ponds

No process water is generated from the operations and therefore no process water ponds are required.

3.7.3 Pit water management

Surface water runoff is directed into sumps at the base of the pits and is allowed to infiltrate into the ground and/or evaporate. No water is expected to be required to be pumped from the pit sumps.

3.8 Description of quarry site at completion

A final landform design plan is provided in **MP Drawing 21 and MP Drawing 22**, with associated surface cross-section drawings in **MP Drawing 23**.

The proposed concept final landform has been designed to be safe and stable, conform to the wider landscape and provide aesthetic value.

The proposed post-mining land uses are as follows:

- Native vegetation area and fauna habitat (quarry pit benches and adjacent areas)
- Grazing (quarry pit floor and ancillary mining areas).

All infrastructure not required for the final land use, waste materials and equipment will be removed from the Site ahead of closure.

All internal roads and hardstands not required for the final land use will be ripped to reduce compaction and rehabilitated.

Safety bunds established in accordance with Section 4.2 of the WA safety bunding guideline are proposed along the southern MC 4563 boundary, and the western boundary adjacent to the East Pit.

The vegetation planting to the north of the West Pit and ancillary mining area is expected to be well established.

3.8.1 Transfer of responsibility

The Surrender of Mining Lease would follow the required regulatory application processes and will be deemed acceptable if the closure outcomes featured in **Section 5** can be demonstrated as being achieved.

Upon approval of the surrender application by the relevant authority, the responsibility for the land will be transferred to the owners of the land.

The design of the final landform is intended to require minimal management of the native vegetation planting areas, and management requirements for the grazing areas are intended to be consistent with the other grazing areas on the property.

No residual liability at the completion of mining is expected.

3.9 Description of workforce and local procurement

The workforce comprises the tenement operator, who is local to the Fleurieu Peninsula.

Other local workers may be employed to work on the Site in the future subject to demand and workload.

Products from the Site are utilised in local earthmoving projects.

4 CONSULTATION

The process undertaken to identify stakeholders likely to be directly affected by the quarry operations is discussed below.

Stakeholders were considered to be potentially directly affected by quarry operations if they:

- had a property or mining tenement that shared a boundary with the mining tenement,
- had a residence within 1,000 metres of the proposed operating areas,
- had the benefit of an exemption from mining, and/or
- had a direct interest in the end land use of the Site.

Potential stakeholders were initially identified through consideration of the description of the existing environment, and a review of aerial imagery to determine shared boundaries and distance of residences from the Site.

Table 9 provides details of the stakeholders identified to be included in the consultation:

Table 9 – List of stakeholders

| Stakeholder | Certificate of Title | Address | Reference (MP Drawing 13) |
|--|----------------------|-------------------------------|---------------------------|
| Landowner of residence on the Site | CT 5878/667 | 5203 Main South Road, Myponga | Landowner residence |
| Landowner of residence (within 400m of south-east corner of MC area) | CT 5734/621 | 45 Nunn Road, Myponga | SR1 |
| Landowner of residence (within 1km south-west corner of MC area) | CT 6233/865 | 79 Nunn Road, Myponga | SR2 |
| Landowner of residence (within 1km of south-west corner of MC area) | CT 5400/571 | 162 Nunn Road, Myponga | SR3 |
| Landowner of residence (within 1km of north-west corner of MC area) | CT 6280/457 | 5300 Main South Road, Myponga | SR4 |
| Landowner of residence (within 1km of north-west corner of MC area) | CT 5120/443 | 55 Forktree Road, Myponga | SR5 |
| Landowner of residence (within 1km of north-west corner of MC area) | CT 5119/890 | 63 Forktree Road, Myponga | SR6 |
| Landowner of residence (within 1km of north-west corner of MC area) | CT 5812/719 | 31 Forktree Road, Myponga | SR7 |
| Landowner of residence (within 1km north-west corner of MC area) | CT 5803/53 | 28 Forktree Road, Myponga | SR8 |
| Landowner of residence (within 1km north-west corner of MC area) | CT 5823/479 | 26 Forktree Road, Myponga | SR9 |

| Stakeholder | Certificate of Title | Address | Reference (MP Drawing 13) |
|---|----------------------------------|-----------------------------------|---------------------------|
| Landowner of residence (within 1km north-west corner of MC area) | CT 5647/822 | Lot 123 Forktree Road, Myponga | SR10 |
| Landowner of residence (within 1km north-west corner of MC area) | CT 5821/314 CT 5671/120 | 20 Forktree Road, Myponga | SR11 |
| Landowner of residence (within 1km north-west corner of MC area) | CT 5513/921 | 18 Forktree Road, Myponga | SR12 |
| Landowner of residence (within 400m north-west corner of MC area) | CT 5835/765 | 6 Forktree Road, Myponga | SR13 |
| Landowner of residence (within 1km north-east corner of MC area) | CT 6233/866 | 102 Causeway Road, Myponga | SR14 |
| South Australian Power Network | CT 5878/667 | Powerlines on CT 5878/667 | Yellow lines |

The following methods for the delivery of information and gathering feedback were used in the consultation:

- Relevant stakeholders were contacted via registered post and/or email.
- Neighbouring property owners were issued with a Community Engagement Brief (**Attachment 7**) to provide a summary of the proposed operations on MC 4569 and provide contact details for the tenement holder.
- Stakeholders were invited to state any queries or concerns relating to the operations at MC 4569 and were provided with a feedback form and paid return postage envelope.
- Follow phone calls and face-to-face meetings were initiated.

4.1 Landowners of 5203 Main South Road, Myponga (CT 5878/667)

A meeting was held with the owners of CT 5878/667 at their property on 15 November 2024.

Maps of the proposed operations were provided to the landowner on 13 January 2025 and the landowner was requested to provide a waiver of exemption. The landowner signed the waiver (Form 23B) during the meeting.

4.1.1 Concerns raised

No concerns were raised.

4.1.2 Proposed steps to address concerns raised

As no concerns were raised, no proposed additional steps to address concerns are required.

4.1.3 Ongoing engagement preference

The tenement holder regularly engages with the landowner by visiting the homestead, and the landowner is able to contact the tenement holder at any time.

4.2 Neighbouring landowners

Stakeholders identified to be included in the consultation are listed in **Table 9**.

4.2.1 Community engagement brief

Stakeholders were consulted via Registered Post on 18 December 2024 that included:

- A Community Engagement Brief (**Attachment 7**) which included details of the proposed:
 - location of the mining lease
 - quarrying methods
 - duration of mining operations
 - sequence and staging of quarrying and rehabilitation
 - rehabilitation outcomes including conceptual final landform and land use
 - environmental management and regulation
- A Community Concerns and Feedback Form, with stamped return address envelope
- Contact details of the tenement holder.

The purpose of the Community Engagement Brief was to initiate the engagement process in relation to the proposed quarrying operations.

It is anticipated that all stakeholders listed in Table 9 received the Community Engagement Brief with the exception of the owners of 102 Causeway Road, Myponga, as the correspondence was returned to sender and received on 2 January 2025.

Responses were requested by 17 January 2025, and stakeholders were advised that an additional consultation period will occur following the submission of the Mining Lease Application.

Written submissions in response to the Community Engagement Brief were received from the following stakeholders:

- 45 Nunn Road, Myponga
- 162 Nunn Road, Myponga, and
- 5300 Main South Road, Myponga.

Each stakeholder that provided a written submission was provided with a written acknowledgement of receipt of the submission, and the concerns raised in the submissions have been included in **Table 10**.

In addition to the submissions, a petition in relation to the proposed operations was provided by a stakeholder which included 119 signatures (**Attachment 8**). The petition was seeking to gain support from people that use and enjoy the Myponga area to stop the proposal of a Sand Mine [sic] near the Myponga Reservoir and conservation parks (i.e. MC 4569). While the petition did not raise specific concerns, it highlights that many members of the community are sensitive to a proposed quarry in the area.

4.2.2 Follow-up engagement

The following engagement occurred on 13 January 2025 by Macro Environmental Solutions on behalf of the applicant:

- An attempt to visit the owner of 6 Forktree Road was made. The front gate was closed, and the property appeared to be unattended. As a 'beware of dog' sign was posted on the front gate, no attempt to enter the property was made.
- An attempt to visit the owner of 45 Nunn Road was made. The owner was not present and was contacted via phone. Additional details in relation to the proposed operations were provided over the phone and an additional meeting at the property was proposed.
- A visit of the owner of 102 Causeway Road was completed to hand deliver a copy of the Community Engagement Brief (as the documents were returned to sender when initially posted – see **Section 4.2.1**). Further details in relation to the proposed operations and sequence of quarrying were provided, and the view from the western side of the property was inspected to determine potential visual amenity impacts.

The following engagement occurred on 14 January 2025 by Macro Environmental Solutions on behalf of the applicant:

- The owner of 79 Nunn Road was contacted via text message and subsequently made contact via a phone call. The proposed operations were discussed in detail and the property owners were able to raise several queries and outlined their concerns which are included in **Table 10**.

Further communications have been made via text messages and voice messages with the owners of 45 Nunn Road and 79 Nunn Road, and a commitment to meet with both parties at their properties has been made and is in the process of being arranged at the time of submission.

4.2.3 Concerns raised and proposed steps to address concerns raised

Concerns raised and the proposed responses to address the concerns are summarised in **Table 10**.

Table 10 – Summary of concerns raised during consultation and proposed responses

| Topic | Feedback / Concern | Proposed response to address concern |
|----------------------|---|---|
| Air quality and dust | <p>We have a son under 2 years old who has already been prescribed antibiotics and Ventolin inhalers twice in the last 4 months when he has breathed in dust from moving soil on our property. We now completely remove him from any jobs we carry out where there is dust in the air because of the affect it has on his lungs. We can get letters from his doctor to let you know his sensitivity to dust issues. We are worried the quarry dust in the air will affect his health.</p> <p>Our main supply of water for our house is off water tanks, if there is an increase in dust, we are worried that the build-up of dust on our roof that would be washed into our drinking tanks would cause serious problems to our water supply.</p> <p>We have a large amount of solar panels on our home to keep down electricity costs. We don't want to be responsible for the ongoing cleaning of them to keep them working at optimum efficiency.</p> <p>One of the main businesses on the property is running Air BNB accommodation. More dust through our cabins means extra cleaning work and will affect how the business runs. People visit the area because it is pristine if it becomes dusty it will affect our business.</p> <p>We hang our washing for our home and our business outside dust would affect another aspect of our life and business.</p> <p>Another aspect of our business an active truffle farm and there has been a lot of time and money spent on the preparation of the soil to get it to the right PH levels for truffles to grow, we are worried that more dust with the wrong pH levels landing on the ground would undo the preparation process over a long period of time and continue to cover the trees with dust.</p> | <p>The proposed operations are consistent with the operations that have occurred at the Site for several decades without dust complaints being received, and dust emissions from the Site are not proposed to increase.</p> <p>Nearby unsealed roads and driveways are anticipated to generate greater dust at receptor locations that the quarrying operations. The disturbance footprint has been planned to be minimised for what is required for current demand.</p> <p>All site personnel will be instructed to immediately report situations resulting in elevated dust emissions to the Site manager.</p> <p>Stripping topsoil conducted in suitable wind and weather conditions to minimise generation of fugitive dust (i.e. where wind speed and direction will not impact on adjacent residential dwelling).</p> <p>Water is used for dust suppression during the crushing and screening process, and these operations will continue in the area they have been undertaken for many years without impact.</p> <p>Dust generating activities will be modified or ceased under windy conditions (>40kmh) on dry days, or where dust is observed to be leaving the Site with the potential to cause an offsite impact.</p> <p>Internal roads to be well maintained to reduce a build-up of bulldust at the surface.</p> <p>Product in Haul trucks are covered prior to transportation.</p> <p>Vehicle movement around the site will comply with Site speed limits (10 km/h).</p> <p>The compliance criteria for the quarry will include a requirement to undertake dust monitoring in response to unresolved complaints.</p> <p>Further details are provided in Sections 2.15 and 5.1.</p> |
| Water resources | <p>The Myponga Reservoir is a critical water supply for the region, and any mining activities could result in contamination, depletion, or sedimentation of this essential resource.</p> | <p>Quarrying in the existing West Pit, and the existing ancillary operations area, are not located within the same watershed basin as the Myponga Reservoir (MP Drawing 8).</p> |

| Topic | Feedback / Concern | Proposed response to address concern |
|-------|---|--|
| | <p>Proximity to the Reservoir, the edge of the proposed quarry is about 350m to the closest part of Myponga Reservoir, which is a large part of South Australia’s water supply.</p> <p>Our only concern with the proposed quarrying operations expansion is the potential of further contamination to surface water caused through the flow of silt from the quarrying operation during rainfall.</p> <p>All the surface water from the quarry now flows into our property that adjoins the Whittlesea property, and this will continue to occur with the proposed expansion of the quarry site.</p> <p>We have a dam located near the property fence line between Whittlesea’s property and our own which is situated in the creek bed. The dam is for the provision of water for our livestock. The water that currently flows down from the quarry when it is raining is already significantly contaminated with silt and this silt flows into our stock water dam.</p> <p>With the expansion of the quarry, this issue will continue and potentially become worse with the expected further exposure of raw soil during the quarrying expansion operations.</p> <p>We would ask that a contour bank or swale be constructed at the base of the quarry to slow the flow of surface water during rain periods and thereby mitigate the flow of silt into the creek bed and ultimately into our stock water dam.</p> | <p>Quarrying in the proposed East Pit is located in the same watershed basin as the Myponga Reservoir (MP Drawing 8).</p> <p>The proposed quarry design for the East Pit will ensure that all surface water runoff from the disturbance area is internally draining and will not pose a risk to the Myponga Reservoir.</p> <p>Annual inspections are proposed to ensure that surface water runoff from the East Pit is internally draining and that no sediment laden water leaves the MC 4569 area.</p> <p>Annual inspections of the West Pit will be undertaken to identify erosion and potential sediment runoff issues and confirm that no uncontrolled surface water runoff discharge from the Site has occurred.</p> <p>Sampling of water outflowing from the sediment retention dam to be undertaken annually* following rainfall and tested for turbidity levels.</p> <p>*Unless the water level does not cause the dam to overflow in a calendar year.</p> <p>Further details are provided in Sections 2.7, 3.5.7 and 5.15.</p> |
| Noise | <p>Our Air BNB business has approximately 500 guests from around Australia and the world stay with us each year. A big draw card for our accommodation is the fact we are a quiet bush location. We have some guests that book the day before or even on the day for their stay.</p> <p>We are looking to host meditation and yoga retreats on our property which would be affected by the noise from the quarry, especially when the blasting occurs.</p> <p>If we were to get one review about blasting and noise coming from the quarry it would affect our business.</p> | <p>The proposed operations are consistent with the operations that have occurred at the Site for several decades without noise complaints being received, and accommodations within the area have been established with the quarry present on the property.</p> <p>It is noted that the majority of properties in the local area fall under the ‘Rural Zone’ and ‘Productive Rural Landscape Zone’. While these codes encourage tourism developments, they do so in a form that is compatible with existing land uses.</p> <p>As the area is zoned to support rural industry, others sharing the area should expect some agricultural and industrial noise to occur.</p> <p>The intent is to ensure noise emissions from the site are minimised so as to limit impacts on sensitive nearby land uses as far as reasonably practicable.</p> |

| Topic | Feedback / Concern | Proposed response to address concern |
|---|--|--|
| | | <p>Operators to stay in regular communication with the nearby landowners to facilitate the co-existence of businesses within the area.</p> <p>All plant and equipment on Site will be regularly serviced to ensure optimal performance.</p> <p>Operations will be limited to daylight hours and are not proposed to occur on Sundays and Public Holidays.</p> <p>Operations in the East Pit will not occur on Saturdays in response to concerns raised by residents on Nunn Road.</p> <p>Quarrying planning for the East Pit aims to utilised the topography as a barrier to noise emissions from operations within the pit.</p> <p>Operators to stay in regular communication with the landowners to ensure noise impacts are not occurring.</p> <p>Further details are provided in Sections 2.16 and 5.12.</p> |
| <p>Habitat destruction / Native vegetation / Native fauna</p> | <p>The area supports diverse flora and fauna, some of which may be rare, endangered, or endemic. The destruction or fragmentation of these habitats could lead to irreversible losses.</p> <p>We are worried about the trees that are going to be pulled down for this quarry to go ahead. They are probably recognised as significant tree of the area, which would be habitat for local fauna.</p> | <p>A full assessment of the native flora and fauna of the Site has been undertaken, and informed by an Ecological Baseline Survey was undertaken at the Site on 13 January 2025 (Attachment 3).</p> <p>The planning of the Site is centred around the avoidance of habitat destruction by targeting areas with the lowest native vegetation density. This is why the East Pit was proposed rather than an extension of the existing West Pit.</p> <p>A native vegetation planting is proposed along the northern side of the Site.</p> <p>The proposed rehabilitation plans includes the planting of native vegetation to link existing habitat fragments already present at the Site.</p> <p>While 18 blue gum trees are proposed to be cleared over the life of the quarry (approximately 29 years), the final landform is proposed to include a net increase of native habitat at the Site.</p> <p>Further details are provided in Sections 2.8, 2.9, 5.11 and 5.12.</p> |
| <p>Soil and landscape degradation</p> | <p>Mining activities often result in soil erosion, compaction, and long-term damage to the land, which would have lasting consequences for agriculture and natural landscapes.</p> | <p>Soil from the existing surface is proposed to be stripped ahead of quarrying and stockpiled in low windrows adjacent to the quarrying areas ready for rehabilitation.</p> <p>The soil will be controlled for weeds, and regularly inspected to ensure prominent grass coverage has been established and erosion is not occurring.</p> <p>The proposed final landform aims to return the land to a combination of grazing areas and native vegetation woodlands that are consistent with the existing patched of vegetation around the Site.</p> <p>Further details are provided in Section 2.3, 3.3, 3.5.4, 3.8, 5.8 and 5.14.</p> |
| <p>Public health risks</p> | <p>Dust, noise, and potential chemical contamination could significantly impact the physical health of residents.</p> | <p>The proposed operations are consistent with the operations that have occurred at the Site for several decades without dust and noise complaints being received.</p> <p>The quarrying areas have been planned to use the topography to reduce noise emissions from the operating areas.</p> |

| Topic | Feedback / Concern | Proposed response to address concern |
|-----------------------------|---|---|
| | | <p>Crushing and screening operations will continue in the existing ancillary operating area, or on the East Pit floor in Stage 3, which is a similar distance to receptors. As these operations have not caused an impact in the past, the proposed continuation is not expected to cause a health risk to the local community.</p> <p>No chemicals other than fuel and oil (hydrocarbons) are utilised for the operations.</p> <p>All hydrocarbons will be stored in bunded areas in accordance with EPA guidelines and a spill kit will be present at the Site for the duration of the quarry life.</p> <p>Further details are provided in Section 2.15, 2.16, 3.4.4, 3.5.5, 5.1, 5.13 and 5.18.</p> |
| Quality of life | Increased industrial activity, heavy vehicle traffic, and noise pollution would disrupt the peaceful rural character of Myponga. | <p>The proposed operations are consistent with the quarrying that has occurred on EML 5542 since 1988.</p> <p>No increase in industrial activity, vehicle traffic and noise pollution is proposed.</p> <p>It is noted that traffic levels along the adjacent Main South Road are expected to have increased significantly since the commencement of operations at the Site.</p> <p>Further details are provided in Section 2.14.</p> |
| Impact on direct neighbours | Residents along Nunn Road, which directly borders the proposed claim area, will face severe disruptions. These include increased noise, dust, and vibrations from mining operations, as well as potential risks to their water supplies and the safety concerns posed by increased heavy vehicle traffic on local roads. The close proximity of these properties to the mining activities makes the impact on these families particularly acute and unacceptable. | <p>Operations have occurred at the Site since before 1988 and it is understood that this is without causing disruptions to residents along Nunn Road, and the proposed operating methods are consistent with the existing operations.</p> <p>It is noted that the East Pit is closer to two residences on Nunn Road than the existing West Pit, and therefore additional consultation with these residents has been undertaken.</p> <p>With the exception of the southern extent of the East Pit, operations are on the other side of a hill from Nunn Road and therefore impacts to water supplies are not anticipated (Drawing 8 and Drawing 9).</p> <p>Further details are provided in Section 3 and 4.2.2.</p> |
| Agriculture and tourism | Myponga relies heavily on agriculture and eco-tourism. Mining operations may deter visitors and compromise the quality of farmland, threatening the livelihoods of local residents. | <p>The Site is located approximately 3.5km south-west of the Myponga township in and the property and neighbouring properties are zoned for 'Rural Production'.</p> <p>It is acknowledged that tourism operations have been established nearby to the existing quarry, and the management of potential impacts to these businesses, and the establishment and maintenance of open communications with the owners, are considered to be important to ensure all local businesses can operate effectively.</p> <p>The products from the Site are used locally for property improvement works that assist in supporting agriculture and rural living in the area.</p> <p>The only farmland that is proposed to be disturbed is for the East Pit, which is currently used by the landowner for grazing cattle.</p> <p>Visual amenity has been considered as a key management issue for the proposed operations and the quarry planning has been</p> |

| Topic | Feedback / Concern | Proposed response to address concern |
|--|--|--|
| | | <p>undertaken to reduce visual impacts from the Site as far as reasonably practicable.</p> <p>Further details are provided in Section 3, 4.2.2 and 5.8.</p> |
| Property values | <p>The establishment of a mining operation would likely decrease property values in the area, negatively affecting residents' investments and financial security.</p> | <p>The quarry has existed at the Site to several decades. The pre-existing property values are already set in the context of the quarry existing, and impacts to property values are therefore not expected to be impacted.</p> <p>Progressive rehabilitation is proposed to ensure that the disturbance area at the Site is limited to a similar area as the existing Site.</p> <p>Visual amenity has been considered as a key management issue for the proposed operations and the quarry planning has been undertaken to reduce visual impacts from the Site as far as reasonably practicable.</p> <p>Further details are provided in Section 3, 4.2.2 and 5.17.</p> |
| Cultural and heritage significance | <p>Myponga is home to sites of cultural and historical significance, including areas important to the Kurna people, the Traditional Owners of the land. Of particular concern is the reported presence of an Aboriginal burial site on Nunn Road. Disturbing this sacred site would constitute a grave violation of cultural heritage and could cause irreparable harm to the Kurna people's connection to the land. Protecting this site is vital to upholding the values of cultural respect and reconciliation.</p> | <p>A search of the Aboriginal Heritage Register was undertaken for registered Aboriginal Heritage sites within the MC 4569 area and within 5km of the MC 4569 boundary. One site was registered near the Myponga Reservoir.</p> <p>No Aboriginal Heritage sites along Nunn Road were listed on the register. However, no impacts to any sites outside of the proposed disturbance areas will occur.</p> <p>An Aboriginal Heritage Discovery Protocol (Attachment 9) has been prepared to ensure that any incidence of Aboriginal Heritage being encountered during the course of quarrying will be appropriately managed in accordance with the <i>Aboriginal Heritage Act 1988</i>.</p> <p>Further details are provided in Section 2.17 and 5.7.</p> |
| Inadequate consultation and transparency | <p>Many community members feel that the consultation process for this mineral claim has been inadequate. Proper engagement with all stakeholders, including Traditional Owners, residents, and local businesses, is essential to ensure that all voices are heard and considered in the decision-making process.</p> | <p>Agreed.</p> <p>A Community Engagement Brief (Attachment 7) was posted to stakeholders on 18 December 2024 to initiate engagement and provide drawings of the proposed quarrying areas, dimensions and methods. This was within a month of the proposed quarrying plans being completed.</p> <p>The brief included a feedback form with paid postage envelope to allow stakeholders to document and submit concerns, so that they may be included into the quarry proposal document and to ensure that the concerns are adequately addressed.</p> <p>Additional consultation was held, by phone calls and property visits to further explain the proposed operations and discuss the community concerns.</p> <p>Further details are provided in Section 4.2.</p> |
| Drag out and traffic | <p>The entrance to the quarry is on an already hazardous section of the road which has numerous crashes each year, adding more trucks pulling out onto that 100 kmph section of road would be very dangerous.</p> | <p>The site access point has been utilised since the commencement of operations in 1988.</p> <p>Proposed production levels are consistent with those that have already occurring on EML 5542, and no increased truck movements are proposed.</p> |

| Topic | Feedback / Concern | Proposed response to address concern |
|------------------|---|--|
| | | <p>Site staff will monitor drag out levels on a daily basis (when the Site is operational).</p> <p>In the event that an unreasonable build-up of drag out does occur, a street sweeper will be engaged to remove the drag out from Main South Road.</p> <p>Further details are provided in Section 2.12.1, 3.5.1, 5.4 and 5.16.</p> |
| Visual amenity | <p>Part of what the guests come here is to be in nature, we are worried that having the top of this hill disturbed, would affect that. Even with rehabilitation strategies it would still affect the local area for many years to come. Most rehabilitation plans use plants that are slow growing, and while quick growing ones could be used it wouldn't do enough to hide the quarry. While rehabilitation strategies have been proposed, it is important to note the findings of a 2017 Australian Institute Report, which highlighted that mine closure and complete rehabilitation are rare in Australia. The report indicates that the number of abandoned mines across the country is alarmingly high, with an estimated 60,000 abandoned mine sites, raising concerns about the effectiveness of long-term rehabilitation.</p> | <p>The proposed vegetated screening mounds and vegetation screens are anticipated to fully screen views into the quarry from Nunn Road (once established) and to partially screen the views from Main South Road and Forktree Road.</p> <p>The design of the East Pit aims to utilise the topography to screen the view into the pit in Stage 2. Progressive rehabilitation of the southern end of the pit (tree plantings on the benches) are planned to partially screen the views of the southern pit faces as the pit progresses downhill to the north.</p> <p>To ensure the potential visual impacts are understood, a 'View Shed' analysis has been undertaken for sensitive receptor locations within 1km of the Site boundary and the results confirmed during an inspection of the area. The aspects where the Site is well understood, and the placement of vegetation screens and soil mounds has been strategically located to reduce the potential impacts.</p> <p>Ongoing visual amenity monitoring is proposed for the Site to ensure that the visual controls are effective.</p> <p>Soil stripped ahead of mining is proposed to be conserved at the Site and will be reused in the rehabilitation of the Site. It is anticipated that the proposed soil management strategies will lead to positive rehabilitation outcomes for the Site.</p> <p>Progressive rehabilitation monitoring is proposed for the Site to ensure that rehabilitation methods can be assessed, modified if required and proven to be effective during the life of the quarry.</p> <p>Further details are provided in Section 2.3, 2.14, 2.11.4, 3.3, 3.5.4, 3.8, 5.8, 5.14 and 5.17.</p> |
| Community values | <p>We believe the Myponga area is beginning to become a popular destination for people to visit to enjoy the natural beauty of the area. I quote from the Fleurieu Peninsula website page "Uncover the best of the Fleurieu Peninsula where the untamed wildlife thrives amidst stunning landscapes" we really don't believe that a large sand mine on the main road near the reservoir is in line with what will make the area thrive. As we don't agree with the proposal and don't believe it should go ahead, we put a petition in the local café to see how many people agreed with us. We received 120 signatures of support in 17 days. Please see attached.</p> | <p>The Fleurieu Peninsula has many attractive landscapes, and a wide variety of land uses.</p> <p>Having local sources of extractive minerals is critical for the local community for use in the maintenance of local roads, driveways and culverts, and for shed pads, yards and other projects, without needing to pay for expensive haulage costs.</p> <p>The extension to the existing quarry would create 2.52 hectares of additional disturbance on the property, and with progressive rehabilitation, the open area at the end of each stage of quarrying is planned to remain below 3 ha.</p> <p>For comparison, the current disturbance area of the Sellicks Hill Quarry is approximately 95 hectares.</p> <p>As discussed in the response for 'Visual Amenity' above, minimising potential visual impacts to the surrounding area has been a high priority in the planning of the proposed operations.</p> |

| Topic | Feedback / Concern | Proposed response to address concern |
|-------------------|---|---|
| | | Further details are provided in Section 3.2 and 3.3.2.4 . |
| Operating hours | Operational noise from the Site on a Saturday would impact on leisure time. | Further engagement will be undertaken with specific landowners in relation to the proposed operating hours, and limitations as to the operations that may occur, and where they may occur within the Site on Saturdays, is under consideration. Further details are provided in Section 3.4.2 . |
| Production levels | A transfer of the tenement to another party could see an increase in production levels. | The impact assessment featured within this Quarry Proposal is based on an annual average production of 30,000 tonnes. Should the lease be transferred to a third-party who then wish to significantly increase the production rates above this amount, it is understood that the Department for Energy and Mining would require a review of the existing approvals and additional community consultation. The Site will be subject to a robust set of environmental outcomes and measurement criteria that will need to be achieved throughout the operating life irrespective of the volume of production from the Site. Further details are provided in Section 3.2.2 . |

4.3 SA Power Networks

A representative from SA Power Networks (SAPN) was contacted via phone call on 14 January 2025 and advised of the proposed quarrying activities on MC 4569 and that a request that SAPN sign a waiver to allow mining within 150m of the 66kV and 11kV powerlines on the property.

A follow-up email was sent on 14 January 2025 with a signed Form 23A, and links to DEM Information Sheets M69 – M73, and a Form 23B should SAPN agree to sign the waiver.

The signed Form 23B was returned via email on 22 January 2025 and agreed to waive the benefit of exemption subject to the following conditions:

- 24/7 heavy vehicle access must not be impacted – our ability to access our infrastructure must not be restricted.
- Ground levels under our overhead infrastructure/poles must not be altered – including no dumping under our lines/or in the easements.
- No excavation is permitted within 10 metres (horizontally in any direction) of any poles.
- All required clearances set out in the *Electricity (General) Regulations 2012* must be maintained.

4.3.1 Concerns raised

No concerns were raised.

4.3.2 Proposed steps to address concerns raised

As no concerns were raised, no proposed additional steps to address concerns are required.

5 PROPOSED ENVIRONMENTAL OUTCOMES, STRATEGIES, CRITERIA AND MONITORING

An assessment for the Source-Pathway-Receptor (SPR) relationship has been undertaken for each potential impact event in alignment with DEM *Minerals Regulatory Guideline MG2A*.

A pre-control risk assessment and post-control residual risk assessment have also been provided for each impact event. The risk assessment follows a conventional risk assessment process using the matrix shown in **Figure 7**.

| | Consequence (C) | | | | |
|-------------------|-----------------|-----------|--------------|-----------------|------------|
| Likelihood (L) | Trivial (1) | Minor (2) | Moderate (3) | Significant (4) | Severe (5) |
| Very Likely (5) | Medium | High | High | Extreme | Extreme |
| Likely (4) | Low | Medium | High | High | Extreme |
| Possible (3) | Very Low | Low | Medium | High | High |
| Unlikely (2) | Very Low | Very Low | Low | Medium | High |
| Very unlikely (1) | Very Low | Very Low | Very Low | Low | Medium |

Figure 7 – Risk assessment matrix used for the potential impact assessments

The definitions displayed in **Table 11** were used to assist in undertaking the risk assessment for each potential impact event.

Table 11 – Risk assessment matrix definitions

| Likelihood | Definition | Consequence | Definition |
|---------------|--|-------------|--|
| Very Likely | It is expected to occur on several occasions. | Severe | Would cause irreversible environmental damage and/or an extreme level of environmental or social harm. |
| Likely | It is expected to occur at some point in the future. | Significant | Would cause extensive environmental damage requiring significant resources and/or time to rectify and/or a high level of environmental or social harm. |
| Possible | It is a possibility and would not be totally unexpected. | Moderate | Would cause some environmental damage requiring moderate resources and/or time to rectify and/or a moderate level of environmental or social harm. |
| Unlikely | It is not expected to occur but could potentially occur. | Minor | Would cause minor environmental damage requiring some or no resources and/or time to rectify and/or a minor level of environmental or social harm. |
| Very unlikely | Has never occurred previously but is not impossible. | Trivial | Would cause negligible environmental damage requiring no resources and/or time to rectify and/or a negligible level of environmental or social harm. |

5.1 Air quality

5.1.1 Context

Air quality in the local area is expected to be of generally good quality.

The area has several unsealed roads that will contribute to levels of dust within the atmosphere.

Local air quality may also be impacted by local and large regional bushfires. Domestic combustion heaters located in dwellings located in the local area, may be expected to cause minor air quality impacts during the winter months.

Potential dust sources from mining operations at the Site include:

- rock extraction
- crushing and screening
- soil and stripping, stockpiling, and respreading
- product loading into haul trucks
- vehicle movements over unpaved surfaces
- wind erosion over exposed areas.

Applicable Legislation and Standards:

- *Environment Protection Act, 1993*
- Environment Protection (Air Quality) Policy 2016.

5.1.2 Potential impact events

Potential impact events for Air quality are also provided in **Table 12** and **Table 13** and are supported by the discussion in **Section 2.2** and **Section 2.15**.

Table 12 – Air quality source, pathway, and receptor identification during operations

| Potential Impact Event – Air quality operational 1 (AQO1): Nuisance dust impacts on nearby sensitive receptors caused by quarrying operations | | | | |
|--|---|--------------------|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Dust from bulldozer operations, vehicle movements, product loading, crushing, screening, soil stripping, soil replacement and wind erosion. | Transport of dust through the air. | Nearby residences. | Yes | L = 3 C = 2 Risk = Low |
| Uncertainty and Assumptions | Assessment based on Site observations and in consideration of proposed production rates. The quarrying rates and methods will be consistent with those undertaken on EML 5542 and therefore very low uncertainty exists in relation to the potential impacts. It is assumed that potential dust emissions from the East Pit will be consistent with those from the existing West Pit. | | | |
| Sensitivity to Change | Dust emissions are directly proportionate from the rate of production from the Site, and it is expected that a moderate sensitivity to change the impact is associated with a change in production levels. | | | |
| Justification for the SPR confirmation/non confirmation | The source, pathway and receptor have been confirmed following an inspection of the Site and review of aerial imagery. | | | |

Table 13 – Air quality source, pathway, and receptor identification post-completion

| Potential Impact Event – Air quality closure 1 (AQC1): Nuisance dust impacts on nearby sensitive residences caused by dust generated from exposed surfaces on the final landform | | | | |
|---|--|--------------------|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Dust from wind erosion. | Transport of dust through the air. | Nearby residences. | Yes | L = 1 C = 2 Risk = Very low |
| Uncertainty and Assumptions | Rehabilitation will successfully establish enough vegetation cover to prevent significant wind erosion at the Site. The exposed areas at the existing Site are resistant to wind erosion without vegetation at the surface. | | | |
| Sensitivity to Change | Low sensitivity that climatic impacts could reduce the ability for vegetation growth and could increase the likelihood of areas exposed to wind erosion. | | | |
| Justification for the SPR confirmation/non-confirmation | The source, pathway and receptor have been confirmed following an inspection of the Site and review of aerial imagery. | | | |

5.1.3 Control and management strategies

The control and management strategies to mitigate potential impacts or to reduce impacts to acceptable levels are listed in **Table 14**.

Table 14 – Control and management strategies for Air quality

| Control and management strategy | Impact event | Uncertainty and assumptions |
|---|---|--|
| Minimise the disturbance footprint to what is required for current mining. | AQO1 | High certainty to reduce wind erosion surface. |
| All site personnel (if employed in the future) will be instructed to immediately report situations resulting in elevated dust emissions to the Site manager. | AQO1 | High certainty to reduce wind erosion surface. |
| Stripping topsoil conducted in suitable wind and weather conditions to minimise generation of fugitive dust (i.e. where wind speed and direction will not impact on adjacent residential dwelling). | AQO1 | High certainty to reduce dust emissions during topsoil stripping. |
| Undertake progressive rehabilitation in accordance with the staged mining and rehabilitation plans. | AQO1 & AQC1 | High certainty to reduce wind erosion surface. |
| Water is used for dust suppression during the crushing and screening process. | AQO1 | High certainty to reduce operational dust emissions. |
| Dust generating activities will be modified or ceased under windy conditions (>40kmh) on dry days, or where dust is observed to be leaving the Site with the potential to cause an offsite impact. | AQO1 | Modifying or ceasing activities to reduce dust generation is a proven control measure. |
| Internal roads to be well maintained to reduce a build-up of bulldust at the surface. | AQO1 | High certainty to reduce dust emissions from transport. |
| Product in Haul trucks are covered prior to transportation. | AQO1 | High certainty to reduce dust emissions from transport. |
| Vehicle movement around the site will comply with Site speed limits (10 km/h). | AQO1 | Moderate certainty to reduce wheel generated dust. |
| Post-control risk assessment | | |
| AQO1 – Nuisance | L1, C2 = Very low | |
| Description of the likely impact | No noticeable dust deposition impacts from the Site at the nearest receptor location during the operational phase. As control strategies are required to reduce the risk level from <i>Low</i> to <i>Very low</i> , the inclusion of an environmental outcome and measurement criteria is deemed appropriate. | |
| AQC1 – Nuisance | L1, C1 = Very low | |
| Description of the likely impact | No noticeable dust deposition impacts as a result of wind erosion from the Site post-closure are anticipated. As the risk of impact is expected to be <i>Very Low</i> before the implementation of control strategies, the inclusion of an environmental outcome and measurement criteria is not considered necessary. | |

5.1.4 Outcome and measurement criteria

The operational environmental outcome and measurement criteria for Air quality is provided in **Table 15**.

Table 15 – Operational Air quality environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|--|---|---|--|---|
| <p>The Tenement Holder must, during construction and operation, ensure that there are no public health and/or nuisance impacts from dust generated by mining operations.</p> | | <p>Site records will demonstrate that any air quality related complaints are acknowledged within 48 hours and investigated within seven days.</p> <p>In response to a complaint¹, control and management strategies will be reviewed and updated as required and Site records will show the updates were provided to the complainant.</p> <p>Air quality monitoring is to occur at locations, and using methods, as agreed with the regulating agency, to demonstrate:</p> <ul style="list-style-type: none"> that mining operations do not cause dust deposition (ash content) to exceed 4g/m²/month (rolling annual average), when monitored in accordance with Australian Standard AS 3580.10.1 Methods for sampling and analysis of ambient air – Determination of particulates – Deposited matter – Gravimetric method, and/or that mining operations do not cause ground level concentrations of PM₁₀* to exceed 50µg/m³ over a 24-hour period at locations and using methods as agreed with the lead regulating agency. <p><i>*PM₁₀ – Particulate matter with an aerodynamic diameter of 10 micrometres or less.</i></p> <ul style="list-style-type: none"> Air quality monitoring will be undertaken until such time that the regulating agency provides a formal notification that the monitoring is no longer required due to a sustained period of compliance. | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| AQO1 - Nuisance | Complaint records. | Electronically filed. | Ongoing. | Not applicable. |
| | Air quality monitoring (dust deposition and/or continuous PM ₁₀ monitoring). | At location agreed by the lead regulating agency, which is considered to be the best available representation of the dust complainant location. | Dust deposition: Monthly sampling (+/- 2 days); Continuous monitoring for PM ₁₀ for a period as agreed with the lead regulating agency. | Background dust deposition and PM ₁₀ levels. |

¹ Note that in relation to all complaint-based measurement criteria within Section 5, that only non-vexatious complaints will be responded to. A complaint will be deemed vexatious if the regulator agrees that the complaint is a repeat complaint that, in the opinion of the regulator, that compliance has already been demonstrated.

5.2 Blasting

5.2.1 Context

Blasting will occur infrequently, approximately once per year or less.

All blasting is undertaken by qualified staff and/or contractors in accordance with Australian Standard 2187.2-2006 – Part 2: Use of Explosives. The blasting management and safety measures will be prepared and executed by the contractor.

No explosives are stored on Site and only ordered and used as required and supplied by third party providers.

All neighbouring property owners will be contacted and informed about each blast via text message approximately 24-hours prior to the blast.

Blasting will be arranged in consultation with the landowners to ensure that livestock and workers are relocated away from the quarry.

All operations on EML 5542 have occurred within 200m of a transmission line pole without causing impacts.

Blast Guards are situated at the property access point to ensure no one enters the property while the blast is undertaken.

5.2.2 Potential impact events

The potential impact events in **Table 16**, **Table 17** and **Table 18** are based on the blasting operations as discussed in **Section 3.3.4**.

Table 16 – Blasting source, pathway and receptor identification for vibration

| Potential Impact Event – Blasting operational 1 (BO1): Unacceptable vibrational impact to a receptor from blasting undertaken on the Site | | | | |
|--|---|--|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Blasting activities on the Site. | Movement of vibration through the ground. | Nearby residence and transmission line poles. | Yes. | L = 3 C = 3 Risk = Medium. |
| Uncertainty and Assumptions | | <p>It is assumed that a pathway through the geology exists between the quarry pit and all sensitive receptors.</p> <p>The blasting volumes and methods will be consistent with those undertaken on EML 5542 and therefore very low uncertainty exists in relation to the potential impacts.</p> <p>It is assumed that potential blasting impacts from the East Pit will be consistent with those from the existing West Pit.</p> <p>It is assumed that by achieving the vibration standards for human comfort, that the structural damage standards, which allow for greater vibration, will also be achieved at the power pole locations.</p> | | |
| Sensitivity to Change | | The proposed blasting methods have been successfully implemented at the Site and are not expected to have any sensitivities to change. | | |
| Justification for the SPR confirmation/non-confirmation | | The source, pathway and receptor have been confirmed following an inspection of the Site and review of aerial imagery. | | |

Table 17 – Blasting source, pathway and receptor identification for airblast overpressure

| Potential Impact Event – Blasting operational 2 (BO2): Unacceptable airblast overpressure impact to a receptor from blasting undertaken on the Site | | | | |
|--|--|--|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Blasting activities on the Site. | Movement of blast sound through the air. | Nearby residents. | Yes. | L = 3 C = 2 Risk = Medium. |
| Uncertainty and Assumptions | | The distance between the blast location and receptor can be accurately measured therefore no uncertainty or assumptions exist. | | |
| Sensitivity to Change | | <p>The proposed blasting methods have been successfully implemented at the Site and are not expected to have any sensitivities to change.</p> <p>It is assumed that potential blasting impacts from the East Pit will be consistent with those from the existing West Pit.</p> | | |
| Justification for the SPR confirmation/non-confirmation | | The source, pathway and receptor have been confirmed following an inspection of the Site and review of aerial imagery. | | |

Table 18 – Blasting source, pathway and receptor identification for flyrock

| Potential Impact Event – Blasting operational 3 (BO3): Flyrock from blasting undertaken on the Site leaves the mining area with the potential to injure people or animals or damage property | | | | |
|---|--------------------------------------|--|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Blasting activities on the Site. | Movement of flyrock through the air. | Nearby residents, transmission lines and transmission line poles. | Yes. | L = 2 C = 5 Risk = High. |
| Uncertainty and Assumptions | | The distance between the blast location and the identified receptors can be accurately measured therefore no uncertainty or assumptions exist. All blasts will be designed to minimise the likelihood of flyrock as per the Australian Standards. | | |
| Sensitivity to Change | | The proposed blasting methods have been successfully implemented at the Site and are not expected to have any sensitivities to change. | | |
| Justification for the SPR confirmation/ non-confirmation | | The source, pathway and receptor have been confirmed following an inspection of the Site. | | |

5.2.3 Control and management strategies

The control and management strategies to mitigate potential impacts or to reduce impacts to acceptable levels are listed in **Table 19**.

Table 19 – Control and management strategies for Blasting

| Control and management strategy | Impact event | Uncertainty and assumptions |
|--|---------------------|---|
| All blasting to be undertaken by licenced staff and/or contractors and in accordance with Australian Standard (AS 2187.2). | BO1, BO2, BO3 | This control has a high certainty of effectively ensuring blasts are undertaken to a high standard. |
| Blasting activities will be undertaken in accordance with the contractors blasting safety management systems and control strategies. | BO1, BO2, BO3 | This control has a high certainty of reducing potential blast impacts. |
| All blasts are to be recorded in Site Records, detailing timing, size, number of blast holes, location, quantity and type of explosives used. | BO1, BO2, BO3 | This control has a high certainty of enabling an effective investigation of the cause of any blasting related impacts. |
| All blasting will be undertaken on weekdays with blasts initiated within normal working hours (8:00am to 5:00pm). | BO1, BO2 | It is assumed that blasting during business hours would reduce the likelihood of potential impacts. |
| Neighbouring property owners are notified approximately 24 hours before the scheduled day and time of blasts that may potentially be heard or felt outside of the Site boundary. | BO1, BO2, BO3 | High certainty to reduce the likelihood of complaints and ensure the Public are aware of the exclusion zone. |
| No explosives are stored within the MC area. | BO1, BO2, BO3 | This control has a high certainty of being effective as there is no risk of explosives being taken from the lease area. |

| Control and management strategy | | Impact event | Uncertainty and assumptions |
|---|---|---------------|--|
| No blasting will occur within 100m of a transmission line pole. | | BO1, BO3 | This control has a high certainty of preventing structural damage to the transmission line and pole integrity. |
| Safety protocols are in place to ensure that the pit area and exclusion zone is vacant ahead of any blasts. | | BO3 | This control has a high certainty of preventing accidental injury due to blasting. |
| Monitoring for vibration and overpressure will be undertaken near the closest residents should a complaint be received. | | BO1, BO2 | It is assumed that the monitoring locations are representative of receptor locations. |
| Efficient, effective, and safe blasting technology will be used in accordance with AS 2187.2. | | BO1, BO2, BO3 | This control has a high certainty of being effective. |
| Post-control risk assessment | | | |
| BO11 – Vibration | L3, C2 = Low | | |
| Description of the likely impact | Potentially noticeable Vibration causing no adverse impacts from blasting. As control strategies are required to reduce the risk level from <i>Medium</i> to <i>Very low</i> , the inclusion of an environmental outcome and measurement criteria is deemed appropriate. | | |
| BO2 – Airblast overpressure | L3, C1 = Very low | | |
| Description of the likely impact | Potentially noticeable Vibration causing no adverse impacts from blasting. As control strategies are required to reduce the risk level from <i>Medium</i> to <i>Low</i> , the inclusion of an environmental outcome and measurement criteria is deemed appropriate. | | |
| BO3 – Flyrock | L1, C5 = Medium | | |
| Description of the likely impact | No Flyrock occurs as a result of blasting. As control strategies are required to reduce the risk level from <i>High</i> to <i>Medium</i> , the inclusion of an environmental outcome and measurement criteria is deemed appropriate. | | |

5.2.4 Outcome and measurement criteria

The environmental outcome and measurement criteria for Blasting is provided in **Table 20**.

Table 20 – Blasting environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|---|---|--|---------------------------------------|---|
| <p>The tenement holder must, during construction and operation, ensure there are no adverse impacts from airblast, flyrock or vibration caused by blasting to:</p> <ul style="list-style-type: none"> • public safety • human comfort • third party property (including stock) • adjacent land use • adjacent infrastructure and operations • adjacent public roads • aircraft • other receptors. | | <p>Site records will demonstrate that any blasting related complaints regarding vibration and/or airblast overpressure are acknowledged within 48 hours with the complaint investigated within seven days.</p> <p>In response to the complaint, control and management strategies will be reviewed and updated as required and Site records will show the updates were provided to the complainant and/or monitoring for vibration and airblast overpressure will be undertaken at or near the complainants location to demonstrate that peak sound pressure (overpressure) is less than 115 dB(A) for 95% of blasts and less than 120dB(A) for 100% of blasts, and ground vibration is less than 5 mm/s for 95% of blasts and less than 10 mm/s for 100% of blasts.</p> <p>No evidence of flyrock observed outside of the Site area during post-blasting inspections.</p> <p>Site records will confirm that no blasting was undertaken within 100m of a transmission line pole.</p> | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| BO1 & BO2 – Vibration and airblast overpressure | Complaint records. | Electronically filed. | Ongoing. | Not applicable. |
| | Records from vibration and airblast overpressure monitoring. | At or near the complainant’s location (as agreed with the Mining Regulator). | Up to 3 blasts following a complaint. | AS 2187.2 human comfort standards. |
| BO3 - Flyrock | Records from post-blast inspections of the Site boundary near the blast area. | Outside of the Site boundary. | Following each blast. | Not applicable. |
| BO1 & BO3 – Vibration and flyrock | Blasting records showing blast locations. | Electronically filed. | For each blast. | Transmission line pole 100m buffers shown in MP Drawing 25 . |

5.3 Caves

5.3.1 Context

The *Heritage Places Act 1993*, states that a person must not excavate or disturb a State Heritage Place designated as a place of geological, palaeontological or speleological significance without a permit from the South Australian Heritage Council.

As stated in DEM Mineral Regulatory Guideline MG38, ‘It is important to identify the presence of caves within or near to the application area, especially those within limestone or karst areas, as caves may be a safety risk or of archaeological, cultural scientific or aesthetic value’ (Department for Energy and Mining, 2021).

A search of the South Australian Heritage Places Database did not identify any heritage listed caves within the District Council of Yankalilla Council area.

No evidence of caves or karst landforms has been observed within the underlying EML 5542 area, and none are expected to be encountered by the shallow mining operation associated with MC 4569.

Applicable Legislation and Standards:

- *South Australian Mining Act, 1971*
- *Heritage Places Act 1993.*

5.3.2 Potential impact events

Potential impact events for caves are provided in **Table 21** and are supported by the discussion in **Section 2.10**.

Table 21 – Caves source, pathway, and receptor identification during operations

| Potential Impact Event – Caves operational 1 (CO1): Damage to a cave is caused by mining operations | | | | |
|--|---------------------------------------|--|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Extraction/earthmoving operations using heavy machinery. | Direct physical contact or vibration. | A significant cave. | Yes | L = 2 C = 3 Risk = Low |
| Uncertainty and Assumptions | | It is assumed that caves could potentially be present within the local area, that there is the potential for caves to be present within the Site boundary. | | |
| Sensitivity to Change | | Should a cave be encountered at the Site the likelihood of finding additional caves may increase. | | |
| Justification for the SPR confirmation/non confirmation | | The source, pathway and receptor have been confirmed following a review of the Site geology and knowledge of the caves in the surrounding area. | | |

5.3.3 Control and management strategies

The control and management strategies to mitigate potential impacts or to reduce impacts to acceptable levels are listed in **Table 22**.

Table 22 – Control and management strategies for Caves

| Control and management strategy | Impact event | Uncertainty and assumptions |
|--|---------------------|--|
| Operators are aware of the requirements to stop work and report any observations of a cave opening encountered during mining operations. | CO1 | High certainty to ensure caves within the tenement are reported and protected prior to assessment. |
| Annual inspections are undertaken of the pit area for potential cave openings. | CO1 | High certainty to ensure caves within the tenement are reported and protected prior to assessment. |

| Post-control risk assessment | |
|----------------------------------|--|
| CO1 – Impacts to caves | L2, C1 = Very low |
| Description of the likely impact | <p>No damage to any caves encountered due to continued operations in the area prior to receiving written authorisation from the Mining Regulator.</p> <p>As control strategies are required to reduce the risk level from <i>Low</i> to <i>Very low</i>, the inclusion of an environmental outcome and measurement criteria is deemed appropriate.</p> |

5.3.4 Outcome and measurement criteria

The operational environmental outcome and measurement criteria for Caves is provided in **Table 23**.

Table 23 – Operational Caves environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|---|---|---|--------------------------------|--------------------------|
| <p>The Tenement Holder must, during construction and operation, ensure no unauthorised damage to caves of significance as a result of mining operations</p> <p><i>Note: for the purpose of this outcome the term "caves" includes any underground opening or cavity with a cross-sectional area greater than 0.25m², and a minor axis measuring greater than 0.4 metres.</i></p> | | <p>Records will demonstrate that annual inspections for caves are conducted.</p> <p>Records will demonstrate that following an observation of a cave, work ceased in the area of the cave until such time that the cave is assessed by a suitably qualified expert endorsed by the Mining Regulator.</p> <p>Records will demonstrate that work only recommenced in the area of the cave following written authority was provided by the Mining Regulator.</p> | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| CO1 | Records from inspections of the pit area for caves. | Pit area. | Annually. | Not applicable. |
| | Records relating to communications and actions taken following the discovery of a cave at the Site. | Electronically filed. | Following discovery of a cave. | Not applicable. |

5.4 Drag out

5.4.1 Context

The Site is accessed from an entrance point on the sealed section of Main South Road.

Haul trucks will travel using the existing well defined internal access track associated with the underlying EML 5542, approximately 250m from the northern boundary of the MC area before entering the public road intersection.

The journey along the access track allows for any clods of mud to fall from the tyres prior to reaching the public road.

Applicable Legislation and Standards:

- *South Australian Mining Act, 1971*
- *South Australian Road Safety Act, 1961.*

5.4.2 Potential impact events

Potential impact events for drag out are provided in **Table 24** and are supported by the discussion in **Section 3.5.1**.

Table 24 – Drag out source, pathway, and receptor identification during operations

| Potential Impact Event – Drag out operational 1 (DOO1): Drag out impacts on public road users | | | | |
|--|--|--|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Increased safety risk to public road users due to drag out from the Site. | Vehicles travelling from Site to the public roads. | Public road users. | Yes. | L = 2 C = 4 Risk = Medium |
| Uncertainty and Assumptions | | The access track and truck volumes will be consistent with those associated with current operations on EML 5542 and therefore very low uncertainty exists in relation to the potential impacts. | | |
| Sensitivity to Change | | Dragout from the Site could increase in the volume of vehicle movements from the Site. It is expected that a large increase would be required to cause an increase in impact and therefore the sensitivity to change is low. | | |
| Justification for the SPR confirmation/ non-confirmation | | The source, pathway and receptor have been confirmed following an inspection of the Site. | | |

5.4.3 Control and management strategies

The control and management strategies to mitigate potential impacts or to reduce impacts to acceptable levels are listed in **Table 25**.

Table 25 – Control and management strategies for Drag out

| Control and management strategy | Impact event | Uncertainty and assumptions |
|--|---------------------|--|
| Haul trucks and light vehicles use well defined access tracks when on the Site. | DOO1 | High certainty to prevent mud from sticking on tyres. |
| All vehicles travel along a 250m internal access road before entering the public road. | DOO1 | It is assumed that clods of mud present will be dislodged during the journey along the access track. |
| Site staff will monitor drag out levels on a daily basis (when the Site is operational). | DOO1 | High certainty to identify and proactively address drag out issues. |

| Control and management strategy | Impact event | Uncertainty and assumptions |
|--|---|---|
| In the event that an unreasonable build-up of drag out does occur, a street sweeper will be engaged to remove the drag out from Main South Road. <i>*Unreasonable build-up is defined as build up that causes visible dust haze and/or slippery conditions for road users, or another definition as formally provided by the regulator.</i> | DOO1 | High certainty to address short-term drag out issues. |
| Annual monitoring of the Site Access Point will be undertaken to ensure no excessive build-up of drag out on the road or evidence of sediment build-up on road verges as a result of drag out is present. | DOO1 | Moderate certainty to identify and address drag out issues. |
| Post-control risk assessment | | |
| DOO1 – Drag out | L1, C3 = Very low | |
| Description of the likely impact | Unacceptable build ups drag out from the Site during the operational phase are rare and efficiently addressed in the case that they occur. As control strategies are required to reduce the risk level from <i>Medium</i> to <i>Very low</i> , the inclusion of an environmental outcome and measurement criteria is deemed appropriate. | |

5.4.4 Outcome and measurement criteria

The environmental outcome and measurement criteria for Traffic is provided in **Table 26**.

Table 26 – Drag out environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|--|---|--|---------------------------------------|--------------------------|
| The tenement holder must, during construction and operation, ensure there are no public safety, or nuisance impacts off the land that are caused by drag out of dirt, mud or other material onto roads associated with quarry related traffic. | | <p>Site records will demonstrate that any drag out related complaints are acknowledged within 48 hours and investigated within seven days.</p> <p>In response to the complaint, control and management strategies will be reviewed and updated as required and Site records will show the updates were provided to the complainant and/or the Mining Regulator.</p> <p>Site records demonstrate that all traffic accidents involving the public that are allegedly caused by drag out from the Site are recorded.</p> <p>An investigation of each incident is undertaken by a suitably qualified independent third-party within 30 days (or other time as agreed with the lead regulating agency) and demonstrates that the incident was not caused as a result of drag out from the Site.</p> | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| DOO1 | Complaint records. | Electronically filed. | Ongoing. | Not applicable. |
| DOO1 | Site records (incident register) and investigation reports. | Electronically filed, Site access point and section of the road within 50m. | Within 30 days of a traffic incident. | Not applicable. |

5.5 Fire

5.5.1 Context

The Site is surrounded by dense stands of vegetation particularly to the south that have a significant fuel load for a fire.

Outside of the Site, the land consists of grass covered grazing paddocks stands of vegetation, with forestry to the east.

The landowner’s residence is located within the northern boundary of the CT, and other dwellings are located on the neighbouring properties.

Any potential ignition sources associated with mining operations (e.g. a vehicle fire caused by a mechanical fault) will be located within the mining area away from potential fire fuel sources.

The Site and surrounding area are located within the Bushfire (High Risk) Hazards Overlay pursuant to the Planning and Design Code (Government of South Australia, 2024g).

Access to the Site and daily operations will be informed by Country Fire Service (CFS) fire danger ratings and warnings.

Applicable Legislation and Standards:

- *South Australian Mining Act, 1971*
- *South Australian Fire and Emergency Services Act, 2005*
- *South Australian Local Government Act 1999.*

5.5.2 Potential impact events

Potential impact events for Fire are provided in **Table 27**.

Table 27 – Fire source, pathway, and receptor identification during operations

| Potential Impact Event – Fire operational 1 (FO1): Fire caused by operations spreads from the Site and causes damage to third-party property and/or injury to the public | | | | |
|---|--|--|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Fire caused by sparks from hot works or accidental vehicle fire. | Fire spreading along the surface or airborne embers or fire spread through grasses outside of the mining areas. | Onsite native vegetation and fauna, the landowner, neighbouring property owners. | Yes. | L = 2 C = 5 Risk = High |
| Uncertainty and Assumptions | Assessment based on Site-based observations. | | | |
| Sensitivity to Change | Variations in climate that lead to increased dry and hot period(s) could increase the ease at which vegetation will catch fire if exposed to an ember. | | | |
| Justification for the SPR confirmation/non-confirmation | The source, pathway and receptor have been confirmed following an inspection of the Site and review of aerial imagery. | | | |

5.5.3 Control and management strategies

The control and management strategies to mitigate potential impacts or to reduce impacts to acceptable levels are listed in **Table 28**.

Table 28 – Control and management strategies for Fire

| Control and management strategy | Impact event | Uncertainty and assumptions |
|---|--|--|
| Machinery operation and any hot works are not undertaken near vegetated areas. | FO1 | High certainty to prevent accidental fires from spreading. |
| Fuel and other flammable liquids are appropriately stored in hardstand areas away from vegetation and fitted with a fire extinguisher. | FO1 | High certainty to prevent accidental fires occurring from collisions with flammable liquids. |
| Machinery is well maintained and fitted with fire extinguishers. | FO1 | High certainty to prevent accidental fires from spreading. |
| Operations follow the warning and advice issued by the CFS and access for all emergency vehicles will be provided and maintained at all times through the site. | FO1 | High certainty to ensure Site activities are undertaken in consideration of fire dangers. |
| No hot works will be undertaken on a total fire ban day. | FO1 | High certainty to prevent accidental fires from occurring. |
| Water is available in pressure fed hoses from the fuel tanks onsite. | FO1 | Moderate certainty to prevent accidental fires from spreading. |
| Post-control risk assessment | | |
| FO1 – Fire | L1, C5 = Medium | |
| Description of the likely impact | <p>Any incidents of accidental fire will be controlled to prevent the fire leaving the Site.</p> <p>As control strategies are required to reduce the risk level from <i>High</i> to <i>Medium</i>, the inclusion of an environmental outcome and measurement criteria is deemed appropriate.</p> | |

5.5.4 Outcome and measurement criteria

The environmental outcome and measurement criteria for Fire is provided in **Table 29**.

Table 29 – Fire environmental outcome and measurement criteria

| Environmental outcome | Measurement criteria (outcome achievement) |
|---|--|
| The tenement holder must, during construction and operation, ensure there are no public injuries and or deaths, no adverse impacts to adjacent land use and no unauthorised damage to public or third-party private property and infrastructure as a result of fires caused by mining operations that could have been reasonably prevented. | An investigation by a suitably qualified person into a fire that starts on the tenement that result in public injuries and or deaths, adverse impacts to adjacent land use, or unauthorised damage to public or third-party private property and infrastructure demonstrates that the tenement holder could not have reasonably prevented the incident from occurring. |

| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
|---------------------|--|---|--|--------------------------|
| FO1 – Fire incident | All fires ignited within the tenement boundaries are recorded. Any fire that ignited within the mining area that spreads outside of the mining area will be notifiable as an incident and will be investigated by a suitably qualified person to determine if the fire could have been reasonably prevented by the tenement holder. | Fire ignition location on the Site and surrounding areas. | Following a fire. An investigation report is to be provided to the lead regulating agency within 30 days of the incident (unless otherwise agreed with the lead regulating agency). | Not applicable. |

5.6 Groundwater

5.6.1 Context

An overview of the Groundwater conditions relevant to the Site is discussed in **Section 2.6**.

The Site is located within the Western Mount Lofty Ranges Prescribed Water Resources Area.

The eastern portion of the Site is located within the Mount Lofty Ranges Water Protection Area with Priority Areas).

The Site is not located within the Murray-Darling Basin Boundary or a prescribed wells area.

Several GDEs are located in the vicinity of the Site (**MP Drawing 6**).

As the proposed lowest elevation of quarrying operations is 255m AHD, the minimum buffer to groundwater is expected to be approximately 12m based on the highest local RSWL measured at 6527-1025.

Applicable Legislation and Standards:

- South Australian Environment Protection (Water Quality) Policy 2015
- *Water Act, 2007*
- *Landscape South Australia Act, 2019*
- South Australian Environment Protection Authority Liquid Storage Guidelines: Bunding & Spill Management (EPA, 2016).

5.6.2 Potential impact events

Potential impact events for Groundwater are provided in **Table 30** and **Table 31** and are supported by the discussion in **Section 2.6**.

Table 30 – Groundwater quality source, pathway, and receptor identification during operations

| Potential Impact Event – Groundwater operational 1 (GWO1): Groundwater contamination caused by mining operations. | | | | |
|--|---|-----------------------------|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Groundwater contamination caused by hydrocarbon spills infiltrating into the ground. | Ground. | GDEs and groundwater users. | Yes. | L = 1 C = 4 Risk = Low. |
| Uncertainty and Assumptions | Assessment made on Site based observations and data from government databases. It is assumed that the data available on WaterConnect is of acceptable accuracy. | | | |
| Sensitivity to Change | As the buffer to groundwater is approximately 12m, a very large change would be required to increase the likelihood for potential groundwater impacts. | | | |
| Justification for the SPR confirmation/non-confirmation | The source, pathway and receptor have been confirmed following an inspection of the Site and a review of available groundwater data. | | | |

Table 31 – Groundwater quantity source, pathway and receptor identification during operations and closure

| Potential Impact Event – Groundwater operational 2 (GWO2) and Groundwater closure 1 (GWC1): A loss of groundwater caused by mining operations. | | | | |
|---|---|-----------------|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Groundwater evaporation from or through the pit floor reduces available groundwater to groundwater users or GDEs. | Evaporation from exposure to the atmosphere. | Nearby GDEs. | Yes. | L = 2 C = 3 Risk = Low. |
| Uncertainty and Assumptions | Assessment made on Site based observations and data from government databases. It is assumed that the data available on WaterConnect is of acceptable accuracy. | | | |
| Sensitivity to Change | As the buffer to groundwater is approximately 12m, a very large change would be required to increase the likelihood for potential groundwater impacts. | | | |
| Justification for the SPR confirmation/non-confirmation | The source, pathway and receptor has been confirmed following an inspection of the Site and a review of available groundwater data. | | | |

5.6.3 Control and management strategies

The control and management strategies to mitigate potential impacts or to reduce impacts to acceptable levels are listed in **Table 32**.

Table 32 – Control and management strategies for Groundwater

| Control and management strategy | Impact event | Uncertainty and assumptions |
|--|---|--|
| Conduct mining operations consistently with the proposed pit depths in the mining and rehabilitation plans. | GW01, GW02, GWC1. | High certainty to prevent any risk of groundwater impacts. |
| Undertake regular monitoring of the pit floor levels. | GW01, GW02, GWC1. | High certainty to prevent any risk of groundwater impacts. |
| All spillages and hazardous materials are cleaned up immediately. | GW1 | High certainty to prevent contamination of surface water runoff. |
| All chemicals, fuels and oils are stored in bunded areas. | GW1 | High certainty to prevent contamination of surface water runoff. |
| Tenement holder to maintain records of any chemical or fuel spills and to record any stop work incidents due to interception with groundwater. | GW01, GW02, GWC1. | High certainty to ensure potential impacts are identified early and appropriately addressed. |
| Post-control risk assessment | | |
| GW01 – Groundwater quality | L1, C3 = Very low | |
| Description of the likely impact | Mining operations do not cause an adverse impact to groundwater and groundwater users. As control strategies are required to reduce the risk level from <i>Low</i> to <i>Very low</i> , the inclusion of an environmental outcome and measurement criteria is deemed appropriate. | |
| GW02 & GW01 – Groundwater quantity | L1, C3 = Very low | |
| Description of the likely impact | Mining operations will not occur at a depth whereby groundwater quantity impacts can occur. As control strategies are required to reduce the risk level from <i>Low</i> to <i>Very low</i> , the inclusion of an environmental outcome and measurement criteria is deemed appropriate. | |

5.6.4 Outcome and measurement criteria

The environmental outcome and measurement criteria for Groundwater quality is provided in **Table 33**.

Table 33 – Groundwater environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|--|---|---|-----------|------------------------------------|
| The Tenement Holder must ensure there is no adverse impact to the quality and quantity of groundwater available to existing users and groundwater dependent ecosystems as a result of mining and ancillary operations. | | Site records will demonstrate that annual monitoring of mine depth confirms mining has occurred as proposed in the mining plans and that no evidence of significant hydrocarbons spills (greater than 10L) is present on the pit floor. | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| GWO1 | Annual surface survey for pit floor level and visual inspection for hydrocarbon spills. | Pit floor. | Annual. | Previous groundwater measurements. |

5.7 Heritage

5.7.1 Context

Cultural heritage is regulated under the *Aboriginal Heritage Act, 1988* and *Heritage Places Act 1993*. Geological heritage falls under the *Mining Act, 1971*.

No geological monuments are located at or within 5km of the Site.

No registered Commonwealth or State heritage areas are present within 5km of the Site.

A search of the Aboriginal Heritage Site Register (Taa Wika) was undertaken on 25 November 2024. The search included the Site area and a 5km buffer around the Site boundary.

One listed Aboriginal Heritage Site (Point) was identified from the search (**Attachment 5 – confidential**), located approximately 1.3km from the Site boundary.

Applicable Legislation and Standards:

- *South Australian Aboriginal Heritage Act 1988*
- *Heritage Places Act 1993*
- *Mining Act, 1971*.

5.7.2 Potential impact events

Potential impact events for Heritage are provided in **Table 34** and supported by the discussion in **Section 2.17**.

Table 34 – Heritage (Aboriginal) source, pathway, and receptor identification during operations

| Potential Impact Event – Heritage operational 1 (HO1): Aboriginal heritage sites or objects are damaged by mining operations | | | | |
|---|--------------------|--|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Unknown presence of Aboriginal heritage Sites and/or objects in the proposed disturbance areas. | Mining operations. | Aboriginal community. | Yes | L = 3 C = 3 Risk = Medium |
| Uncertainty and Assumptions | | It is assumed that as a listed heritage site is located within 5km of the site that there is potential for other sites to be present within the MC area. | | |
| Sensitivity to Change | | Should a site, object or human remains of Aboriginal Heritage be identified at the Site during operations, the likelihood of finding additional heritage items would increase. | | |
| Justification for the SPR confirmation/non confirmation | | The source, pathway and receptor have been confirmed based on the advice received from <i>Aboriginal Affairs and Reconciliation</i> . | | |

5.7.3 Control and management strategies

The control and management strategies to mitigate potential impacts or to reduce impacts to acceptable levels are listed in **Table 35**.

Table 35 – Control and management strategies for Heritage

| Control and management strategy | Impact event | Uncertainty and assumptions |
|---|--|---|
| All employees and contractors working at the Site are advised of the significance of Aboriginal heritage and culture and are to take due care to preserve all Aboriginal Sites and Objects as defined by the <i>Aboriginal Heritage Act, 1988</i> . | HO1 | High certainty to ensure appropriate management of identified Aboriginal heritage Sites and Objects. |
| An Aboriginal Heritage Discovery Protocol has been developed for the Site to assist operators should potential human remains, objects or sites be encountered (Attachment 9). | HO1 | High certainty to ensure compliance with the requirements of the <i>Aboriginal Heritage Act, 1988</i> . |
| Post-control risk assessment | | |
| HO1 – Heritage damaged | L2, C2 = Very low | |
| Description of the likely impact | <p>In the event that Aboriginal or non-Aboriginal sites or objects are encountered during mining operations, no impacts occur as work will cease in the area and the appropriate authorities notified.</p> <p>As control strategies are required to reduce the risk level from <i>Medium</i> to <i>Very low</i>, the inclusion of an environmental outcome and measurement criteria is deemed appropriate.</p> | |

5.7.4 Outcome and measurement criteria

The operational environmental outcome and measurement criteria for Heritage are provided in **Table 36**.

Table 36 – Operational Heritage environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|--|---|---|----------------------|--------------------------|
| The tenement holder must, during construction and operation, ensure there is no damage, disturbance or interference to Aboriginal and non-Aboriginal heritage sites, objects or remains as a result of mining operations unless it is authorised under the relevant legislation. | | Site records will show that upon discovery within the lease of any possible: <ul style="list-style-type: none"> • Aboriginal sites • Objects • Remains • European sites of significance that work is ceased until the relevant authorities were notified and work recommenced only once authorisation was received. | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| HO1 – Cultural heritage damage | Records of actions and communications following the discovery of a cultural heritage Site, Object or Remains. | Investigation on the Site. Electronically filed. | Following discovery. | Not applicable. |

5.8 Land use and third-party property

5.8.1 Context

The dwelling on the Site is serviced by a SAPN Low Voltage Overhead Line.

An 11kV SAPN Subtransmission and High Voltage Overhead Line is located approximately 110m from the northern MC boundary.

A 66kV SAPN Subtransmission and High Voltage Overhead Line is located approximately 20m from the northern MC boundary.

All operations on EML 5542 have occurred within 200m of a transmission line pole without causing impacts.

A review of Location SA Map Viewer identified that there are no gas or water pipelines in the vicinity of the Site.

Main South Road is a sealed State maintained two-way arterial road, located approximately 220m to the north of the Site and includes the primary access point for both the landowners dwelling and the quarry.

Nunn Road, an unsealed local road is located approximately 290m from the southern MC boundary.

A range of land uses occurs within the vicinity of the Site and nearby third-party property includes the following:

- Grazing and cropping
- Forestry

- Infrastructure (roads, and powerlines).

As described in **Section 2.12.2**, 15 residences (sensitive receptors) have been identified within 1km of the MC boundary, including one being the landowner’s residence located in the north-east corner of the MC area (**MP Drawing 13**).

The conceptual final landform design incorporates agricultural (grazing) as a final land use and native vegetation areas and will be safe, stable and conforming with the surrounding landscape.

Applicable Legislation and Standards:

- *Fire and Emergency Services Act 2005*
- *Planning, Development and Infrastructure Act 2016*
- *South Australian Mining Act, 1971*
- South Australian Planning and Design Code.

5.8.2 Potential impact events

Potential impact events for Land use and third-party property (LTPP) are provided in **Table 37** and **Table 38**, and supported by the discussion in **Sections 2.10, 2.11, 2.12 and 3.5**.

Table 37 – Land use and third-party property source, pathway, and receptor identification during operations

| Potential Impact Event – Land use and third-party property operational 1 (LTPPO1): Damage to third-party property cause by mining operations | | | | |
|---|---|--|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Physical collisions or disturbance from mining equipment. | Mining operations with heavy machinery. | Third-party property and neighbouring land uses. | Yes | L = 2 C = 4 Risk = Medium |
| Uncertainty and Assumptions | | Assessment based on Site-based observations and a review of aerial imagery, and no assumptions are made, or uncertainty exist. | | |
| Sensitivity to Change | | The risk of impact would increase if blasting or excavations is undertaken closer to the powerline poles than planned. | | |
| Justification for the SPR confirmation/non-confirmation | | The source, pathway and receptor have been confirmed following an inspection of the Site and review of aerial imagery. | | |

Table 38 – Land use and third-party property source, pathway, and receptor identification at closure

| Potential Impact Event – Land use and third-party property closure 1 (LTPPC1): Final landform does not support the proposed final land use | | | | |
|---|---|--|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Rehabilitated landform not constructed as proposed. | Erosion, failure to establish vegetation, geotechnical instability, failure to conform with the local topography and drainage system. | Landowner. | Yes | L = 3 C = 3 Risk = Medium |
| Uncertainty and Assumptions | | The rehabilitation risks are well understood. | | |
| Sensitivity to Change | | Sensitive to a proposed change to the final land use, which is unlikely. | | |
| Justification for the SPR confirmation/non-confirmation | | The source, pathway and receptor have been confirmed following an inspection of the Site and review of aerial imagery. | | |

5.8.3 Control and management strategies

The control and management strategies to mitigate potential impacts or to reduce impacts to acceptable levels are listed in **Table 39**.

Table 39 – Control and management strategies for Land use and third-party property

| Control and management strategy | Impact event | Uncertainty and assumptions |
|--|---------------------|---|
| Conduct mining operations in accordance with the proposed Staged mining and rehabilitation plans. | LTPPO1, LTPPC1 | It is assumed that mining within the proposed areas will prevent LTPP impacts. |
| Annual visual inspections of the mining areas (including pit faces), local infrastructure, and third-party property to be undertaken. | LTPPO1, LTPPC1 | High certainty to identify potential LTPP impacts so they may be proactively addressed. |
| Vehicles to use well defined internal access tracks and operators and contractors are aware of the location of local infrastructure. | LTPPO1 | High certainty of preventing collision with third-party property. |
| The final landform has been designed in consideration of the WA safety bunding guidelines. | LTPPC1 | High certainty to identify and address potential geotechnical stability risks. |
| A geotechnical stability assessment will be undertaken by a suitably qualified person at the completion of each mining stage and at the completion of mining operations. | LTPPC1 | High certainty to identify and address potential geotechnical stability risks. |
| Rehabilitation vegetation species are suitable for grazing or are endemic to the region and are sown / planted at an appropriate time of year. | LTPPC1 | High certainty to improve vegetation establishment on the rehabilitated landform. |

| Control and management strategy | Impact event | Uncertainty and assumptions |
|--|---|--|
| Progressive rehabilitation areas are inspected annually for erosion, instability, vegetation establishment and conformance to the surrounding landscape and drainage system. | LTPPC1 | High certainty to identify and address rehabilitation issues. |
| The final pit will retain access ramps and safety bunding post-closure so that the pit is accessible and safe. | LTPPC1 | High certainty to allow for a range of final land uses within the pit. |
| Post-control risk assessment | | |
| LTPPO1 – Damage to the third-party property | L2, C3 = Low | |
| Description of the likely impact | No impact to any third-party property within or nearby the Site. As control strategies are not required to reduce the risk level to <i>Very low</i> , the inclusion of an environmental outcome and measurement criteria is not considered necessary. | |
| LTPPC1 – Final land use not achieved by final landform | L2, C3 = Low | |
| Description of the likely impact | The rehabilitated landform successfully supports the proposed final land uses. As control strategies are required to reduce the risk level from <i>Low</i> to <i>Very low</i> , the inclusion of an environmental outcome and measurement criteria is deemed appropriate. | |

5.8.4 Outcome and measurement criteria

The environmental outcome and measurement criteria for Land use and third-party property is provided in **Table 40** and **Table 41**.

Table 40 – Protection of Land use and third-party property environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|---|---|---|-----------------------------------|--------------------------|
| The Tenement Holder must, during construction and operation, ensure there are no adverse impacts to third-party land use or property on or off the Land as a result of mining and ancillary operations. | | <p>Annual inspections of the Site will confirm that mining operations have not caused damage to third-party land uses or property.</p> <p>Site records will demonstrate that any land use and third-party property related complaints are acknowledged within 48 hours.</p> <p>An investigation by a suitably qualified person into a complaint relating to impacts from mining on third-party land use and/or property is completed within 30 days and demonstrates that the tenement holder could not have reasonably prevented the impacts from occurring.</p> | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| LTPPO1 | Records from annual inspections and post-complaint investigation reports. | The Site and surrounding areas. | Annual and following a complaint. | Not applicable. |

Table 41 – Closure Land use and third-party property environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|---|--|--|---|--|
| The tenement holder must ensure the land is progressively and finally rehabilitated to support the future land use agreed by the Director of Mines or another authorised officer. | | Annual inspections will confirm that progressively rehabilitated areas are: <ul style="list-style-type: none"> • free from major erosion and scouring • do not show visible signs of instability • establishing a vegetation cover (pasture or native vegetation) • conforming to the surrounding landscape. A geotechnical stability assessment is undertaken at the completion of each stage and confirms that the final landform is geotechnically stable. An inspection of the final landform by a suitably qualified third-party will confirm that the final landform will successfully support the proposed final land use. | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| LTPPC1 | Records from annual inspections of the rehabilitated areas for erosion, signs of instability and vegetation establishment. Record from an inspection of the final landform and assessment of achievement of the final land uses. | Whole Site. | Annually and prior to surrender. | MP Drawing 21 and MP Drawing 23. |
| LTPPC1 | Records from geotechnical stability assessments. | Pit bench faces. | At the end of each mining stage and at the end of mining. | Relevant geotechnical stability standards. |
| LTPPC1 | Records from an inspection at the completion of quarrying. | The final landform. | Post-completion. | MP Drawing 21 and MP Drawing 23. |

5.9 Light spill

Mining operations at the Site will be undertaken continuously throughout the year.

Operations will predominantly occur from Monday to Friday starting no earlier than 7:00am and finishing no later than 6:00pm. If market demand is high, operations may also occur on Saturdays from 7:00am to 3:00pm.

No work will occur on Sundays or Public Holidays.

While during the winter months, sunrise does not occur until after 6:00am and sunset occurs prior to 6:00pm, no operations are proposed to occur in darkness. Accordingly, no flood lights are required for the conduct on mining operations at the Site.

5.9.1 Potential impact events

Potential impact events for Light spill area are provided in **Table 42**.

Table 42 – Light spill source, pathway, and receptor identification during operations in winter

| Potential Impact Event – Air quality operational 1 (AQO1): Nuisance impacts from light spill to nearby receptors | | | | |
|---|---------------------------------------|--|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Nil. | Light spill beyond the Site boundary. | Nearby residences. | No | L = 1 C = 1 Risk = Very low |
| Uncertainty and Assumptions | | Assessment based on Site-based observations and in consideration of proposed operations during the winter months. | | |
| Sensitivity to Change | | As Site-based observations were used for impact assessment, sensitivity to change is not anticipated. | | |
| Justification for the SPR confirmation/non confirmation | | The proximity to sensitive receptors suggests that an impact could exist, however as no flood lighting is required for the Site (source) as no operations are proposed to occur in darkness, an SPR relationship does not exist. | | |

5.10 Native fauna

5.10.1 Context

A review of native fauna species from an EPBC Act Protected Matters Search found that no critical habitats exist within the Site but identified 47 listed threatened native fauna species that may, are likely to, or are known to occur on the Site. This included two critically endangered species or habitat likely to, or may, occur within the tenement area, the *Calidris ferruginea* (Curlew Sandpiper) and *Numenius madagascariensis* (Eastern Curlew, Far Eastern Curlew) and one endangered species or habitat that is known to occur within the tenement area, the *Hylacola pyrrhopygia parkeri* (Chestnut-rumped Heathwren (Mount Lofty Ranges)).

A search of the BDBSA via the NatureMaps site was undertaken for observations of native fauna listed under State or National legislation within 5km of the Site.

Of the native fauna species with reported BDBSA observations within 5km of the Site, ten were listed in the EPBC Protected Matters Search as threatened and 23 were listed in the *National Parks and Wildlife Act 1972*.

The Ecological Baseline Survey, undertaken on 13 January 2025, identified 20 species of native fauna species (all birds) within the survey area. The full list of native fauna species observed is provided in **Attachment 3**.

The listed threatened fauna species were cross-referenced against the list of observed native vegetation species from the Ecological Baseline Survey (Smith, 2025). None of the listed species featured in the EPBC Protected Matters Search were observed during the survey and one observed species was listed as ‘vulnerable’ under the State NPW Act.

The quarry pit at the Site has an access ramp allowing fauna egress and no entrapment risks are anticipated.

Quarrying planning has aimed to minimised disturbance of potential habitat areas by the development of the East Pit, rather than further extending the West Pit, which is surrounded by native woodland on the eastern and western side.

18 scattered SA Blue Gum trees are proposed to be cleared in accordance with the Native Vegetation Management Plan over an estimated 29 year period.

Applicable Legislation and Standards:

- *Landscape South Australia Act, 2019*
- *South Australian National Parks and Wildlife Act 1972*
- *Commonwealth Environment Protection and Biodiversity Conservation Act 1999.*

5.10.2 Potential impact events

Potential impact events for Native fauna are provided in **Table 43** and **Table 44** and are supported by the discussion in **Section 2.9**.

Table 43 – Native fauna source, pathway, and receptor identification during operations

| Potential Impact Event – Native fauna operational 1 (NFO1): Injury or fatality of native fauna due to vehicle collision or unauthorised habitat destruction | | | | |
|--|--|--|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Quarrying equipment and vehicles. | Collision with native fauna or destruction of nests and habitat areas. | Native fauna. | Yes. | L = 3 C = 3 Risk = Medium |
| Uncertainty and Assumptions | | Uncertainty and assumptions in relation to native fauna species presence have been minimised through the undertaking of a site survey by an ecologist. | | |
| Sensitivity to Change | | As the proposed rehabilitation and native vegetation planting will lead to a net increase in native fauna habitat at the Site, sensitivity to changes (e.g. intensification of a native fauna species threatened rating) are not expected. | | |
| Justification for the SPR confirmation/non-confirmation | | The source, pathway and receptor have been confirmed following an inspection of the Site and review of fauna databases. | | |

5.10.3 Control and management strategies

The control and management strategies to mitigate potential impacts or to reduce impacts to acceptable levels are listed in **Table 44**.

Table 44 – Control and management strategies for Native fauna

| Control and management strategy | Impact event | Uncertainty and assumptions |
|--|---|--|
| The quarrying pits have been designed to minimise native fauna habitat clearance as far as reasonably practicable. | NFO1 | High certainty to avoid fauna collision. |
| An ecological baseline study has been undertaken to ensure an effective assessment of potential native fauna impacts. | NFO1 | High certainty to ensure potential native fauna impacts are adequately assessed. |
| Quarrying equipment and vehicles to use well defined access tracks. | NFO1 | High certainty to avoid fauna collision. |
| Quarrying equipment and vehicles will not be used in close proximity of any native fauna species observed on the Site during operations. | NFO1 | High certainty to eliminate risk of fauna collision. |
| Quarry pits to always maintain a ramp to allow egress to any fauna that enter the pit. | NFO1 | High certainty to reduce fauna entrapment risk. |
| Vehicles to adhere to Site speed limit of 10 km/h. | NFO1 | High certainty to avoid fauna collision. |
| Trees approved for clearance to be surveyed and clearly identified with markings. | NFO1 | High certainty to unauthorised native vegetation clearance. |
| Annual surveys to be undertaken to ensure that no fauna traps exist, and that no unauthorised habitat disturbance has occurred as a result of mining operations. | NFO1 | High certainty to prevent unauthorised habitat interference. |
| Post-control risk assessment | | |
| NFO1 – Avoidable fatality or disturbance to native fauna | L2, C3 = Low | |
| Description of the likely impact | <p>Nil avoidable fatalities or unauthorised disturbance to native fauna present at the Site.</p> <p>As control strategies are required to reduce the risk level from <i>Low</i> to <i>Very low</i>, the inclusion of an environmental outcome and measurement criteria is deemed appropriate.</p> | |

5.10.4 Outcome and measurement criteria

The environmental outcome and measurement criteria for Fauna is provided in **Table 45**.

Table 45 – Native fauna environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|--|--|--|--|------------------------------------|
| The tenement holder must ensure there are no native fauna injuries or deaths due to mining operations that could have been reasonably prevented, and that there is no unauthorised native fauna habitat destruction. | | Site records will demonstrate that annual Site inspections show that there is no potential fauna traps present at the Site or that no unauthorised habitat disturbance occurred as a result of mining operations. Site records will demonstrate that any native fauna injuries or deaths caused by quarrying operations were recorded and investigated to determine if the incident was reasonably preventable. | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| NFO1 | Records from annual inspections and post-incident investigation reports. | Disturbed areas within the Site. | Annually and following a fauna incident. | Native Vegetation Management Plan. |

5.11 Native vegetation

5.11.1 Context

A vegetation survey using the Bushland Assessment Method (BAM) was undertaken across the MC 4569 area on 13 January 2025.

A list of vegetation species for the Site is provided in **Attachment 3** and includes 8 native vegetation species, 6 of which are located within the disturbance area. None of the observed species are listed as threatened under the EPBC Act (Smith, 2025).

Quarry planning has targeted resource areas with lower densities of scattered native vegetation to avoid greater losses of native vegetation, or any disturbance of remnant patches of vegetation on the property.

It is proposed that 18 *Eucalyptus leucoxylon ssp leucoxylon* (SA Blue Gum) trees are cleared in the path of quarrying during the life of the quarry (approximately 1 tree every 19 months).

A total (SEB) payment for clearance of 18 trees has been calculated at \$86,826.63, which consists of an SEB Payment of \$82,300.12 plus an administration fee of \$4,526.51.

Should an on-ground SEB offset be pursued a total of 70.61 SEB points would be required to be offset.

The possibility of undertaking an on-ground offset to deliver the Significant Environmental Benefit will be explored as suitable patches of degraded native vegetation are present in adjacent areas. This will require negotiation with landowners.

Should an on-ground offset prove not to be feasible then the SEB would be provided through payment into the Native Vegetation Fund.

The EPBC Act Protected Matters Search conducted on 19 November 2024 identified one listed Threatened Ecological Community (TEC), the Swamps of the Fleurieu Peninsula (SFP) was known to occur within the buffer area.

A review of the surface water network identified that the TEC is present within the Carrickalinga Creek approximately 1.5km from the Site but not hydrologically connected to the Site, and therefore, there is no surface water pathway between the Site and the nearby SFP TEC.

Applicable Legislation and Standards:

- *South Australian Native Vegetation Act 1991*
- *Commonwealth Environment Protection and Biodiversity Conservation Act 1999.*

5.11.2 Potential impact events

Potential impact events for Native vegetation are provided in **Table 46** and are supported by the discussion in **Section 2.8.1** and **Section 3.6**.

Table 46 – Native vegetation source, pathway, and receptor identification during operations

| Potential Impact Event – Native vegetation operational 1 (NVO1): Unauthorised clearance of native vegetation. | | | | |
|--|--|--|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Clearance of native vegetation without authorisation. | Physical disturbance by heavy machinery. | Native vegetation. | Yes. | L = 2 C = 3 Risk = Low |
| Uncertainty and Assumptions | | The location of the approved mining area is well defined in this MP, and no assumptions or uncertainty remain regarding where approval is required for vegetation clearance. | | |
| Sensitivity to Change | | As Site-based observations were used for the assessment, sensitivity to change is not anticipated. | | |
| Justification for the SPR confirmation/non-confirmation | | The source, pathway and receptor have been confirmed following an inspection of the Site and a review of aerial imagery. | | |

5.11.3 Control and management strategies

The control and management strategies to mitigate potential impacts or to reduce impacts to acceptable levels are listed in **Table 47**.

Table 47 – Control and management strategies for Native vegetation

| Control and management strategy | Impact event | Uncertainty and assumptions |
|---|---------------------|---|
| Conduct mining operations in accordance with the proposed staged mining and rehabilitation plans. | NVO1 | High certainty to prevent vegetation clearance outside of the approved mining area. |
| Native vegetation approved for clearance will be surveyed and clearly marked to ensure that trees not authorised for clearance are not cleared. | NVO1 | High certainty to prevent unauthorised native vegetation clearance. |
| Annual visual inspections of the Site will confirm that any vegetation clearance has been undertaken in accordance with the staged mining | NVO1 | High certainty to demonstrate that only authorised vegetation clearance has occurred. |

| Control and management strategy | Impact event | Uncertainty and assumptions |
|--|---|--|
| and rehabilitation plans and Native Vegetation Management Plan. | | |
| Annual visual inspections of the disturbance area will be undertaken to confirm that quarrying is undertaken within the approved area. | NVO1 | High certainty to demonstrate that vegetation clearance outside of the approved mining area. |
| Native vegetation plantings and progressive rehabilitation of the quarry benches are intended to create a net increase of native vegetation at the Site. | NVO1 | High certainty to reduce native vegetation clearance impacts. |
| Vehicles to use well defined internal access tracks and operators and contractors are aware of the location of the approved disturbance boundary. | NVO1 | High certainty to prevent vegetation clearance outside of the approved mining area. |
| Post-control risk assessment | | |
| NV1 – Unauthorised native vegetation clearance | L1, C3 = Very low | |
| Description of the likely impact and evaluation of residual risk. | No unauthorised native vegetation clearance occurs during quarrying operations. As control strategies are required to reduce the risk level from <i>Low</i> to <i>Very low</i> , the inclusion of an environmental outcome and measurement criteria is deemed appropriate. | |

5.11.4 Outcome and measurement criteria

The environmental outcome and measurement criteria for Native vegetation is provided in **Table 48**.

Table 48 – Native vegetation environmental outcome and measurement criteria

| Environmental outcome | | | Measurement criteria (outcome achievement) | |
|--|----------------------------------|--------------------------------------|---|------------------------------------|
| The tenement holder must ensure there is no loss of abundance and/or diversity of native vegetation on or off the land through clearance unless a significant environmental benefit (SEB) has been approved in accordance with the relevant legislation (<i>Native Vegetation Act 1991</i>). | | | Annual site visual survey and photographic evidence will show no unauthorised vegetation clearance has occurred, and that the requirements of the SEB have been adequately met. | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| NVO1 | Records from annual inspections. | Site disturbance area and SEB areas. | Annually. | Native Vegetation Management Plan. |

5.12 Noise

5.12.1 Context

Potential noise sources from the Site include extraction operations, crushing and screening, load and haul activities, topsoil stripping, rehabilitation earthworks and delivery truck movements.

Operations will predominantly occur from Monday to Friday starting no earlier than 7:00am and finishing no later than 6:00pm. If market demand is high, operations may also occur on Saturdays between 7:00am to 3:00pm.

No work will occur on Sundays or Public Holidays.

The hours between 7:00am and 6:00pm are within the ‘day’ period as defined in the South Australian *Environment Protection (Commercial and Industrial Noise) Policy 2023* (EPA Noise Policy).

A review of the South Australian Property and Planning Atlas (SAPPA) identified that the Site property and neighbouring properties are categorised as ‘Rural’ and ‘Productive Rural Landscape’. The appropriate land use category under the EPA Noise Policy is ‘Rural industry’.

The applicable indicative ‘day’ noise factor is an LAeq of 57 dB(A) when measured over a 15-minute period.

Applicable Legislation and Standards:

- *South Australian Environment Protection Act, 1993*
- *South Australian Environment Protection (Commercial and Industrial) Policy, 2023.*

5.12.2 Potential impact events

Potential impact events for Noise are provided in **Table 49** and are supported by the discussion in **Section 2.16**.

Table 49 – Noise source, pathway, and receptor identification during operations

| Potential Impact Event – Noise operational 1 (NO1): Nuisance noise impacts from mining operations on nearby sensitive receptors | | | | |
|---|---|-------------------|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Noise from extraction operations, crushing and screening, load and haul activities, topsoil stripping, rehabilitation earthworks, delivery truck movements and maintenance. | Acoustic waves through the air. | Nearby residence. | Yes. | L = 2 C = 3 Risk = Low |
| Uncertainty and Assumptions | The noise assessment has been informed by site-based observations and no uncertainty on the noise levels or sensitive receptor locations exist. | | | |
| Sensitivity to Change | An increase to the volume of production and machinery at the Site would increase the amount of noise generated from the Site. | | | |
| Justification for the SPR confirmation/non-confirmation | The source, pathway and receptor have been confirmed following an inspection of the Site. | | | |

5.12.3 Control and management strategies

The control and management strategies to mitigate potential impacts or to reduce impacts to acceptable levels are listed in **Table 50**.

Table 50 – Control and management strategies for Noise

| Control and management strategy | Impact event | Uncertainty and assumptions |
|---|---|---|
| All plant and equipment on Site will be regularly serviced to ensure optimal performance. | NO1 | High certainty to reduce noise generation. |
| Operations limited to daylight hours. | NO1 | High certainty to reduce nuisance noise impacts. |
| Roads will be designed to an acceptable gradient to minimise engine noise and well maintained to minimise vehicle noises from bumps and corrugations. | NO1 | High certainty to reduce noise generation. |
| Quarrying planning for the East Pit aims to utilise the topography as a barrier to noise emissions from operations within the pit. | NO1 | High certainty to reduce noise levels from the Site. |
| Operators to stay in regular communication with the landowner to ensure noise impacts are not occurring. | NO1 | High certainty to address nuisance noise impacts and reduce the likelihood of complaints. |
| The use of truck air brakes will be avoided. | NO1 | High certainty to address nuisance noise impacts and reduce the likelihood of complaints. |
| Regular noise observations to be made near the landowner’s residence to ensure no annoying sounds are emanating from the operations. | NO1 | High certainty to address nuisance noise impacts and reduce the likelihood of complaints. |
| Post-control risk assessment | | |
| NO1 – Noise nuisance | L1, C2 = Very low | |
| Description of the likely impact | Operations do not cause unacceptable levels of noise at the nearest receptor location. As control strategies are required to reduce the risk level from <i>Low</i> to <i>Very low</i> , the inclusion of an environmental outcome and measurement criteria is deemed appropriate. | |

5.12.4 Outcome and measurement criteria

The environmental outcome and measurement criteria for Noise is provided in **Table 51**.

Table 51 – Noise environmental outcome and measurement criteria

| Environmental outcome | Measurement criteria (outcome achievement) |
|---|---|
| The tenement holder must, during construction and operation, ensure no public nuisance impacts from noise as a result of mining operations. | Site records will demonstrate that any noise related complaints are acknowledged within 48 hours and investigated within seven days. In response to the complaint, control and management strategies will be reviewed and updated as required and Site records will show the updates were provided to the complainant and/or the Mining Regulator. Should complaints continue, monitoring will be undertaken by a suitably qualified person near the receptor location to demonstrate that noise levels do not exceed the Indicative Noise Levels described in the EPA Noise Policy (LAeq < 57dB(A)). |

| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
|------------------|---|--------------------------------------|--|---|
| NO1 | Site complaint records on the complaint register. | Electronically filed. | Following a complaint. | Not applicable. |
| NO1 | Noise monitoring (for LAeq) by a suitably qualified person in accordance with the EPA Noise Policy. | At or near the complainant location. | 15-minute period when Site is in operation and not upwind. | EPA Noise Policy indicative noise levels, currently 57 dB(A). |

5.13 Public safety

5.13.1 Context

The Site is located in a relatively remote location approximately 3.4 km from the small township of Myponga, surrounded by vegetation to the north, east and south which prevents vehicle access.

The Myponga Reservoir located to the north of the Site is an area of public interest and access.

The Site is located within the landowner’s farming property, and the landowner’s have access to the Site.

MC 4569 is located internally within the property and is only accessible via the main entrance to the property.

The existing and proposed quarry will be visible from Main South Road, and the public will be aware of the location.

Access to the Site is via a gated entrance which will be closed and locked outside of general operation hours.

The final landform has been designed to include safety bunding above the pit crest and on the benches.

Applicable Legislation and Standards:

- *Work Health and Safety Act 2012*
- *South Australia Mining Act 1971.*

5.13.2 Potential impact events

Potential impact events for public safety are provided in **Table 52** and are supported by the discussion in **Section 3.5.6**.

Table 52 – Public safety source, pathway and receptor identification during operations and closure

| Potential Impact Event – Public safety operational 1 (PSO1) and public safety closure 1 (PSC1): Safety incident to the public due to unauthorised access to the Site during operations or post-closure | | | | |
|---|----------------------------------|--|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Site | Unauthorised access to the Site. | The public. | Yes | L = 2 C = 4 Risk = Medium |
| Uncertainty and Assumptions | | Assessment based on Site-based observations. No assumptions have been made and minimal uncertainty exists. | | |
| Sensitivity to Change | | As the Site is not easily accessible, sensitivity to changes is low. | | |
| Justification for the SPR confirmation/ non-confirmation | | The source, pathway and receptor have been confirmed following an inspection of the Site and review of aerial imagery. | | |

5.13.3 Control and management strategies

The control and management strategies to mitigate potential impacts or to reduce impacts to acceptable levels are listed in **Table 53**.

Table 53 – Control and management strategies for Public safety

| Control and management strategy | Impact event | Uncertainty and assumptions |
|--|---------------------|---|
| The property is surrounded by paddock fencing and is located centrally within the property limiting potential access. | PSO1, PSC1 | High certainty to prevent unauthorised access to the Site. |
| Gates locked at close of business by Quarry Manager/responsible person. | PSO1, PSC1 | High certainty to prevent unauthorised access to the Site. |
| Signage at quarry entrance, and traffic management signs within the quarry are clearly visible. | PSO1 | Moderate certainty to deter unauthorised access to the Site. |
| Employee or contractor induction training covers the process for the identification and management of trespassers at the Site. | PSO1, PSC1 | High certainty to prevent unauthorised access to the Site. |
| Annual inspections are undertaken to ensure that reasonable measures are employed to prevent unauthorised access to the Site. | PSO1 | High certainty to maintain controls that prevent unauthorised access to the Site. |
| The final landform design will include safety bunding constructed in consideration of the WA safety bunding guidelines. | PSC1 | High certainty to prevent accidental falls in the pits. |

| Post-control risk assessment | |
|---|---|
| PSO1 – Unauthorised public access during operations | L1, C4 = Low |
| Description of the likely impact | Reasonable and practicable measures are in place to prevent public safety impacts due to unauthorised access to the Site. As the consequences of an incident are potentially fatal to human life, control strategies will be regularly monitored and maintained. As control strategies are required to reduce the risk level from <i>Medium</i> to <i>Low</i> , the inclusion of an environmental outcome and measurement criteria is deemed appropriate. |
| PSC1 – Unauthorised public access post-completion | L1, C3 = Very low |
| Description of the likely impact | Reasonable and practicable measures are in place to prevent and mitigate the severity of public safety impacts due to unauthorised access to the Site. As the consequences of an incident are potentially fatal to human life, control strategies will be audited prior to surrender to ensure they will be sustained. As control strategies are required to reduce the risk level from <i>Medium</i> to <i>Very low</i> , the inclusion of an environmental outcome and measurement criteria is deemed appropriate. |

5.13.4 Outcome and measurement criteria

The environmental outcome and measurement criteria for public safety is provided in **Table 54** and **Table 55**.

Table 54 – Operational Public safety environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|---|---|--|------------------------|--------------------------|
| The tenement holder must, during construction and operation, ensure that unauthorised entry to the land does not result in public injuries and/or deaths that could have been reasonably prevented. | | Site records will demonstrate all public injuries and/or deaths resulting from unauthorised access to the tenement are recorded and an investigation by a suitably qualified independent third-party is completed within 30 days (or other time as agreed with the lead regulating agency). The results of the investigation demonstrate the tenement holder could not have reasonably prevented the incident. | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| PSO1 | Records from the incident register. Investigation report provided by a suitably qualified independent third-party. | Relevant areas within the Site. | Following an incident. | Not applicable. |

Table 55 – Closure Public safety environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|--|---|---|---------------------------|---|
| The tenement holder must demonstrate that post completion, the risks to the health and safety of the public so far as they may be affected by mining operations, are as low as reasonably practicable. | | A review of the final landform and public safety control strategies present at closure by a suitably qualified person will confirm that the final landform is constructed consistently with the proposed final landform, geotechnically stable and safe to the public as far as reasonably practicable. | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| PSC1 | Final assessment report provided by a suitably qualified person confirming that the final landform has been constructed consistently with the proposed final landform, geotechnically stable and safe to the public as far as reasonably practicable. | Disturbed areas within the Site. | Prior to lease surrender. | MP Drawing 21 and MP Drawing 23. |

5.14 Soil

5.14.1 Context

Based on the visible soil horizons, it is estimated that:

- A layer of topsoil varying from 0.1m – 0.5m in depth (and averaging 0.3m)
- A layer of rocky subsoil from 0.5m – 0.9m in depth (and averaging 0.7m).

Approximately 20,000m² of area is proposed to be stripped of soil over the life of the mine and therefore material available for rehabilitation from the proposed mining areas is estimated to be 20,000 m³.

Approximately 1,600 m³ of soil from EML 5542 has been stripped ahead of mining and stockpiled along the sides of the quarry pit and used in safety bunds.

Topsoil will be stockpiled in windrows with a maximum height of 2m and with outer batters with slope angles of approximately 1v:2h or less at the locations shown on **MP Drawings 18 – 20**.

The stockpiles will establish a coverage of grass, monitored for erosion issues and controlled for weeds.

Applicable Legislation and Standards:

- *Landscape South Australia Act, 2019*
- South Australian Environment Protection Authority Liquid Storage Guidelines: Bunding & Spill Management (EPA, 2016).

5.14.2 Potential impact events

Potential impact events for Soil are provided in **Table 56** and **Table 57** and supported by the discussion in **Sections 2.3** and **3.3.3.1**.

Table 56 – Soil source, pathway, and receptor identification during operations

| Potential Impact Event – Soil operational 1 (SO1): Soil is poorly managed and is not viable for use in the rehabilitation of the Site. | | | | |
|---|---|--|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Failure to conserve soil for rehabilitation of the Site. | Soil poorly managed during mining operations. | Final rehabilitation landform. | Yes. | L = 3 C = 3 Risk = Medium |
| Uncertainty and Assumptions | | Assessment based on Site-based observations, and it is assumed that the visible soil profiles in the pre-existing disturbance areas are consistent with the undisturbed areas. | | |
| Sensitivity to Change | | As Site-based observations were used for impact assessment, sensitivity to change is not anticipated. | | |
| Justification for the SPR confirmation/ non-confirmation | | The source, pathway and receptor have been confirmed following an inspection of the Site and review of aerial imagery. | | |

Table 57 – Soil source, pathway, and receptor identification at closure

| Potential Impact Event – Soil closure 1 (SC1): Soil is not used effectively in the rehabilitation of the Site. | | | | |
|---|---|--|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Rehabilitated landform not achieved due to poor use of available soils. | Soil poorly managed during rehabilitation activities. | Final rehabilitation landform. | Yes. | L = 3 C = 3 Risk = Medium |
| Uncertainty and Assumptions | | The rehabilitation risks are well understood. | | |
| Sensitivity to Change | | No changes to the proposed final landform are likely to alter the results of the assessment. | | |
| Justification for the SPR confirmation/non-confirmation | | The source, pathway and receptor have been confirmed following an inspection of the Site. | | |

5.14.3 Control and management strategies

The control and management strategies to mitigate potential impacts or to reduce impacts to acceptable levels are listed in **Table 58**.

Table 58 – Control and management strategies for Soil

| Control and management strategy | Impact event | Uncertainty and assumptions |
|---|---|---|
| Ensure all available soil is stripped ahead of mining and stockpiled outside of the mining area or on the pit floor ready for rehabilitation. | SO1, SC1 | Requirement for soil conservation. |
| Soil to be stockpiled in low mounds of 2.0m or less with battered sides to reduce erosion potential. | SO1, SC1 | High certainty to improve the likelihood of soil viability. |
| Soil stockpiles to be allowed to grow a vegetation cover but will be controlled for environmental weeds. | SO1, SC1 | High certainty to improve the likelihood of soil viability. |
| Vehicles will be prevented from driving over Soil stockpiles. | SO1, SC1 | High certainty to prevent damage to soil structure. |
| Soil stockpiles to be monitored annually for potential erosion and weed issues. | SO1, SC1 | High certainty to prevent damage to soil viability. |
| A soil material balance to be undertaken prior to rehabilitation activities to determine the appropriate depth of soil to be spread over the rehabilitation area. | SC1 | High certainty to ensure soil is available for total rehabilitation area. |
| Post-control risk assessment | | |
| SO1 – Failure to conserve soil for rehabilitation | L1, C3 = Very low | |
| Description of the likely impact | Soils are stripped ahead of mining and well managed ahead of rehabilitation. As control strategies are required to reduce the risk level from <i>Medium</i> to <i>Very low</i> , the inclusion of an environmental outcome and measurement criteria is deemed appropriate. | |
| SC1 – Rehabilitation failure due to a lack of available topsoil. | L2, C3 = Low | |
| Description of the likely impact | The rehabilitated landform successfully supports the proposed final land uses. As control strategies are required to reduce the risk level from <i>Medium</i> to <i>Low</i> , the inclusion of an environmental outcome and measurement criteria is deemed appropriate. | |

5.14.4 Outcome and measurement criteria

The environmental outcome and measurement criteria for Soil is provided in **Table 59** and **Table 60**.

Table 59 – Operational Soil environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|---|---|---|-----------|--------------------------|
| The Tenement Holder must, during construction and operation, ensure that the existing (pre-mining) soil quality and quantity is maintained. | | Records from annual inspections of soil stockpiles confirm that the stockpiles: <ul style="list-style-type: none"> • are lower than 2.0m high • have vegetation cover over the majority of the surface • are free of environmental weeds, and • are not losing soil due to erosion. | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| SO1 | Records from annual inspections of Soil stockpiles. | Soil stockpile areas. | Annually. | Not applicable. |

Table 60 – Closure Soil environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|--|--|--|---------------------|--------------------------|
| The tenement holder must ensure that Soil is effectively used in the rehabilitation of the Site. | | An inspection of the final landform by a suitably qualified person will confirm that: <ul style="list-style-type: none"> • All available soil has been utilised • Soil has been applied evenly over the areas discussed in the rehabilitation plans, and • The rehabilitated surfaces have been prepared in a manner that reduces erosion and is likely to sustain vegetation growth. | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| SC1 | Records from an inspection of the rehabilitated areas to confirm that: <ul style="list-style-type: none"> • All Soil has been used • Soil has been evenly applied across the rehabilitation areas requiring Soil, and • That the sections of the final landform that has Soil applied is stable and likely to sustain vegetation. | Sections of the final landform where soil application is required. | Prior to surrender. | Not applicable. |

5.15 Surface water

5.15.1 Context

The Site is located within the Western Mount Lofty Ranges Prescribed Water Resources Area.

The eastern portion of the Site is located within the Mount Lofty Ranges Water Protection Area with Priority Areas).

The Site is not located within the Murray-Darling Basin Boundary or a prescribed wells area.

No prescribed watercourses are located on the Site.

The Site is spread across two catchments, with the West Pit being located at the headwaters of a tributary that flows westwards towards Carrickalinga Creek via several dams, and surface water flows from the West Pit area flow north-eastwards towards the Myponga Reservoir via a farm dam.

The Site is located in a relatively high rainfall area.

Surface water runoff from the quarry pits is/will be internally draining, and runoff from the ancillary mining area will continue to be directed to a sediment retention dam located near the MC 45689 northern boundary.

Applicable Legislation and Standards:

- South Australian Environment Protection (Water Quality) Policy 2015
- *Water Act, 2007*
- *Environment Protection and Biodiversity Conservation Act, 1999*
- *Landscape South Australia Act, 2019*
- South Australian Environment Protection Authority Liquid Storage Guidelines: Bunding & Spill Management (EPA, 2016).

5.15.2 Potential impact events

Potential impact events for Surface water are provided in **Table 61** and **Table 62** by the discussion in **Section 2.7** and **Section 3.5.7**.

Table 61 – Surface water quality source, pathway and receptor identification during operations and closure

| Potential Impact Event – Surface water operational 1 (SWO1) and closure 1 (SWC1): Sediment laden runoff leaves the operating areas and contaminates downstream surface water resources and/or aquatic ecosystems | | | | |
|---|--|---|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Surface water runoff following rainfall events during operations and post-closure. | Overland flow between the Site and downstream water resources. | Existing surface water users (landowner dams and Myponga Reservoir) and aquatic ecosystems. | Yes. | L = 3 C = 3 Risk = Medium. |
| Uncertainty and Assumptions | The assessment is supported by Site specific observations and spatial data. No assumptions have been made and minimal uncertainty exists. | | | |
| Sensitivity to Change | Significant increases in the quantity and intensity of rainfall due to climate change could increase the likelihood and consequence of impacts from uncontrolled runoff discharge from the Site. | | | |
| Justification for the SPR confirmation/ non-confirmation | The source, pathway and receptor have been confirmed following an inspection of the Site and review of Site-specific surveying data. | | | |

Table 62 – Surface water quantity source, pathway and receptor identification during operations and closure

| Potential Impact Event – Surface water operational 2 (SWO2) and closure 2 (SWC2): Avoidable capture and diversion of surface water reduces the quantity of water for downstream surface water resources and/or aquatic ecosystems | | | | |
|--|----------------------------|--|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Diversion of surface water flows reduce water availability to downstream users. | Disruption of flow regime. | Existing surface water users and aquatic ecosystems. | Yes. | L = 2 C = 3 Risk = Low. |
| Uncertainty and Assumptions | | The impact assessment is supported by Site specific observations and surveying data. | | |
| Sensitivity to Change | | Changes to the existing flow regime are not planned and therefore sensitivity to changes are expected to be low. | | |
| Justification for the SPR confirmation/ non-confirmation | | The source, pathway and receptor have been confirmed following an inspection of the Site and review of Site-specific surveying data. | | |

5.15.3 Control and management strategies

The control and management strategies to mitigate potential impacts or to reduce impacts to acceptable levels are listed in **Table 63**.

Table 63 – Control and management strategies for Surface water

| Control and management strategy | Impact event | Uncertainty and assumptions |
|--|---------------------|--|
| Operations are undertaken in accordance with the mining and rehabilitation plans to direct surface water flows from the quarry pits internally to the disturbance area. | SWO2, SWC2 | High certainty to prevent surface water from leaving the disturbance area. |
| Annual inspections will be undertaken to identify erosion and potential sediment runoff issues and confirm that no uncontrolled surface water runoff discharge from the Site has occurred. | SWO1 | High certainty to address potential sediment laden water leaving the Site. |
| A sediment retention dam is in place that effectively reduces sediment from runoff leaving the current EML 5542 ancillary mining area. | SWO1 | High certainty to address potential sediment laden water leaving the Site. |
| The sediment retention dam will be cleaned out annually before winter and can be expanded should additional retention time be required. | SWO1 | High certainty to address potential sediment laden water leaving the Site. |
| Visual turbidity monitoring in water released on the outflow of the sediment retention dam to be regularly undertaken following rainfall. | SW1 | High certainty to identify capacity issues in the sediment retention dam. |

| Control and management strategy | Impact event | Uncertainty and assumptions |
|---|--|--|
| Sampling of water outflowing from the sediment retention dam to be undertaken annually* following rainfall and tested for turbidity levels. <i>*Unless the water level does not cause the dam to overflow in a calendar year.</i> | SW1 | High certainty to identify capacity issues in the dam and to demonstrate achievement of compliance criteria. |
| Disturbance areas and internal roads to be limited to what is required to efficiently and effectively mine the Site. | SWO1 | High certainty to reduce sediment runoff. |
| Progressive rehabilitation to be undertaken in accordance with the mining and rehabilitation plans to reduce the disturbance area. | SWO1 | High certainty to reduce sediment runoff. |
| The rehabilitated landform will be inspected by a suitably qualified person ahead of mine closure to ensure that erosion and sediment control issues are likely to occur post-closure, and that no unauthorised surface water diversions are present at the Site. | SWC1, SWC2. | High certainty to detect any ongoing surface water issues post-closure. |
| Post-control risk assessment | | |
| SWO1 and SWC1 – Sediment laden water leaving disturbed areas | L1, C2 = Very low | |
| Description of the likely impact | Erosion and sediment runoff will be effectively controlled to ensure that the level of sediment leaving the Site does not cause adverse impacts on downstream receptors. As control strategies are required to reduce the risk level from <i>Low</i> to <i>Very low</i> , the inclusion of an environmental outcome and measurement criteria is deemed appropriate. | |
| SWO2 and SWC2 – Impacts from a reduction of surface water diverted away from downstream water users. | L1, C2 = Very low | |
| Description of the likely impact | Natural water flows will be maintained as far as reasonably practicable to ensure no adverse impacts to downstream surface water receptors. As control strategies are required to reduce the risk level from <i>Low</i> to <i>Very low</i> , the inclusion of an environmental outcome and measurement criteria is deemed appropriate. | |

5.15.4 Outcome and measurement criteria

The environmental outcome and measurement criteria for Surface water is provided in **Table 64** and **Table 65**.

Table 64 – Operational Surface water environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|--|---|---|-----------|--------------------------|
| The Tenement Holder must, during construction and operation, ensure there is no adverse impacts on surface water quantity or quality as a result of mining operations. | | <p>Site records will demonstrate that inspections of the Site are undertaken annually, and any observed uncontrolled runoff discharge areas or areas of erosion and/or potential sediment runoff issues were remediated with appropriate control strategies within 30 days.</p> <p>Site records will demonstrate that water leaving the Site at the Runoff outlet is sampled annually and tested for turbidity using methods as agreed with the relevant regulatory authority.</p> <p>Sampled water leaving the Site will return a turbidity level of less than 50 (Nephelometric Turbidity units) NTU.</p> | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| SWO1 | Records from erosion and sediment runoff inspection (and remedial actions as required). | Internal surface water drainage areas. | Annually. | Nil. |
| SWO1 | Sampling of runoff water following rainfall events and testing analysis record. | Sediment retention dam overflow point. | Annually. | 50 NTU. |

Table 65 – Closure Surface water environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|---|---|---|---------------------|--------------------------|
| The tenement holder must ensure there is no adverse impact on surface water quantity or quality caused by the final landform. | | Records of an inspection of the final landform conducted by a suitably qualified person confirms that no current or potential future erosion and/or potential sediment runoff issues are present. | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| SWC1 | Record from erosion and sediment runoff inspection of the final landform. | Rehabilitation areas. | Prior to surrender. | Not applicable. |

5.16 Traffic

5.16.1 Context

The property access point is located on the southern side of Main South Road and has effectively serviced operations on EML 5542 for several decades.

Haul trucks will exit through the existing EML 5542 haul road to Main South Road, a sealed State maintained two-way arterial road, located approximately 220m to the north of the Site and includes the primary access point for both the landowners dwelling and the quarry.

Main South Road is considered to be a busy main road linking Adelaide and the western Fleurieu Peninsula.

An average of four loaded trucks will leave the Site on a workday, this increases to a maximum of 10 trucks per day during a campaign, which is consistent with the existing operations on EML 5542.

No upgrades are required as the existing entrance has functioned adequately since operations at the exiting quarry first commenced.

Applicable Legislation and Standards:

- *South Australian Mining Act, 1971*
- *South Australian Road Safety Act, 1961.*

5.16.2 Potential impact events

Potential impact events for Traffic are provided in **Table 66** and supported by the discussion in **Section 3.5.1**.

Table 66 – Traffic source, pathway, and receptor identification during operations

| Potential Impact Event – Traffic operational 1 (TO1): An accident involving traffic related to the mining operations and the public occurs near the Property Access Point | | | | |
|--|----------------------|---|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Traffic related to the mining operation. | Public road network. | Members of the public using the public roads near the Site. | Yes. | L = 2 C = 5 Risk = High |
| Uncertainty and Assumptions | | Nil as the road layout and access point are well understood. | | |
| Sensitivity to Change | | Main South Road is already considered to be a busy main road and therefore no sensitivity to change based on traffic volumes is expected. | | |
| Justification for the SPR confirmation/ non-confirmation | | The source, pathway and receptor have been confirmed following an inspection of the Site and review of aerial imagery. | | |

5.16.3 Control and management strategies

The control and management strategies to mitigate potential impacts or to reduce impacts to acceptable levels are listed in **Table 67**.

Table 67 – Control and management strategies for Traffic

| Control and management strategy | | Impact event | Uncertainty and assumptions |
|---|--|--------------|---|
| All transport truck operators accessing the Site are appropriately licenced and inducted on driver responsibilities and local traffic conditions. | | TO1 | Moderate certainty to reduce the likelihood of a truck driver causing an accident. |
| All vehicles carrying materials from the site must be loaded and transported in a manner which prevents spillage of materials onto a public road. | | TO1 | High certainty to reduce the likelihood of a traffic incident due to material build up on the road. |
| The Site Access Point is free from obstructions and has good visibility of oncoming traffic in both directions. | | TO1 | High certainty to reduce the likelihood of a traffic incident. |
| Annual monitoring of the Site access point will be undertaken to ensure traffic risks are as low as reasonably practicable. | | TO1 | High certainty to reduce the likelihood of a traffic incident. |
| Post-control risk assessment | | | |
| TO1 – Traffic incidents involving the public | L1, C4 = Low | | |
| Description of the likely impact | <p>An investigation into any incidents involving mining related traffic and the public near the Site will conclude that reasonable and practicable measures were employed by the tenement holder to prevent the incident.</p> <p>As control strategies are required to reduce the risk level from <i>High</i> to <i>Low</i>, the inclusion of an environmental outcome and measurement criteria is deemed appropriate.</p> | | |

5.16.4 Outcome and measurement criteria

The environmental outcome and measurement criteria for Traffic is provided in **Table 68**.

Table 68 – Traffic environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|---|---|---|---------------------------------------|-------------------------------------|
| The tenement holder must, during construction and operation, ensure there are no traffic accidents involving members of the public and mining related traffic that could have been reasonably prevented by the tenement holder. | | <p>Site records will demonstrate that annual monitoring of the Site access point is undertaken and that any safety issues observed are addressed within 14 days.</p> <p>Site records demonstrate that all traffic accidents involving the public and mining related traffic are recorded.</p> <p>An investigation of each incident is undertaken by a suitably qualified independent third-party within 30 days (or other time as agreed with the lead regulating agency) and demonstrates the Tenement Holder could not have reasonably prevented the accident from occurring.</p> | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| TO1 | Site records of annual inspections. | Site access point and section of the road within 50m. | Annually. | Previous annual compliance reports. |
| TO1 | Site records (incident register) and investigation reports. | Site access point and section of the road within 50m. | Within 30 days of a traffic incident. | Not applicable. |

5.17 Visual amenity

5.17.1 Context

The Site is located in a landscape dominated by hilly land with a mix of grazing, native vegetation and forestry land cover.

The area is considered to hold a moderate to high level of aesthetic value and amenity for the local community.

A Viewshed Analysis has been undertaken to effectively assess potential visual amenity for all sensitive receptors within 1km of the MC 4569 boundary. The results from the analysis show:

- the central area of the existing pit would not be expected to be visible from any SR location
- a small section of the southern MC boundary may be visible from SR1, SR2, SR3 and SR14 locations
- with the exception of the central area of the existing pit and south-east corner of the MC area, the remainder of the MC area may be visible from SR5, SR6, SR7, SR8, SR9, SR10, SR11, SR12 and SR13 locations
- the western boundary and mid-eastern sections of the MC area may be visible from SR4 location.

Results from the Viewshed Analysis have been confirmed by Site based observations, and visual amenity photo-point monitoring locations have been established and baseline images taken.

A visual screening mound and (partial) tree screen is located along the northern side of the West Pit. Additional trees will be planted in high density on the northern side of the West Pit and ancillary mining area to enhance the tree screen.

The tree species will be the same as those present in the existing woodland areas on the property and opportunities to plant regionally threatened species, or that provide habitat/forage for regional threatened native fauna will be investigated.

Existing vegetation along the eastern side of the West Pit is expected to screen and soften views into the East Pit when opened.

The proposed sequence of mining intends for quarrying into the hill and then behind the hill to use the topography to screen views into the East Pit as far as reasonably practicable.

Soil stockpiles will be located adjacent to the northern and southern side of the East Pit to screen views.

Details of proposed screening for each stage are provided in **Section 3.5.4**.

Applicable Legislation and Standards:

- South Australia Planning and Design Code.

5.17.2 Potential impact events

Potential impact events for Visual amenity are provided in **Table 69** and **Table 70** and supported by the discussion in **Section 2.1.4** and **Section 3.5.4**.

Table 69 – Visual amenity source, pathway, and receptor identification during operations

| Potential Impact Event – Visual amenity operational 1 (VAO1): The Site causes visual impacts to the public at nearby dwellings and public areas | | | | |
|--|--|--|---------------------|-------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| The visual characteristics of the Site and active mining operations. | Line of sight from receptor locations. | Nearby dwellings and public places. | Yes. | L = 4 C = 3 Risk = High |
| Uncertainty and Assumptions | | The impact assessment is supported by Site specific observations and elevation data. It is assumed that the community may be sensitive to views into the quarry despite no recent visual amenity complaints in relation to EML 5542. | | |
| Sensitivity to Change | | As the impact event assessment is based on Site specific observations and spatial data, no sensitivity to change is anticipated. | | |
| Justification for the SPR confirmation/non-confirmation | | The source, pathway and receptor have been confirmed following an inspection of the Site and review of elevation data. | | |

Table 70 – Visual amenity source, pathway, and receptor identification at closure

| Potential Impact Event – Visual amenity closure 1 (VAC1): The final landform does not integrate and harmonise with the surrounding landscape | | | | |
|---|--|--|---------------------|------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| The visual characteristics of the final landform. | Line of sight from receptor locations. | Nearby dwellings and public places. | Yes. | L = 3 C = 2 Risk = Low |
| Uncertainty and Assumptions | | It is assumed that the surrounding landscape and land uses will not change significantly prior to the closure of the Site. | | |
| Sensitivity to Change | | Changes in atmospheric conditions due to climate change could impact vegetation growth across the rehabilitation areas. | | |
| Justification for the SPR confirmation/non-confirmation | | The source, pathway and receptor have been confirmed following an inspection of the Site and review of elevation data. | | |

5.17.3 Control and management strategies

The control and management strategies to mitigate potential impacts or to reduce impacts to acceptable levels are listed in **Table 71**.

Table 71 – Control and management strategies for Visual amenity

| Control and management strategy | Impact event | Uncertainty and assumptions |
|--|---|--|
| Undertake progressive rehabilitation in accordance with the mine plans and proposed rehabilitation methods. | VAO1, VAC1 | High certainty to reduce visual amenity impacts. |
| Quarry planning informed by a viewshed analysis to reduce visual impacts from operations as far as reasonably practicable. | VAO1, VAC1 | High certainty to reduce visual amenity impacts. |
| Screening mounds to be maintained to ensure vegetation is effectively growing. | VAO1 | High certainty to reduce visual amenity impacts. |
| Final rehabilitation is to be undertaken in accordance with the proposed final landform. | VAC1 | High certainty to reduce visual amenity impacts. |
| Soil stockpiles will be located adjacent to the northern and southern side of the East Pit to screen views. | VAO1 | High certainty to reduce visual amenity impacts. |
| Additional trees will be planted on the northern side of the West Pit to screen views. | VAO1, VAC1 | High certainty to reduce visual amenity impacts. |
| Annual inspections of the Site will confirm that the vegetation screening has been maintained around the operational areas. | VAO1, VAC1 | High certainty to effectively manage visual amenity impacts during operations and provide an early indication for achievement of the closure outcome for visual amenity. |
| Annual visual amenity photo-point monitoring to be undertaken to ensure that reasonable measures have been implemented to soften visual impacts from the Site. | VAO1, VAC1 | High certainty to effectively manage visual amenity impacts during operations and provide an early indication for achievement of the closure outcome for visual amenity. |
| Post-control risk assessment | | |
| VAO1 – Operational visual amenity impacts to the public | L3, C2 = Very low | |
| Description of the likely impact | <p>Visual amenity impacts from views into the Site from receptor locations are as low as reasonably practicable and any impacts are trivial.</p> <p>As control strategies are required to reduce the risk level from <i>High</i> to <i>Low</i>, the inclusion of an environmental outcome and measurement criteria is deemed appropriate.</p> | |
| VAC1 – Closure visual amenity impacts to the public | L2, C2 = Very low | |
| Description of the likely impact | <p>Softened visual amenity impacts from views into the Site from receptor locations.</p> <p>As control strategies are required to reduce the risk level from <i>Low</i> to <i>Very low</i>, the inclusion of an environmental outcome and measurement criteria is deemed appropriate.</p> | |

5.17.4 Outcome and measurement criteria

The environmental outcome and measurement criteria for Visual amenity are provided in **Table 72** and **Table 73**.

Table 72 – Operational Visual amenity environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|---|--|--|-----------|--------------------------|
| The Tenement Holder must, during construction, operation, and post completion, ensure the form, contrasting aspects and reflective aspects of mining operations are visually softened to blend in with the surrounding landscape. | | Site records will demonstrate that visual amenity photo-point monitoring is undertaken annually to ensure that reasonable measures have been implemented to soften visual impacts from the Site and any offensive visible aspects of the mining operations are addressed within 30 days (or other period as approved by the lead regulating agency). | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| VAO1 | Records from annual inspections of the vegetation screening. | Photo-point monitoring locations 1 – 4. | Annually. | Section 2.14. |

Table 73 – Closure Visual amenity environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|---|--|--|---------------------|-----------------------------|
| The tenement holder must ensure all rehabilitated landforms integrate and harmonise with the surrounding landscape. | | Visual assessment of the Site and surrounds undertaken by a suitably qualified person at closure confirms that the final landform integrates and harmonises with the surrounding landscape and is consistent with the proposed final landform. | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| VAC1 | Report from visual assessment of the final landform. | Areas outside of the Site where line of sight exists into the Site. | Prior to surrender. | MP Drawings 21 – 23. |

5.18 Waste disposal

5.18.1 Context

No chemical additives are proposed to be used in the processing of the products from the Site and therefore processing wastes will not be created by mining operations on the MC area.

Minor mobile equipment maintenance occurs at the site. Major servicing and maintenance of mobile equipment and machinery will be generally carried out off-site unless it is not feasible to relocate the plant in which case work may be carried out on the tenement. Any wastes generated by minor servicing will be temporarily stored on site in accordance with EPA guidelines.

Diesel is stored within a tank bunded in accordance with the EPA Bunding and spill management guidelines (2016).

A spill kit is present at the Site, and any minor spills will be treated with absorbent sand and contaminated material will either be removed from the Site to an EPA licenced facility or treated in a bioremediation area and decontaminated.

Any general wastes produced during operations is temporarily stored in bins with lids to prevent vermin from accessing the waste and removed from the Site to the tenement holder’s depot.

Applicable Legislation and Standards:

- *South Australian Environment Protection Act 1993*
- Environment Protection Regulations 2009.

5.18.2 Potential impact events

Potential impact events for Waste disposal are provided in **Table 74** and **Table 75** and supported by the discussion in **Section 3.4.3** and **Section 3.4.4**.

Table 74 – Waste disposal source, pathway, and receptor identification during operations

| Potential Impact Event – Waste disposal operational 1 (WDO1): Contamination of land and/or waters on and off the Site from poor waste management practices (including liquid chemicals) | | | | |
|--|--|---|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Wastes generated by mining operations. | Transported through the soil, water, or air. | Neighbouring landowners, sensitive environmental areas. | Yes. | L = 2 C = 3 Risk = Low |
| Uncertainty and Assumptions | | Waste streams, pathways and receptors are well understood. | | |
| Sensitivity to Change | | A large increase in the quantity and/or additional types of the waste would be required to change the results of the impact assessment. | | |
| Justification for the SPR confirmation/non-confirmation | | The quarry operations and activities will create waste streams onsite, which require management. | | |

Table 75 – Waste disposal source, pathway, and receptor identification at closure

| Potential Impact Event –Waste disposal closure 1 (WDC1): Waste produced by mining remains at the Site post-closure | | | | |
|---|----------------------|--|----------------------------|------------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Wastes generated by mining operations. | Present at the Site. | Landowner. | Yes | L = 2 C = 3 Risk = Low |
| Uncertainty and Assumptions | | Waste streams, pathways and receptors are well understood. | | |
| Sensitivity to Change | | Change of proposed final land use is unlikely to significantly alter the impact event. | | |
| Justification for the SPR confirmation/ non-confirmation | | The quarry operations and activities will create waste streams onsite, which require management. | | |

5.18.3 Control and management strategies

The control and management strategies to mitigate potential impacts or to reduce impacts to acceptable levels are listed in **Table 76**.

Table 76 – Control and management strategies for Waste disposal

| Control and management strategy | Impact event | Uncertainty and assumptions |
|---|---------------------|---|
| General waste is neatly stored in bins with lids before being collected from the Site by licenced third-party waste management services. | WDO1 | High certainty to reduce pollution from wastes. |
| Good housekeeping and waste reduction practices will be incorporated. | WDO1 | High certainty to reduce pollution from wastes. |
| Major mechanical servicing is undertaken offsite unless not possible to relocate the machinery. | WDO1 | High certainty to prevent pollution from wastes. |
| Any liquid wastes are stored within a bunded area ready for collection in accordance with EPA Bunding and spill management guidelines. | WDO1 | High certainty to prevent pollution from wastes. |
| Receipts from offsite waste disposal and waste oil collection are obtained and kept. | WDO1 | High certainty to demonstrate good waste management. |
| Any new fuel storage areas to be constructed as per the EPA Bunding and spill management guidelines. | WDO1 | High certainty to prevent pollution from spills. |
| Spill kits will be made available on the Site to clean minor spills and any minor spills will be either removed from the Site to an EPA licenced facility or treated in a bioremediation area and decontaminated. | WDO1 | High certainty to prevent pollution from wastes. |
| General waste management conducted in accordance with the Environment Protection (Waste to Resources) Policy 2010 (or subsequent policies). | WDO1, WDC1 | High certainty to reduce contamination sources at the Site. |

| Control and management strategy | | Impact event | Uncertainty and assumptions |
|---|--|---|--|
| An inspection of the Site conducted annually (and prior to closure) will ensure that all mining related wastes are appropriately stored or have been removed from the Site. | | WDO1, WDC1 | High certainty to demonstrate good waste management. |
| Post-control risk assessment | | | |
| AQO1 – Contamination to land or water from mining related waste | | L2, C2 = Very low | |
| Description of the likely impact | | Wastes are appropriately disposed of and no evidence of contamination to land and water on and off the Site are observed. As control strategies are required to reduce the risk level from <i>Low</i> to <i>Very low</i> , the inclusion of an environmental outcome and measurement criteria is deemed appropriate. | |
| AQC1 – Mining related wastes remain on the Site post-closure | | L1, C2 = Very low | |
| Description of the likely impact | | No mining related wastes are present at the Site at closure and no impacts are observed. As control strategies are required to reduce the risk level from <i>Low</i> to <i>Very low</i> , the inclusion of an environmental outcome and measurement criteria is deemed appropriate. | |

5.18.4 Outcome and measurement criteria

The environmental outcome and measurement criteria for Waste disposal is provided in **Table 77** and **Table 78**.

Table 77 – Operational Waste disposal environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|---|---|--|-----------------------|--------------------------|
| The Tenement Holder must, during construction, operation, and post completion, ensure that all commercial, industrial, and domestic waste is disposed of in accordance with relevant legislation. | | Site records will demonstrate that all waste has been managed in accordance with relevant waste policies, standards, and guidelines under the <i>Environment Protection Act 1993</i> . | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| WDO1 | Site records (evidence of appropriate waste disposal and annual inspections). | Disturbance area. | Ongoing and annually. | Not applicable. |

Table 78 – Closure Waste disposal environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|---|--|---|---------------------|--------------------------|
| The tenement holder must ensure that no mining related wastes are present on the land at the completion of mining activities. | | An inspection by a suitably qualified person will confirm that all mining related waste has been removed from the final rehabilitated landform and the land is free of contamination. | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| WDC1 | Report from inspection of the whole final landform area. | Whole site. | Prior to surrender. | Not applicable. |

5.19 Weeds, pests, and plant pathogens

5.19.1 Context

5.19.1.1 Weeds

As described in **Section 2.8.2**, to confirm the presence of weeds in the local area, a search of the BDBSA was undertaken to create a list of introduced flora (weeds) within 2km of the Site.

The search identified 165 species of weeds registered within 2km of the Site boundary, of which 17 are listed as declared weeds pursuant to the *Landscape South Australia Act 2019*.

The *Ecological Baseline Survey Report* in **Attachment 3** (Smith, 2025), identified 14 species of introduced vegetation were observed to be present at the Site.

Of the species observed at the Site during the inspections and the *Ecological Baseline Survey*, 3 species of environmental weeds are declared under the *Landscape South Australia Act 2019* (Department for Environment and Water, 2020). The declared species include:

- *Chrysanthemoides monilifera ssp. Monilifera (Boneseed)**
- *Genista monspessulana (Montpellier Broom, Cape Broom)**
- *Rosa canina (Dog Rose).*

**Also listed as a Weed of National Significance.*

5.19.1.2 Pests

As described in **Section 2.9.1** a search of the BDBSA was undertaken for observations of introduced fauna (pests) within 5km of the Site and identified records for 13 species.

The *Ecological Baseline Survey* identified one introduced fauna species at the Site, *Carduelis carduelis britannica* (European Goldfinch).

5.19.1.3 Plant pathogens

As described in **Section 2.8.3**, no plant pathogens are known to be present at the Site.

A review of the spatial data displaying the locations of phytophthora infestations within South Australia Government of South Australia (2024c), showed that the nearest phytophthora sighting (not confirmed in a

soil test) was recorded to have occurred approximately 3.34kms south of the Site within the Myponga Conservation Park.

Applicable Legislation and Standards:

- *Landscape South Australia Act, 2019.*

5.19.2 Potential impact events

Potential impact events for weeds, pests and plant pathogens are provided in **Table 79** and **Table 80** and supported by the discussion in **Section 2.8**.

Table 79 – Weeds and plant pathogens source, pathway, and receptor identification during operations

| Potential Impact Event – Weeds, pests, and plant pathogens operational 1 (WPPO1): An increased in the abundance or introduction of new weeds to the Site causes weeds to spread outside of the Site. | | | | |
|---|--|---|---------------------|---------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Existing weeds, or weeds and plant pathogens introduced by vehicles or equipment entering the Site. | Seeds transported via wind, biological vectors or vehicles leaving the Site. | Neighbouring property owners. | Yes. | L = 3 C = 3 Risk = Medium |
| Uncertainty and Assumptions | | The impact assessment is based on site-specific surveying and databases of actual observations. | | |
| Sensitivity to Change | | As the impact assessment already assumes weeds can cause a high impact on the landowner’s surrounding farming operations, sensitivity to change is low. | | |
| Justification for the SPR confirmation/non-confirmation | | The source, pathway and receptor have been confirmed following a survey of the Site. | | |

Table 80 – Pests fauna source, pathway, and receptor identification during operations

| Potential Impact Event – Weeds, pests, and plant pathogens operational 1 (WPPO2): An increase in the abundance of pest fauna due to stockpile landforms supporting denning, nesting, or burrows. | | | | |
|---|---------|--|---------------------|------------------------------|
| Source | Pathway | Receptor | Confirmation of SPR | Pre-control Risk Assessment |
| Pest animals attracted to the Site by suitable habitat attributes. | Land. | Native fauna. | Yes. | L = 3 C = 2 Risk = Low |
| Uncertainty and Assumptions | | The pest fauna assessment has been informed by Site-based observations and there is no uncertainty on the positive identification of pest fauna, but minor uncertainty on pest fauna species not seen. | | |
| Sensitivity to Change | | The likelihood of pest species entering the Site may be sensitive to land use changes outside of the MC 4569 area. | | |
| Justification for the SPR confirmation/ non-confirmation | | The source, pathway and receptor have been confirmed following a survey of the Site. | | |

5.19.3 Control and management strategies

The control and management strategies to mitigate potential impacts or to reduce impacts to acceptable levels are listed in **Table 81**.

Table 81 – Control and management strategies for Weeds, pests, and plant pathogens

| Control and management strategy | Impact event | Uncertainty and assumptions |
|--|---|---|
| Any staff and contractors are made aware of the requirement to operate in a manner that minimises the potential spread of weeds. | WPPO1 | Moderate certainty to reduce the spread of weeds at the Site. |
| Vehicles and machinery only travel on well-defined access tracks and operate within well-defined work areas. | WPPO1 | High certainty to reduce the likelihood of the introduction of new weeds and pathogens. |
| If areas containing weeds are entered, all equipment, vehicles and machinery will be washed down prior to leaving the area. | WPPO2 | Moderate certainty to reduce the spread of weeds. |
| General waste is covered and disposed of regularly so not to attract vermin. | WPPO2 | High certainty to prevent pest fauna being attracted to the Site. |
| Annual weed, plant pathogens and pest fauna inspections will be undertaken. | WPPO1 | High certainty to identify and address weed, pest, or plant pathogen impacts. |
| Weed and pest fauna management undertaken as required in accordance with advice provided by the Hills and Fleurieu Landscape Board (HFLB)/PIRSA following observations made in annual inspections or operational observations during operations. | WPPO1, WPPO2 | High certainty to address weed, pest, or plant pathogen impacts. |
| Post-control risk assessment | | |
| WPPO1 – Spread of weeds and plant pathogens | L2, C2 = Very low | |
| Description of the likely impact | Environmental weeds and plant pathogens are prevented from leaving the Site. As control strategies are required to reduce the risk level from <i>Medium</i> to <i>Very low</i> , the inclusion of an environmental outcome and measurement criteria is deemed appropriate. | |
| WPPO2 – Increase in the presence of pest fauna | L2, C2 = Very low | |
| Description of the likely impact | No observed increase in the presence of pest fauna species inhabiting the Site. As control strategies are required to reduce the risk level from <i>Low</i> to <i>Very low</i> , the inclusion of an environmental outcome and measurement criteria is deemed appropriate. | |

5.19.4 Outcome and measurement criteria

The environmental outcome and measurement criteria for weeds, pests and plant pathogens is provided in **Table 82**.

Table 82 – Weeds, pests and plant pathogen environmental outcome and measurement criteria

| Environmental outcome | | Measurement criteria (outcome achievement) | | |
|---|---|---|--|--|
| The tenement holder must, during construction and operation, ensure no introduction of new species of environmental weed, plant pathogens or pests (including feral animals), nor sustained increase in abundance of existing weed or pest species on the land. | | Site records will demonstrate that annual inspections are undertaken for new weeds, plant pathogens or pests (including feral animals) and for evidence of increased abundance of existing weeds, plant pathogens and/or pests (including feral animals) and any positive observations were managed in a timely fashion and in accordance with available advice from PIRSA and/or the Hills and Fleurieu Landscape Board. | | |
| Potential impact | Measurement type and form | Locations | Frequency | Control or baseline data |
| WPPO1 | Annual inspections for weeds and plant pathogens and records of follow-up management actions as required. | Whole site particularly around disturbed areas and internal roads. | Annual inspections and follow-up actions undertaken in the appropriate season as advised by PIRSA and/or the HFLB. | Previous annual compliance report and neighbouring properties. |
| WPPO2 | Annual inspections for pest fauna and records of follow-up management actions as required. | Whole site particularly around topsoil stockpiles and visual screens. | Annual inspections and follow-up actions undertaken in the appropriate season as advised by PIRSA and/or the HFLB. | Previous annual compliance report and neighbouring properties. |

5.20 Compliance summary and monitoring plan

A compliance monitoring plan for the Site will be attached to the Program for Environment Protection and Rehabilitation should a mining lease be granted over MC 4569.

6 REASONABLE PROSPECT OF ACCESS TO LAND

Engagement with the landowners was undertaken on 15 November 2024 and confirmed that continuous access to the Site will be provided using the existing EML 5542 access.

The following exempt land has been identified within the MC 4569 area in accordance with Section 9 of the *Mining Act 1971*:

1. 5203 Main South Road (landowner's property) – land situated within 400m of a building or structure used as a place of residence, and land within 150m of a well or dam.
2. 66kV and 11kV SA Power Network (SAPN) transmission lines – land situated within 150m of a building or structure, with a value equal to or exceeding the prescribed amount, used for an industrial or commercial purpose.
3. 6 Fork Tree Road – land situated within 400m of a building or structure used as a place of residence (to be confirmed).
4. 45 Nunn Road – land situated within 400m of a building or structure used as a place of residence.

Obtaining waivers for the exempt land from the landowner and SAPN has been deemed as critical for access to the MC 4569, as the exempt land area for both parties covers the majority of the proposed quarrying area.

Both the landowners and SAPN have signed a Form 23B agreeing to waive the benefit of exemption.

Obtaining waivers from the owners of 6 Forktree Rd and 45 Nunn Rd would allow for the full development of the East Pit as proposed in MP Drawings 18 – 20, but as they only cover a portion of the area, the pit could be designed not to include these areas if required, and EML 5542 could also be maintained.

A review of SARIG shows that the land is not covered by an Indigenous Land Use Agreement (ILUA) and as the land is owned freehold, the MC 4569 is not subject to Native Title.

Should the waivers from the landowner and SAPN be provided, it is considered that there is a reasonable prospect that the land.

7 DESCRIPTION OF CONTRIBUTIONS TO THE ECONOMY

The primary economic contributions facilitated by the proposed operations would be expected to include government royalty payments, procurement of local goods and services for the operations such as mechanical services.

Material from the quarry is utilised for small to medium scale projects on the Fleurieu Peninsula and ensures that a competitive market for quarry products exists in the local area.

Annual rental fees will be paid as per Mining Act requirements, and compensation will be paid to the landowner in accordance with the land access agreement.

8 MAPS AND CROSS-SECTIONS

A list of all the drawings provided to support the contents of this MP is provided in the **Drawings** section.

8.1 Description of the Existing Environment Maps

Table 83 provides a checklist for items to be included in the maps supporting the description of the environment and reference to the Drawing that each item is located.

Table 83 – Description of existing environment map reference table

| TOR003 subheading | Map item | Featured drawing |
|--------------------------|--|--|
| Topographic Map | Mineral claim boundaries. | All drawings. |
| | Existing surface contours. | MP Drawing 2 and MP Drawing 9. |
| | Existing vegetation. | MP Drawing 10 and Attachment 3. |
| | Location of watercourses, including ephemeral and permanent rivers, creeks, swamps, streams, wetlands, and any man-made water management structures. | MP Drawing 8 and MP Drawing 9. |
| | Surface water catchment boundaries. | MP Drawing 8. |
| | Direction of drainage and discharge from the application area. | MP Drawing 9. |
| | Location and extent of all previously disturbed areas associated with previous mining. | MP Drawing 17. |
| | Location and extent of any adjacent conservation reserves, heritage sites or any other significant areas. | MP Drawing 16. |
| Local Geological Map | Mineral claim boundaries. | All drawings. |
| | Location and dimensions of the deposit. | MP Drawing 4. |
| | Topsoil/subsoil variation if there is a variation in soils over the application area | MP Drawing 3. |
| Groundwater Map | Groundwater wells in the surrounding area highlighting those used to determine the groundwater level. | MP Drawing 7. |
| Land Access Map | Mineral claim boundaries. | All drawings. |
| | Proposed tenement boundary if an area smaller than the mineral claim is proposed. | Not applicable. |
| | Any exempt land. | MP Drawing 14. |
| | Location of residences within and near the application area. | MP Drawing 13. |
| | Human infrastructure as per clause 1.12. | MP Drawing 13. |

8.2 Description of the Proposed Quarrying Operations

Table 84 provides a checklist for items to be included in the maps supporting the description of mining operations and reference to the Drawing that each item is located.

Table 84 – Description of the proposed quarrying operations map reference table

| TOR003 subheading | Map item | Featured drawing |
|--|---|---|
| Site Layout Map | Tenement boundaries. | All drawings. |
| | Location of sediment management infrastructure. | MP Drawing 17. |
| | If relevant, location of process water dams. | Not applicable. |
| | Location of haul roads. | MP Drawings 17 – 20. |
| | If relevant, location of fixed plant. | Not applicable. |
| | Location of mobile plant for stage 1 of quarrying. | MP Drawing 17 and MP Drawing 18. |
| | Location of overburden. | MP Drawings 18 – 20. |
| | Location and extent of topsoil/subsoil and product stockpiles. | MP Drawings 17 – 20. |
| Sequence of Quarrying and Progressive Rehabilitation Map | Proposed tenement boundaries. | All drawings. |
| | Conceptual staging of each progressive quarrying stage. | MP Drawings 18 – 20. |
| | Proposed native vegetation clearance. | MP Drawings 18 – 20. |
| | Conceptual staging of each progressive rehabilitation stage. | MP Drawings 18 – 20. |
| Access Route Map | Proposed access route for heavy vehicles. | MP Drawings 17 – 20, 24. |
| | Proposed exit route for heavy vehicles. | MP Drawings 17 – 20, 24. |
| | Any road upgrades or new roads to be constructed if relevant. | Not applicable. |
| Quarry Completion Map | Final landforms (including rehabilitated and non-disturbed areas). | MP Drawing 21 and MP Drawing 22. |
| | Proposed topographical contours of the entire site (including rehabilitated and non-disturbed areas). | MP Drawing 21 and MP Drawing 22. |

8.3 Cross-sections for the Description of the Existing Environment

Table 85 provides a checklist for items to be included in cross-section drawings supporting the description of the existing environment and reference to the Drawing that each item is located.

Table 85 – Cross-section for description of the existing environment map reference table

| TOR003 subheading | Map item | Featured drawing |
|----------------------------|---|------------------|
| Geological cross-sections | A representation of the extent of the resource. | MP Drawing 23. |
| | Depth of the resource and any overlying overburden. | MP Drawing 23. |
| Groundwater cross-sections | The proposed depth of mining. | MP Drawing 23. |
| | The depth to groundwater. | MP Drawing 23. |

8.4 Cross-sections for the Description of the Proposed Mining Operations

Table 86 provides a checklist for items to be included in cross-section drawings supporting the description of mining operations and reference to the Drawing that each item is located.

Table 86 – Cross-section for the description of the proposed mining operations map reference table

| TOR003 subheading | Map item | Featured drawing |
|----------------------------------|---------------------------------------|------------------|
| Quarry operation cross-sections | Proposed pit depth. | MP Drawing 23. |
| | Proposed pit dimensions. | MP Drawing 23. |
| Quarry completion cross-sections | Pre quarrying natural surface. | MP Drawing 23. |
| | Proposed final rehabilitated surface. | MP Drawing 23. |

8.5 Proposed monitoring locations

Table 87 provides a list of proposed monitoring locations (to be confirmed in the PEPR should a mining lease be approved) included in an operational monitoring location map (MP Drawing 25) and reference to the section of this MP relevant to the monitoring.

Table 87 – Operational compliance monitoring map reference table

| Environmental outcome | Provisional monitoring point / area | Approximate coordinates (UTM zone 54H) or monitoring area |
|--|--|---|
| Blasting | (1) Landowner's residence. (2) Near 45 Nunn Road. | (1) 266764 mE 6077900 mS. (2) 267384 mE 6077510 mS. |
| Caves, Fire, Groundwater, Heritage, Land use, Native fauna, Public safety, Third-party property, Waste disposal, Weeds, pests and plant pathogens. | All disturbance areas. | All disturbance areas. |
| Dragout and Traffic | Site access point. | 266693 mE 6077880 mS. |
| Native vegetation | NVMP trees, all other native vegetation. | Refer to MP Drawing 10. |
| Soil | Soil stockpiles. | Various locations adjacent to the quarry pit. |

| Environmental outcome | Provisional monitoring point / area | Approximate coordinates (UTM zone 54H) or monitoring area |
|-----------------------|---|--|
| Surface water | Sediment retention dam overflow. | 266787 mE 6077686 mS. |
| Third-party property | Powerlines and power poles. | Powerlines and power poles north of the MC 4569 area. |
| Visual amenity | <ul style="list-style-type: none"> (1) Main South Road (in line with SR5). (2) Main South Road and Forktree Road intersection. (3) 102 Causeway Road (along internal track). (4) Nunn Road (near SR1 and SR2) | <ul style="list-style-type: none"> (1) 266292 mE 6077740 mS. (2) 266579 mE 6077831 mS. (3) 268044 mE 6077857 mS. (4) 267347 mE 6077483 mS. |

9 REFERENCES

Bureau of Meteorology (2024a), *Climate classification maps*, accessed online 19 November 2024 at [this link](#).

Bureau of Meteorology (2024b), *Climate statistics for Australian locations – Parawa (Second Valley Forest AWS) (site number 023875)*, accessed online 19 November 2024 at [this link](#).

Commonwealth of Australia (2003), *Swamps of the Fleurieu Peninsula Threatened Ecological Community (map)*, produced by Environment Australia, Commonwealth of Australia, Canberra. Accessed online 7 January 2025 at [this link](#).

Department of Climate Change, Energy, the Environment and Water (2024a), *Protected Matters Search Tool*, accessed online on 19 November 2024 at [this link](#).

Department for Energy and Mining (SA) (2021), *Mineral regulatory guideline MG38 – New quarry applications*, accessed online 20 November 2024 at [this link](#).

Department of Environment, Water and Natural Resources (SA) (2016), *Soil and land fact sheet no. 1*, accessed online on 21 November 2024 at [this link](#).

Government of South Australia (2024a), *South Australian Resources Information Gateway*, accessed online 19 November 2024 at [this link](#).

Government of South Australia (2024b), *Nature Maps*, accessed online 19 November 2024 at [this link](#).

Government of South Australia (2024c), *Inman Valley Land System Report*, accessed online 19 November 2024 at [this link](#).

Government of South Australia (2024d), *WaterConnect*, accessed online 19 November 2024 at [this link](#).

Government of South Australia (2024e), *SA Heritage Places Database Search*, accessed on line 20 November 2024 at [this link](#).

Government of South Australia (2024f), *Location SA Map Viewer*, accessed online 19 November 2024 at [this link](#).

Government of South Australia (2024g), *SA Property and Planning Atlas (SAPPA)*, accessed online 20 November 2024 at [this link](#).

Government of South Australia (2024h), *Earthquake Hazard Zones of South Australia*, Produced by DPTI - Planning Division, accessed online in 7 January 2025 at [this link](#).

Government of Western Australia (1997), *Safety Bund Walls Around Abandoned Open Pit Mines Guideline*, Department of Industry and Resources. Accessed online 8 January 2025 at [this link](#).

Landscape South Australia Act 2019.

Smith, G.B. (2025), *MC 4569 Ecological Baseline Survey and Native Vegetation Management Plan*, Report to Macro Environmental, GBS Consulting, Adelaide.

Drawings

MP Drawing 1 – Site location map

MP Drawing 2 – Local topography and landscape map

MP Drawing 3 – Soil type and stockpile map

MP Drawing 4 – Local geology and resource map

MP Drawing 5 – Local groundwater well locations and salinity levels

MP Drawing 6 – Groundwater dependent ecosystem map

MP Drawing 7 – Local groundwater well locations and water levels

MP Drawing 8 – Local hydrology map

MP Drawing 9 – Surface water flow map

MP Drawing 10 – Native vegetation map

MP Drawing 11 – Phytophthora presence observation map

MP Drawing 12 – Local land use map

MP Drawing 13 – Local housing and infrastructure map

MP Drawing 14 – Exempt land map

MP Drawing 15 – Viewshed analysis results

MP Drawing 16 – Proximity to conservation areas map

MP Drawing 17 – Pre-existing disturbance and site layout map

MP Drawing 18 – Stage 1 mining and rehabilitation plan

MP Drawing 19 – Stage 2 mining and rehabilitation plan

MP Drawing 20 – Stage 3 mining and rehabilitation plan

MP Drawing 21 – Concept final landform design plan

MP Drawing 22 – Concept final landform design plan (with vegetation)

MP Drawing 23 – Concept final landform design plan (cross-sections)

MP Drawing 24 – Product transport and vehicle access map

MP Drawing 25 – Compliance monitoring map.







MP Drawing 1

Site location map

Whittlesea Quarry
 EML 5540 & MC 4569
 Craig Haywood
 17/12/2024
 GDA2020 / MGA zone 54

Legend

-  Mineral Claim 4569
-  Town / city
- State boundaries
-  South Australia
- Roads
-  ROAD
- Orthophoto
- Google imagery

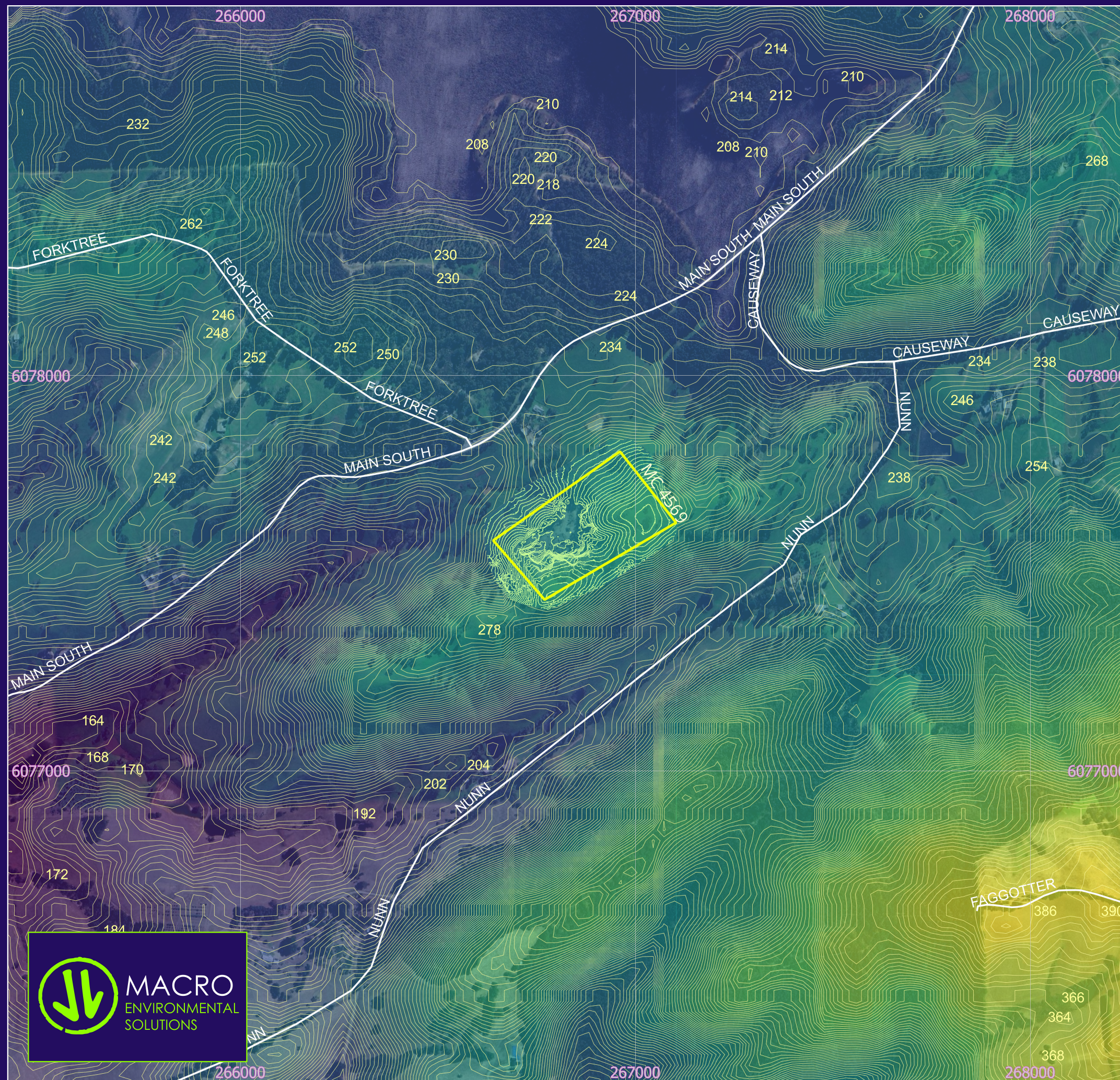


MP Drawing 2 Local topography and landscape map

Whittlesea Quarry
EML 5540 & MC 4569
Craig Haywood

17/12/2024

GDA2020 / MGA zone 54



Legend

 Mineral Claim 4569

Roads

 ROAD

Digital Elevation Model (ELVIS & UAV)

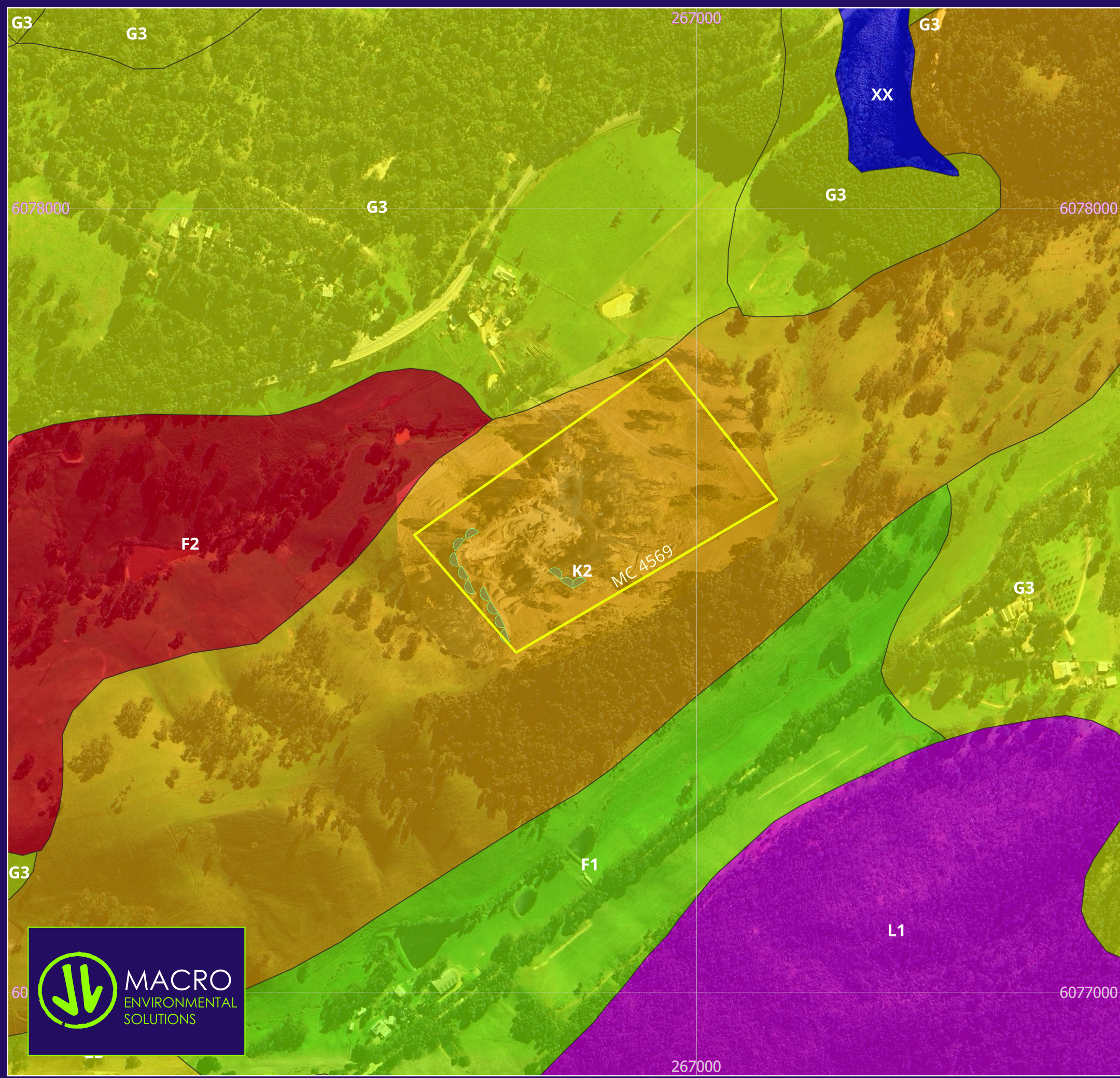
Elevation (m AHD)

 398

150

Google imagery





MP Drawing 3









Soil type and stockpile map

Whittlesea Quarry
 EML 5540 & MC 4569
 Craig Haywood




17/12/2024

GDA2020 / MGA zone 54

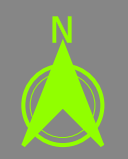
Legend

-  Mineral Claim 4569
-  Existing soil stockpiles
- Soil subgroups (Enviro Data SA)
 -  F1 - Loam over brown or dark clay
 -  F2 - Sandy loam over poorly structured brown or dark clay
 -  G3 - Thick sand over clay
 -  K2 - Acidic loam over clay on rock
 -  L1 - Shallow soil on rock
 -  XX - Water

Orthophoto (2024)

-  Band 1 (Red)
-  Band 2 (Green)
-  Band 3 (Blue)

Google imagery

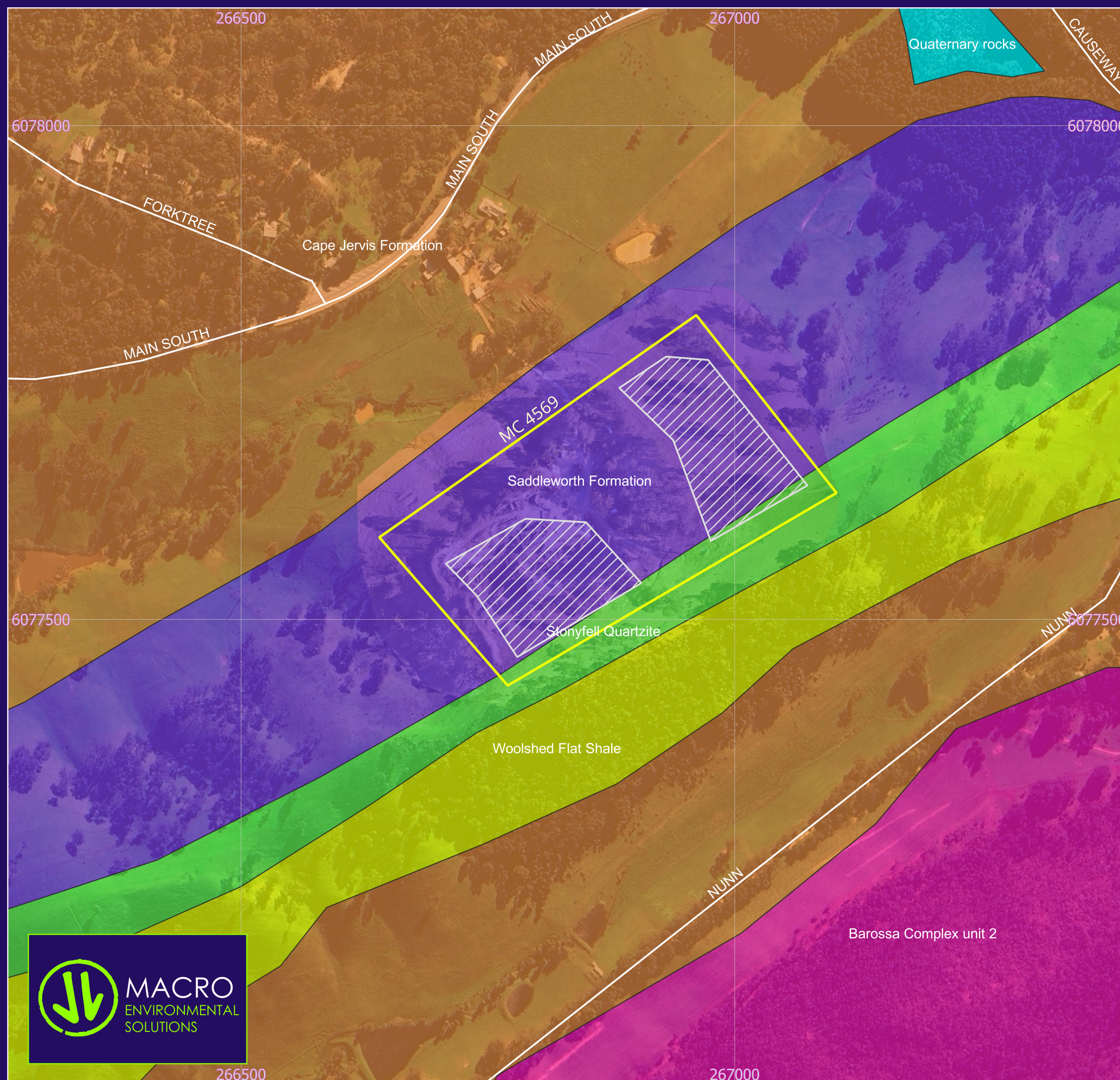


MP Drawing 4 Local geology and resource map

Whittlesea Quarry
EML 5540 & MC 4569
Craig Haywood

17/12/2024

GDA2020 / MGA zone 54



Legend

- Mineral Claim 4569
- Proposed mining areas
- 100K Surface Geology (SARIG)
- Barossa Complex unit 2
- Cape Jervis Formation
- Quaternary rocks
- Saddleworth Formation
- Stonyfell Quartzite
- Woolshed Flat Shale
- Road network
- ROAD
- Google imagery



MP Drawing 5








Local groundwater well locations and salinity levels

Whittlesea Quarry
EML 5540 & MC 4569
Craig Haywood

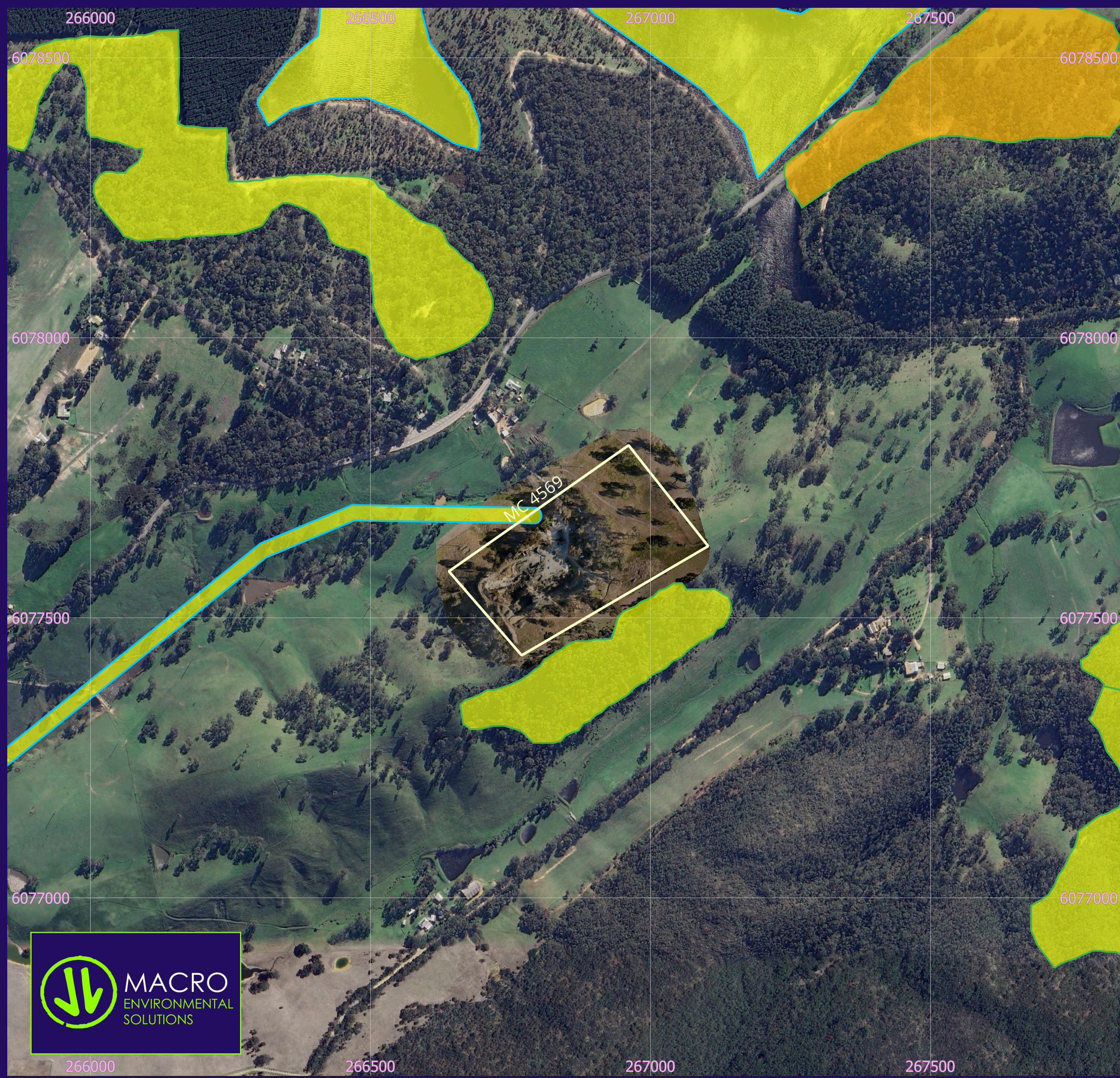
17/12/2024

GDA2020 / MGA zone 54

Legend

-  Mineral Claim 4569
-  Groundwater Total Dissolved Solids (TDS) levels (mg/L)
-  2m land contours
-  Road network
-  ROAD
-  Ortho (2024)
-  Google imagery





MP Drawing 6 Groundwater dependent ecosystem (GDE) map

Whittlesea Quarry
EML 5540 & MC 4569
Craig Haywood

07/01/2025

GDA2020 / MGA zone 54

Legend

- Mineral Claim 4569
- Aquatic GDE (BoM GDE Atlas)
 - High potential GDE
 - Moderate potential GDE
 - Low potential GDE
- Terrestrial GDE (BoM GDE Atlas)
 - High potential GDE
 - Moderate potential GDE
 - Low potential GDE
- Orthophoto (2024)
- Google imagery



266000 266500 267000 267500 6077000 6077500 6078000 6078500

MP Drawing 7








Local groundwater well locations and water levels

Whittlesea Quarry
EML 5540 & MC 4569
Craig Haywood

17/12/2024

GDA2020 / MGA zone 54

Legend

-  Mineral Claim 4569
-  Groundwater reduced standing water levels (RSWL) (m AHD)
-  2m land contours
-  Road network
-  ROAD
-  Ortho (2024)
-  Google imagery



MP Drawing 8 Local hydrology map

Whittlesea Quarry
EML 5540 & MC 4569
Craig Haywood

18/12/2024

GDA2020 / MGA zone 54



Legend

- Mineral Claim 4569
- Sediment retention dam
- Waterbodies (Enviro Data SA)
- Watercourses (Enviro Data SA)
 - Stream Order 1
 - Stream Order 2
 - Stream Order 3
- Watershed basin boundary

Orthophoto (2024)

Google imagery



MP Drawing 9 Surface water flow map

Whittlesea Quarry
EML 5540 & MC 4569
Craig Haywood

07/01/2025

GDA2020 / MGA zone 54



Legend

- Mineral Claim 4569
- 2m contours (m AHD)
- Channel Network (SAGA)
- Modelled flow direction
- Orthophoto (2024)
- Google imagery





MP Drawing 10

Site vegetation map with NVMP trees

Whittlesea Quarry
 EML 5540 & MC 4569
 Craig Haywood
 21/01/2025
 GDA2020 / MGA zone 54

Legend

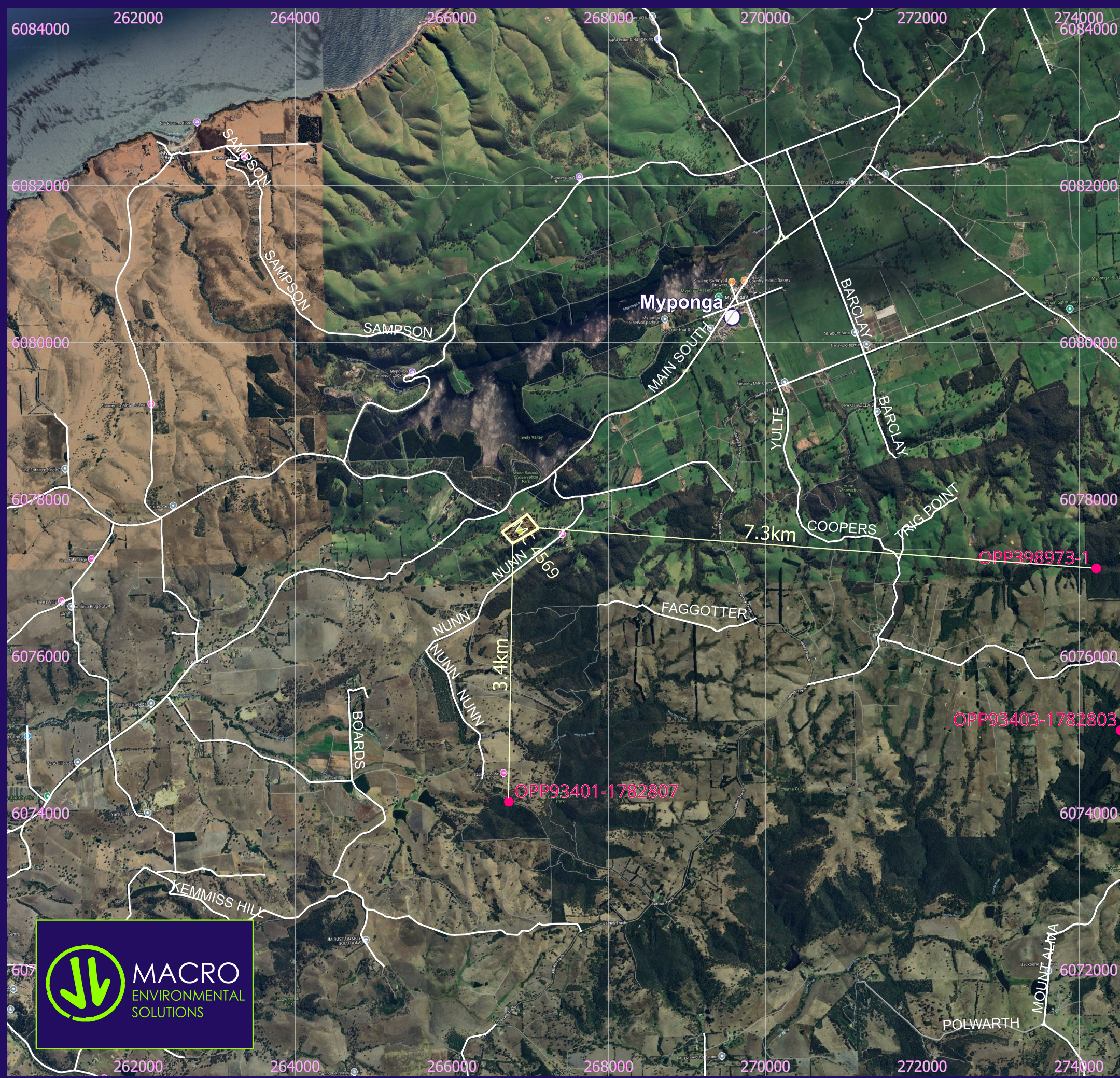
- Mineral Claim 4569
- Eucalypt woodlands
- Vegetated screening mound

Vegetation Layer (EnviroData SA)

- SM0101 - SM0101 - Eucalyptus obliqua woodland over Pultenaea daphnoides (mixed) tall shrubs and Lepidosperma semiteres (mixed) mid shrubs
- Approved clearance trees (1995 ADP)
- Proposed clearance trees

Orthophoto (2024)
 Google imagery









MP Drawing 11 Phytophthora presence observation map

Whittlesea Quarry
EML 5540 & MC 4569
Craig Haywood

18/12/2024

GDA2020 / MGA zone 54

Legend

-  Mineral Claim 4569
-  Myponga
-  Phytophthora identification
- Road network
-  ROAD
- Orthophoto (2024)
- Google imagery

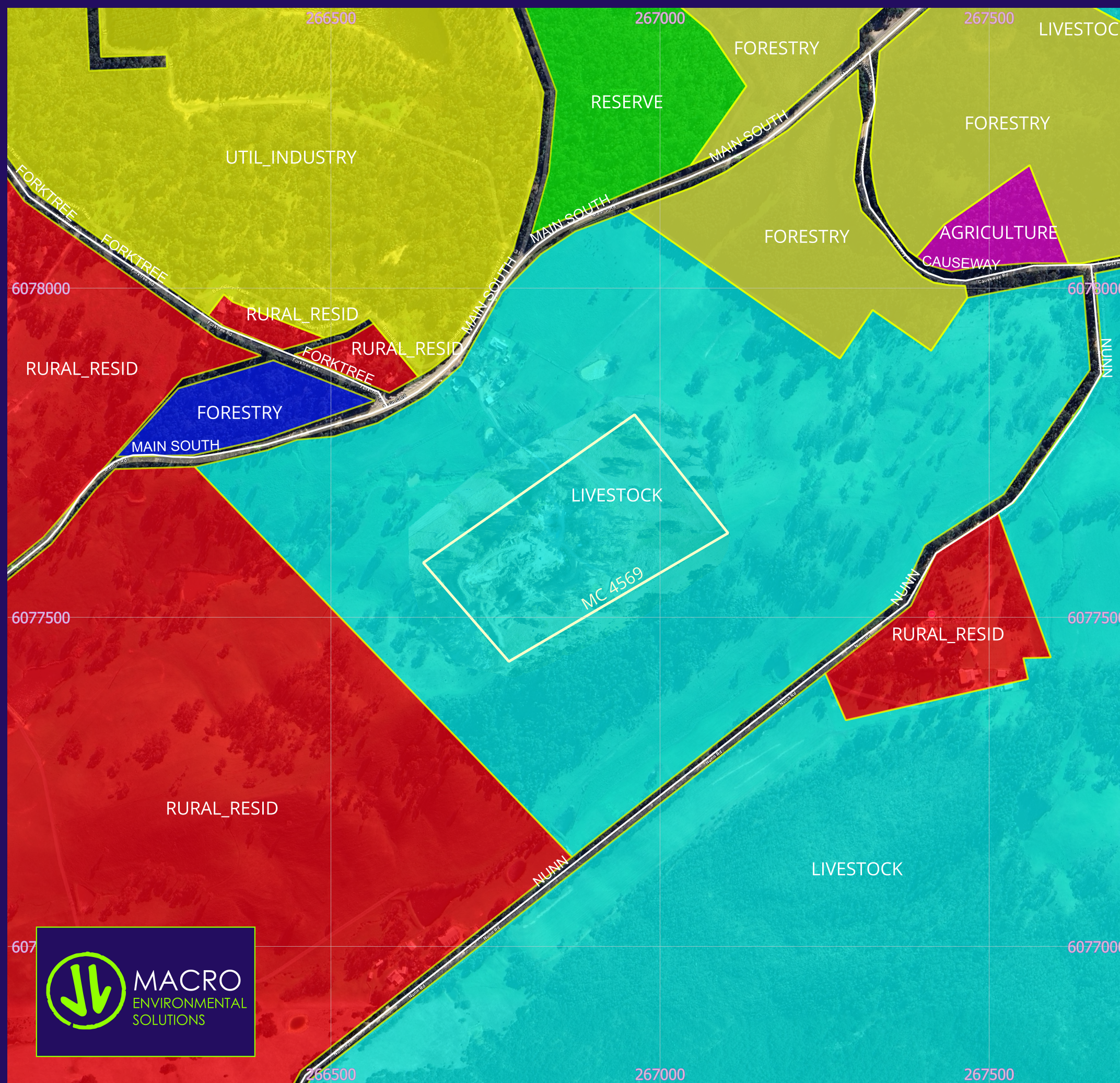


MP Drawing 12 Local land use map

Whittlesea Quarry
EML 5540 & MC 4569
Craig Haywood

18/12/2024

GDA2020 / MGA zone 54



Legend

Mineral Claim 4569

Land use

AGRICULTURE

FORESTRY

LIVESTOCK

RESERVE

RURAL_RESID

UTIL_INDUSTRY

Road network

ROAD

Orthophoto (2024)

Google imagery



MP Drawing 13 Local housing and infrastructure map

Whittlesea Quarry
EML 5540 & MC 4569
Craig Haywood

18/12/2024

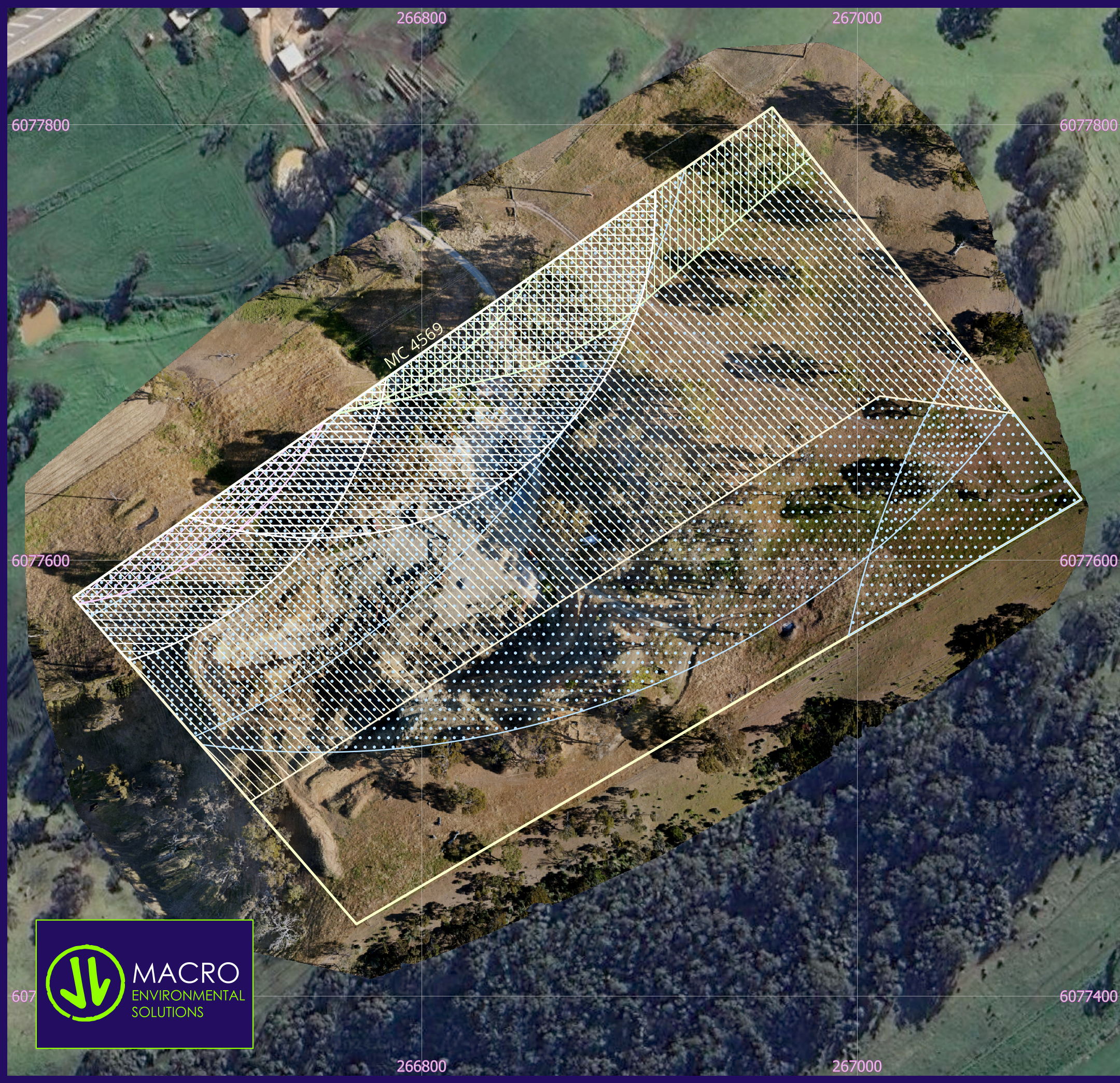
GDA2020 / MGA zone 54



Legend

- Mineral Claim 4569
- Sensitive receptors
- 11kV Transmission Line
- 66kV Transmission Line
- Road network
- ROAD
- Orthophoto (2024)
- Google imagery











MP Drawing 14 Exempt land map

Whittlesea Quarry
EML 5540 & MC 4569
Craig Haywood

18/12/2024

GDA2020 / MGA zone 54

Legend

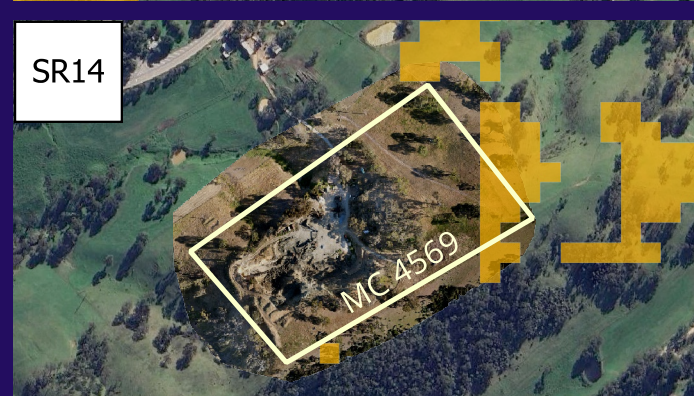
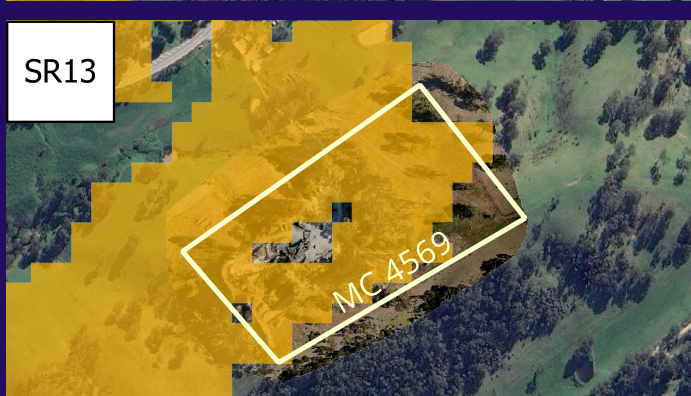
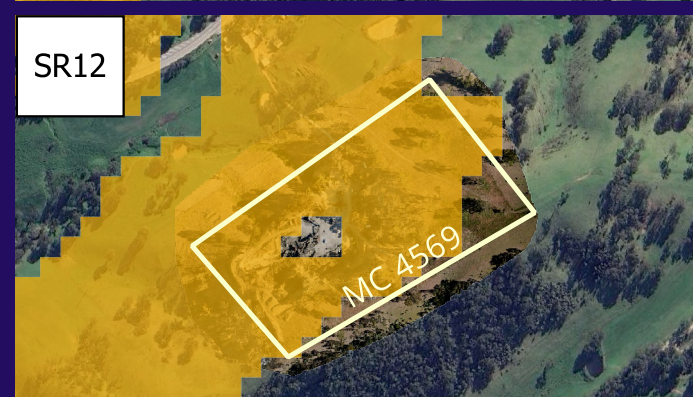
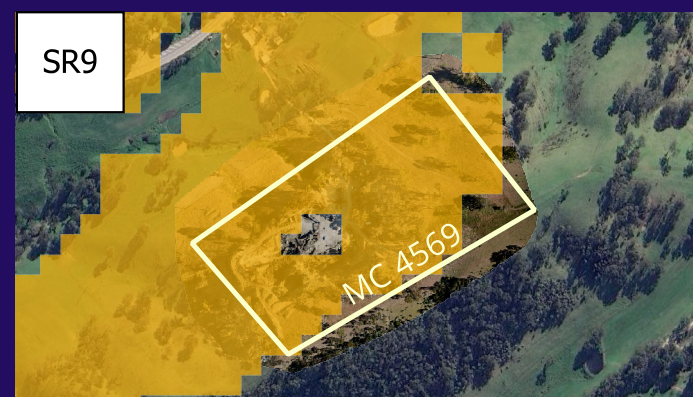
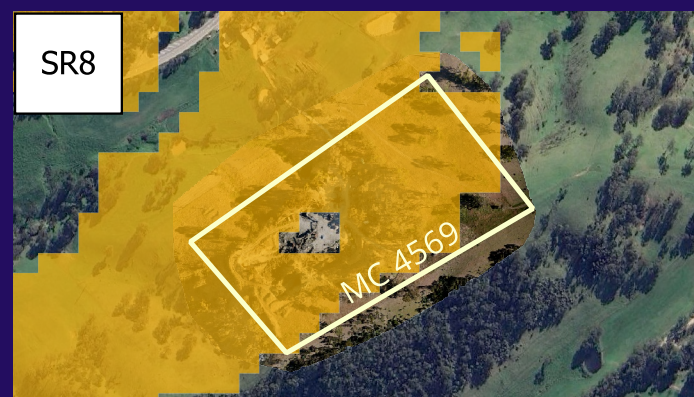
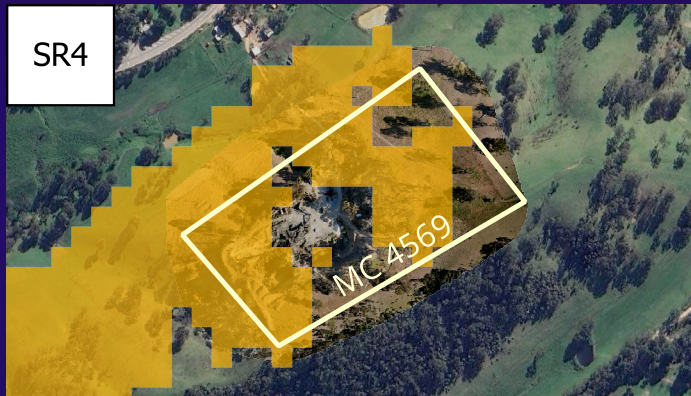
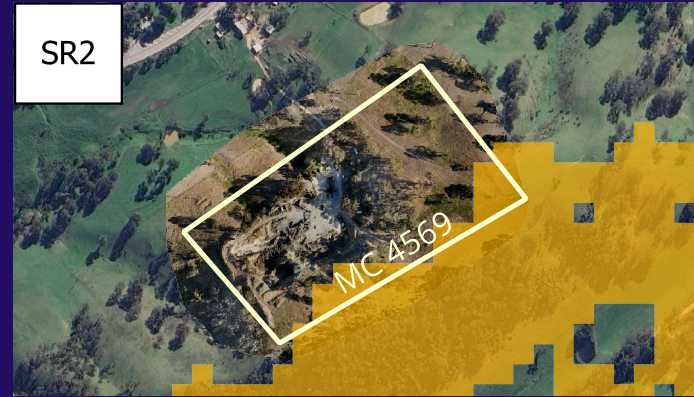
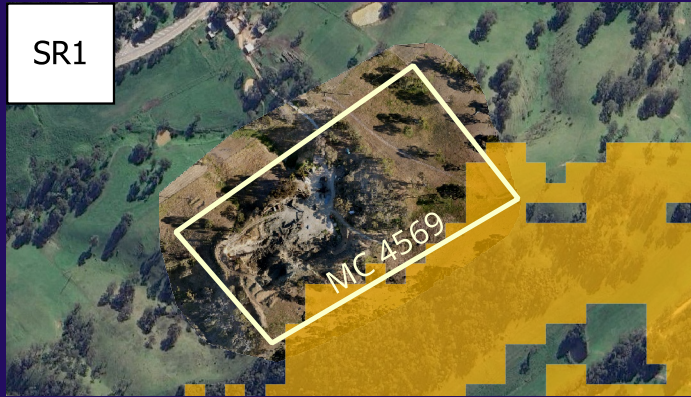
-  Mineral Claim 4569
-  Exempt land (150m of 11kV transmission line)
-  Exempt land (150m of 66kV transmission line)
-  Exempt land (150m of a dam)
-  Exempt land (150m of a groundwater well)
-  Exempt land (400m of a residence)

Orthophoto (2024)

Google imagery



6077800 266800 267000 6077800
6077600 6077600
6077400 266800 267000 6077400



MP Drawing 15


Viewshed analysis results

Whittlesea Quarry
EML 5540 & MC 4569
Craig Haywood


18/12/2024

GDA2020 / MGA zone 54

Legend

 Mineral Claim 4569

Sensitive receptor (SR) viewshed
Viewshed analysis (based on
ELVIS Digital Elevation Model)

 Visible from SR location
(2m above groundlevel)

Orthophoto (2024)

Google imagery

