Mining Lease Proposal

MC 4558

Wilson Sand Pit

Date: March 2025

Version 2

Document Status

Program	Submission Date
Mining Lease Proposal – V1	15 December 2023
Mining Lease Proposal – V2	15 March 2025

Contents

1. Declaration of Accuracy

I, Richard Fricker (Director, Clay & Mineral Sales Pty Ltd) the applicant, have taken reasonable steps to review the information to ensure its accuracy.

Signature: 

Name: Richard Fricker

Position: Director, Clay & Mineral Sales Pty Ltd

Date: 12/3/25

1.1 Background

The Mining Lease Proposal is submitted by Clay and Mineral Sales Pty Ltd for the operation of a quarry within Mineral Claim 4558, approximately 40kms North of Adelaide in the Reeves Plains area. The current Mineral Claim 4558 has a legal area of 8.1ha. The proposed mining operations and progressive rehabilitation will begin at the eastern end of the sand hill and progress in a westerly direction through the cultivated paddock. The sand hill consists of two different types of sand so the northern side of the hill may be mined faster than the southern side.

1.2 Site Overview

Tenement details is outlined in Table 1: Tenement Details

Table 1: Tenement Details

Tenement Number	MC4558
Tenement Holder/Operator	Clay & Mineral Sales Pty Ltd
Registration Grant Date	14/06/2023
Expiry Date	13/06/2024
Commodities	Sand
Legal Area (ha)	8.1ha
Commodity Categories	Construction Material

1.3 Proponent Details

The proponent details are outlined in Table 2: Proponent Details

Table 2: Proponent Details

Operator	Clay & Mineral Sales Pty Ltd
Percentage Share	100% Interest
Director	Richard Fricker
Postal address	PO Box 155, Surrey Downs SA 5126
Telephone	82514000
Email	richardf@claymineral.com.au

1.4 Operator Capability and Compliance History

Clay & Mineral Sales have been successfully mining all over South Australia for 50 years, having achieved a high standard of rehabilitation and a good working relationship with the mining branch of the Department of Energy and Mining. The company has the experience, expertise, knowledgeable staff, plan and equipment, financial capacity, and market position to operate this resource successfully.

Clay and Mineral apart from the 'Note' below, in the last 5 years, have not failed to comply with a provision of a corresponding Australian law or designated Australian Act in connection with authorised operation that resulted in:

- The revocation or suspension of an authority to carry out authorised operations; or
- A prosecution for an offence; or
- The imposition of a penalty by a court
- The issuing of a notice, direction or order that required the suspension or discontinuance of any authorised operation or the rectification of any harm to the environment or the rehabilitation of any land, place or other aspect of the environment.

Note: During June and July 2023, Clay & Mineral Sales were issued with Environmental Directions in relation to EML 5784, EML 5906 and EML 4425. The requirements of these notices were complied with.

2. Description of the Existing Environment

2.1 Topography and landscape

The Mining Lease Proposal is submitted by Clay and Mineral Sales Pty Ltd for the operation of a quarry within Mineral Claim 4558, which has a legal area of 8.1ha, approximately 40kms north of Adelaide.

The landscape is a typical agricultural paddock that has been degraded by cropping and grazing practices. A sand hill runs east to west at ~25mAHD, with the surrounding paddock ranging from 20 to 30mAHD (Refer Figure 1: Topography and Landscape). The region is relatively flat with outcrops of vegetation that have also been exposed to extended periods of pastoral land use causing changes in botanical composition (Refer Figure 2: Context Map).

Figure 1: Topography and Landscape

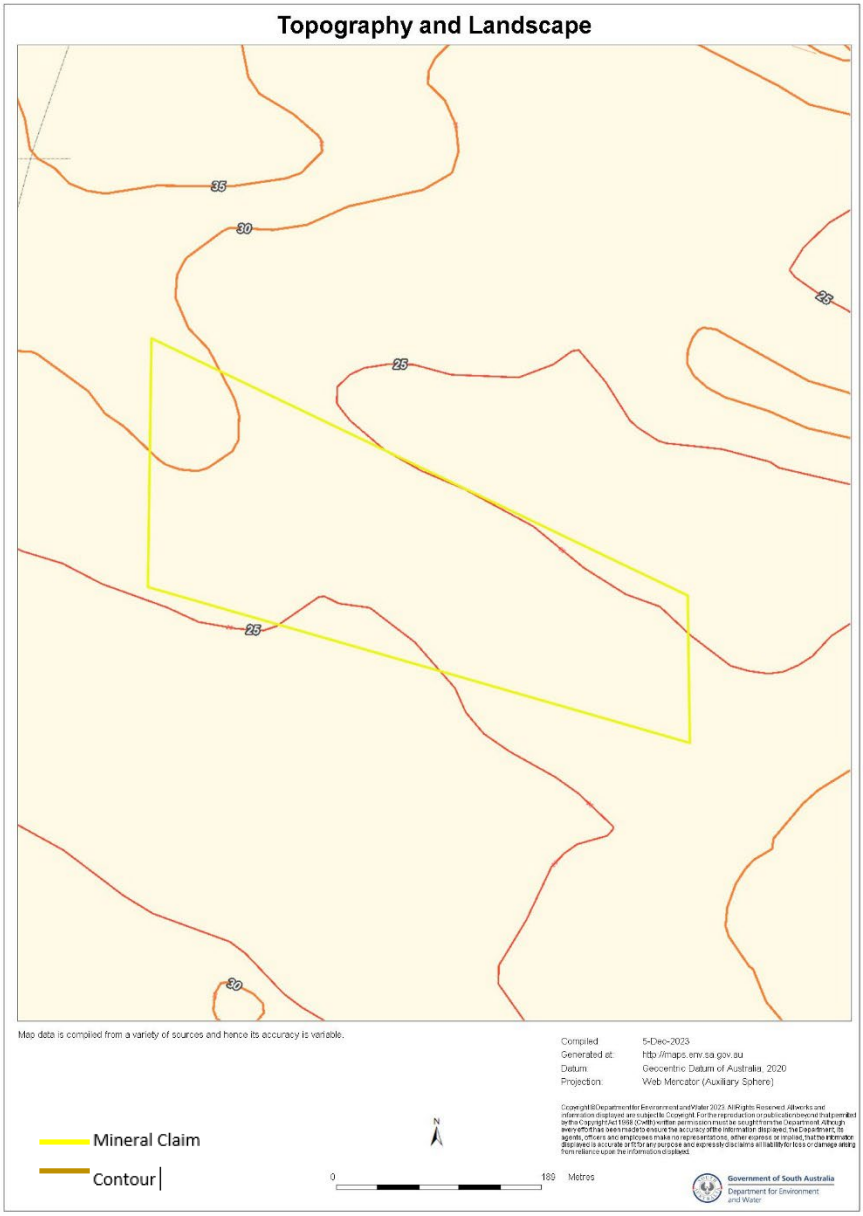
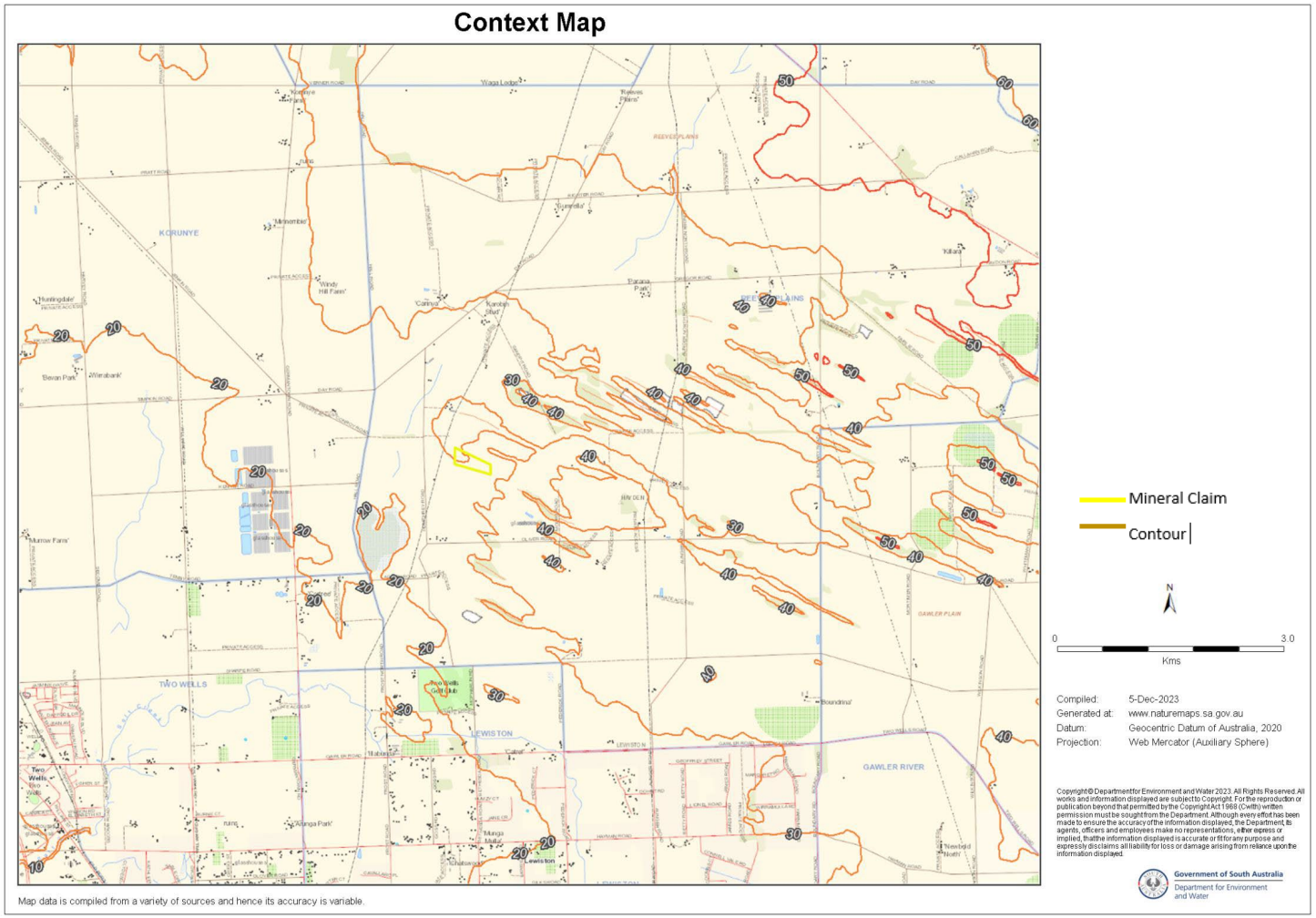


Figure 2: Context Map



2.2 Climate

Site climate data has been sourced from the Two Wells Bureau of Meteorology (site number 023028) which is approximately 7kms southwest of MC4558. The temperature patterns from 1997-2022 show the mean maximum winter temperature is 16.92°C and summer 29.86°C. The mean annual rainfall of 410mm from 1946-1980, with the lowest mean rainfall of 16.3mm occurring in March and the highest in May with 51.1mm.

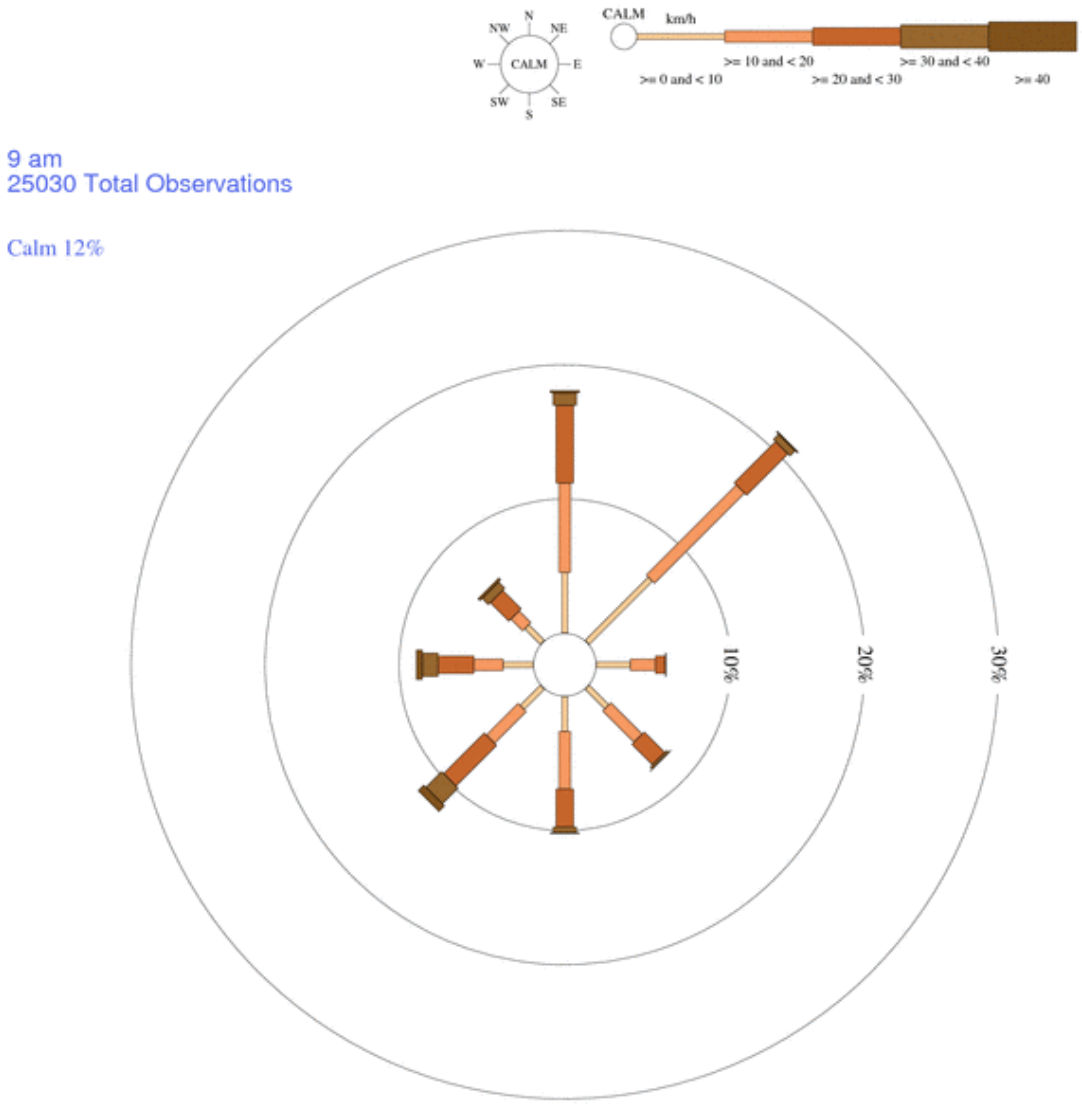
The prevailing wind is from the North Easterly as shown in Figure 3: Prevailing wind directions and speed below.

Figure 3: Prevailing wind directions and speed

Rose of Wind direction versus Wind speed in Km/h (1955 to 2016)

Site chosen is Adelaide airport which is the closest current site to Mineral Claim 4558.

- Site number 023034 - Latitude 34.95°S - 138.52°E - Elevation 2m (above sea level)



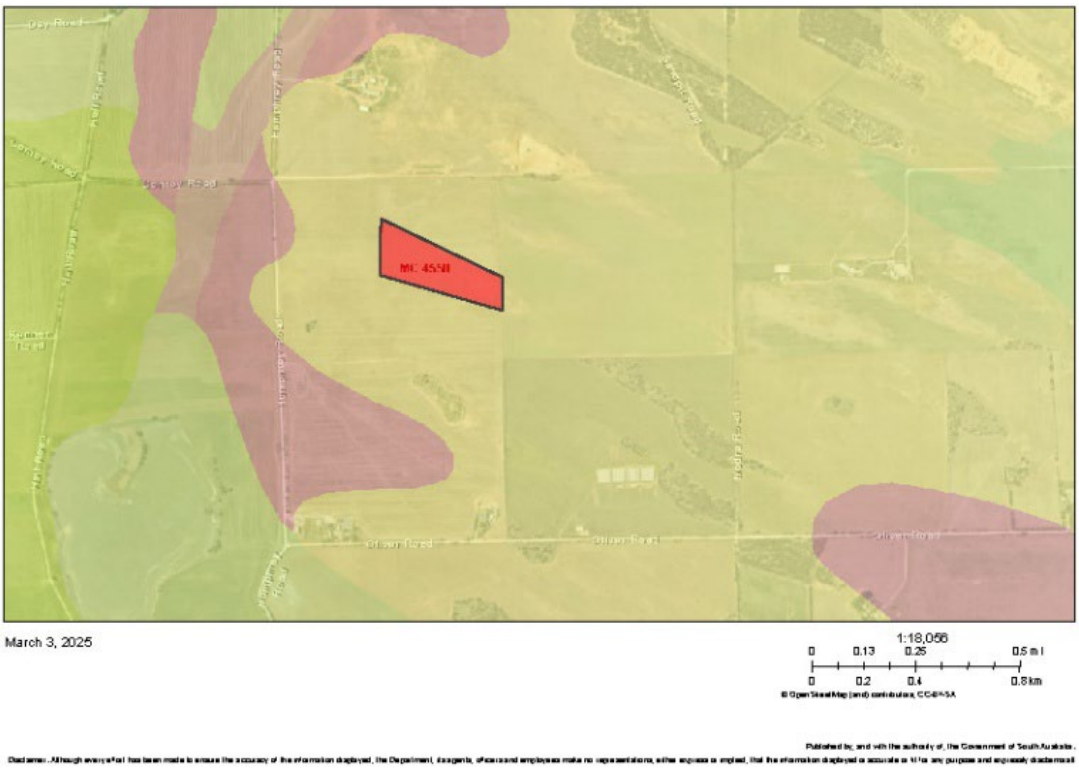
http://www.bom.gov.au/cgi-bin/climate/cgi_bin_scripts/windrose_selector.cgi?period=Annual&type=9&location=23034

2.3 Topsoil and subsoil

A review of the soil composition across the application area, based on data from the South Australian Resources Information Gateway (SARIG), indicates that the site predominantly consists of Sand over Clay soils (G Group), which account for approximately 70.1% of the area. These soils typically feature a sandy surface layer overlying a clay subsoil, which can influence water retention, permeability, and vegetation suitability. The remaining 29.9% of the site comprises Deep Sands (H Group), characterized by well-drained, loose, and often highly permeable sandy profiles (Refer to Figure 4).

The thin top layer stripped before sand extraction will contain vegetative debris that will be stored for rehabilitation purposes. Subsoil is predominantly reddish brown loose loamy sand which clears to yellowish red soft light sandy loam. Following 200cm depth, soil becomes red very hard coarsely structured sandy medium clay. There is no variation in soils over the application area and there are no soil characteristics that may be an issue for disturbance or rehabilitation.

Figure 4: Soil Group - Soil Type (SARIG)



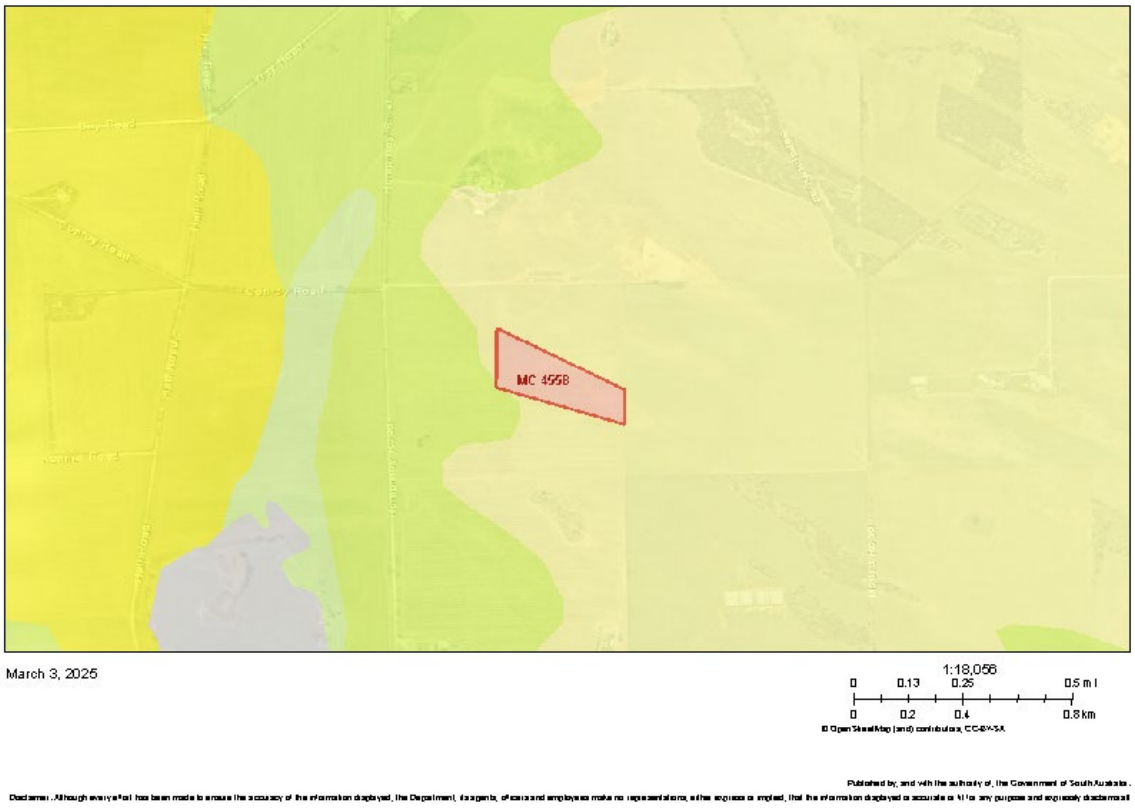
2.4 Geological Environment

The stratigraphic description, as recorded in the 100K Geology – map unit symbology on SARIG, identifies the site as comprising 'Undifferentiated Quaternary Aeolian Sediments' (Government of South Australia, 2025)

The regional geology is associated with the Reeves Plains Land System, characterised by Quaternary aeolian sediments deposited during the Pleistocene to Holocene periods. These sediments are predominantly wind-blown sands, with varying degrees of consolidation and some clay influence in localised areas. The geological composition primarily consists of unconsolidated fine to medium-grained quartz sands.

Quaternary sediments are widespread across the Adelaide Plains region, with extensive deposits forming part of the coastal and inland dune systems. These formations have undergone minimal lithification, resulting in predominantly loose and well-drained profiles.

Figure 5: 100K Geology (SARIG)



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.

Additionally, as there are no proposed mine pit batters, geotechnical risks are considered negligible.

2.6 Groundwater

The Natural Resource Management Region for the MC4558 is the Northern and Yorke. The application area is not within an area where the water resources are prescribed under the *Landscape South Australia Act 2019.*

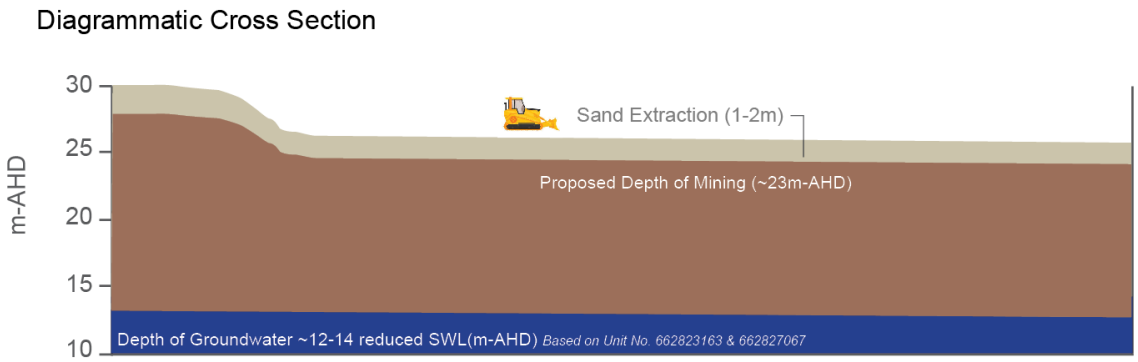
A review of SARIG and Water Connect shows there are no water wells within the MC. The closest water well is 1kms to the south on the corner of Humphrey Rd and Oliver Rd.

- 662823163 – SWL(m) 12.3, date: 9/10/2007 (Depth to water 12m)
- 662827067 – SWL(m) 11.6, date: 2/12/2013 (Depth to water 25m)
- 662823162 – SWL(m) 14.2, date 5/10/2007 (Depth to water 22m)

There is no expectation that ground water will be intersected in mining the sand as the quarrying process is a surface scrape to a maximum depth of 2 metres (Refer Figure 5)

Figure 6: Wells location map (SARIG)

Figure 7: Cross section Proposed Depth of Mining and Depth of Groundwater



2.7 Hydrology

No water courses or drainage channels exist on or near this site. There are no dams or water holding features on site. The MC is not within an area where the water resources are prescribed under the *Landscape South Australia Act 2019* or a water protection area under the *River Murray Act 2003.* The application area is not within the Murray Darling Basin. There is no current availability of water resources within the area. The proposed operation is situated in a broad acreage paddock that has been subject to an annual cropping program. Mining will have no detrimental impacts on the water quality as all surface water runoff is confined to the excavated areas and dissipates.

Based on the contour map provided in Figure 9, it appears that surface water flow within the mining claim follows the natural topography. The arrows on the map indicate the likely flow direction of surface water, suggesting that rainfall and runoff will move towards the lower elevations within the site and is expected to dissipate gradually in lower lying areas before infiltrating into the soil or evaporating. The proposed mining activities will not alter the natural flow of water, as all runoff will remain contained within the excavated zones, preventing off-site impacts. Additionally, the existing cropping history of the area indicates that the soil structure is capable of handling seasonal rainfall without significant erosion or sediment transport.

Figure 8: Nil Water Course Map

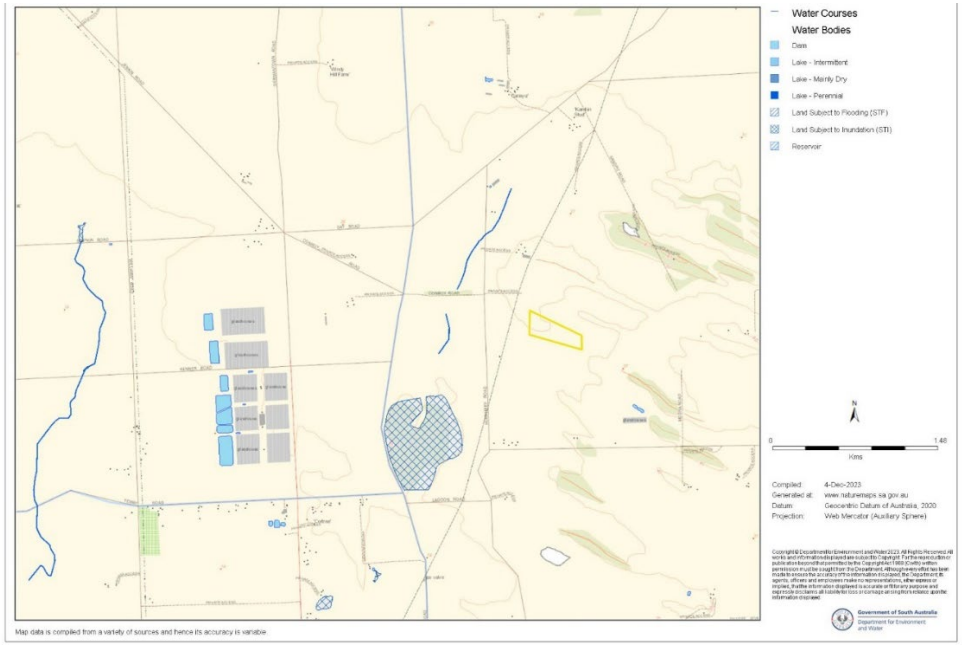
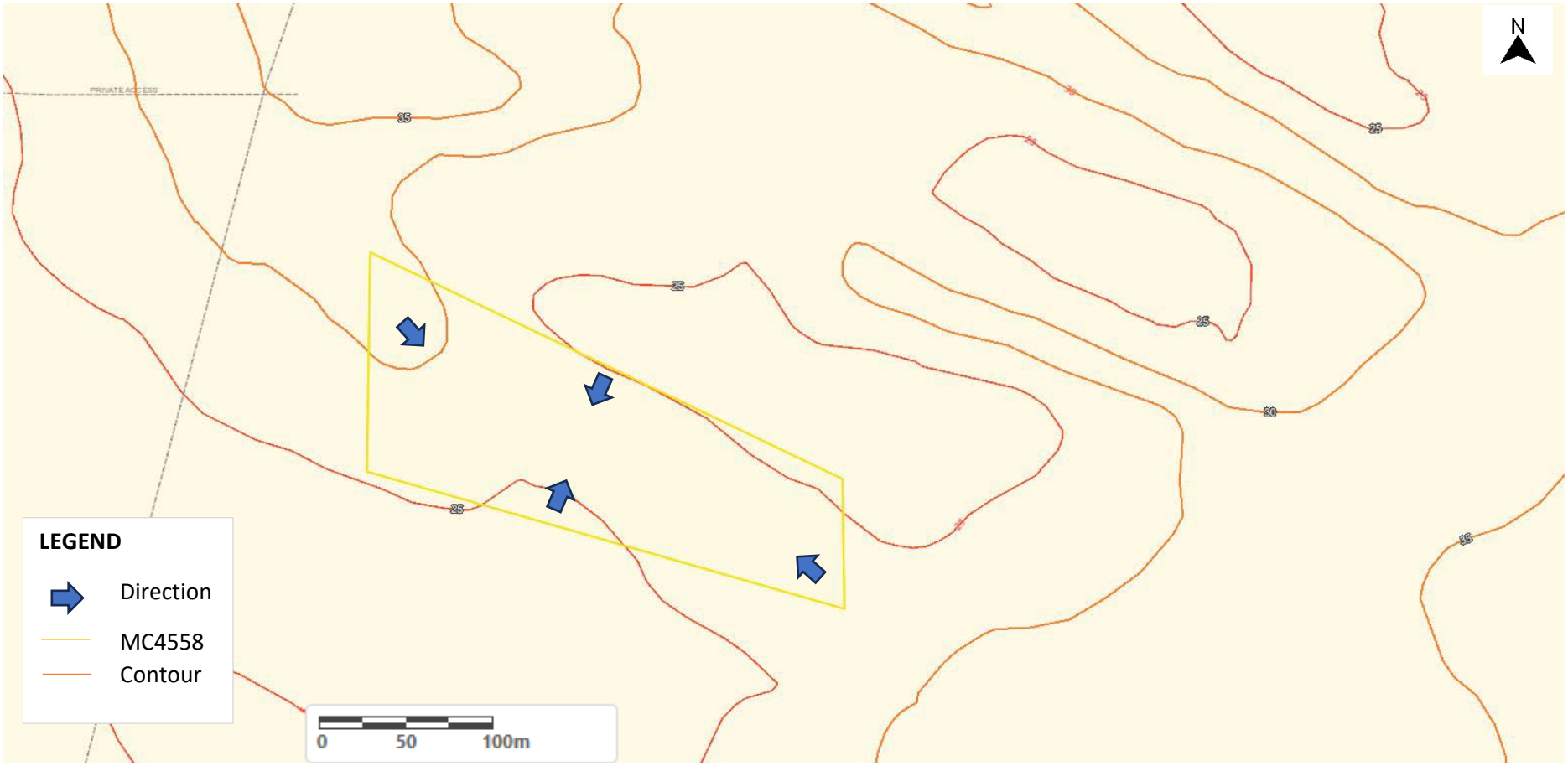


Figure 9: Surface Water Flow



2.8 Vegetation, weeds, and plant pathogens

No native vegetation will be cleared, as the site consists of a cultivated field. The historic land use of cultivation of the agriculture land has cleared any vegetation.

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), was undertaken on 24th February 2025. The search was conducted across the tenement and included a buffer of 1km outside of the tenement boundaries.

The EPBC Act Protected Matters Search identified two Threatened Ecological Communities (TEC), which are listed below:

- Iron-grass Natural Temperate Grassland of South Australia
- Peppermint Box (Eucalptus odorata) Grassy Woodland of South Australia (Refer Appendix 7).

There are no known plant pathogens such a broomrape or phytophthora on site. If weeds were to establish, they would likely be consistent with those commonly found in the surrounding paddocks of Reeves Plains, reflecting the typical weed species associated with long term agricultural land use in the region, such as annual ryegrass.

2.9 Fauna

The area is arable land and has been under agricultural cropping. It is likely that kangaroos frequent the area and on occasions there may be the presence of other animals such as feral rabbits or foxes.

The EPBC Act Protected Matters Search conducted on 24th February 2024 which included a 1km buffer found that no critical habitats exist within the site but identified 18 listed threatened species, which are listed below.

- Southern Whiteface
- Australasian Bittern
- Sharp-tailed Sandpiper
- Curlew Sandpiper
- Grey Falcon
- Latham's Snipe, Japanese Snipe
- Painted Honeyeater
- South-eastern Hooded Robin
- Blue-winged Parrot
- Eastern Curlew, Far Eastern Curlew
- Plains-wanderer
- Australian Painted Snipe
- Diamond Firetail
- Common Greenshank, Greenshank
- Grey-headed Flying-fox
- Greencomb Spider-orchid, Rigid Spider-orchid
- Large-fruit Fireweed, Large-fruit Groundsel
- Yellow Swainson-pea

Refer to Appendix 7 for a complete record of EPBC Act Protected Matters Search results.

2.10 Caves

There are no caves identified on site.

2.11 Land use

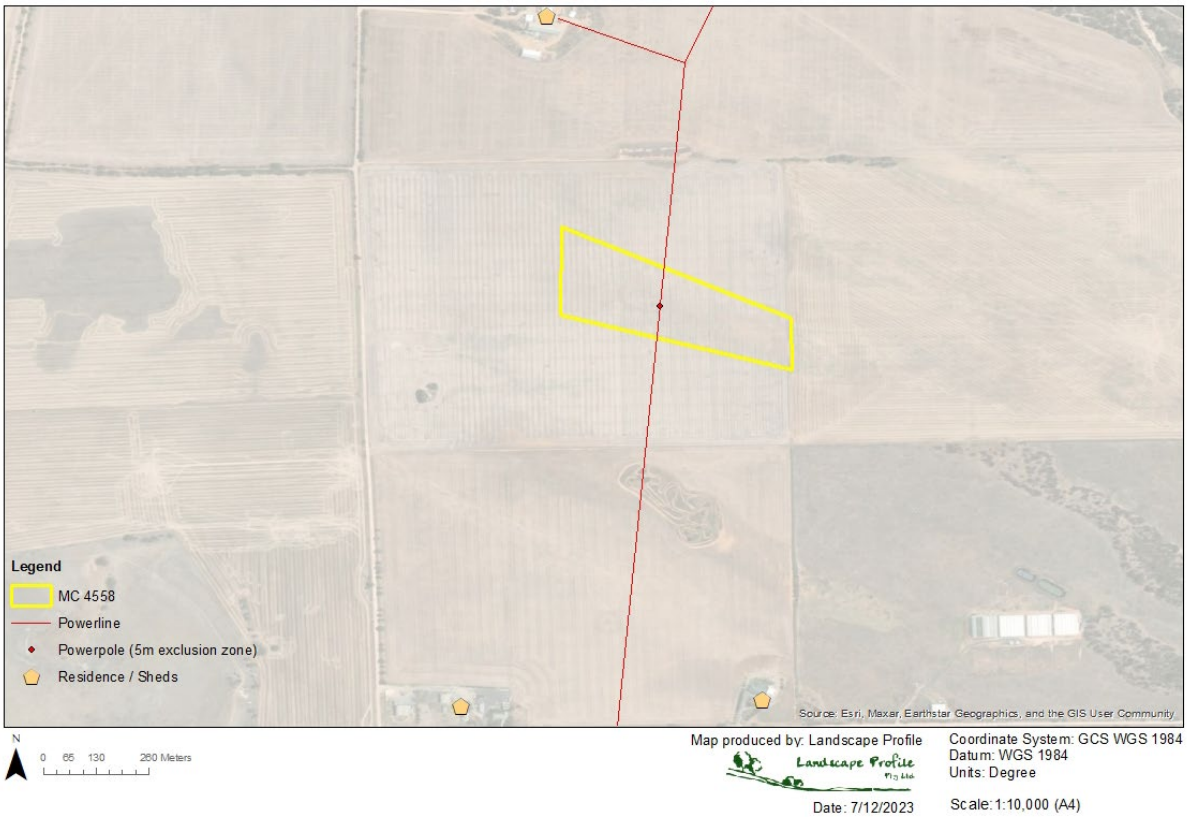
- The historical and current land use for the application area is agricultural (cropping). The proposed (potential) land use is mining.
- The zoning is Rural
- There are no known policies relevant to the application area.
- There are no known plans for the future land use changes by other parties.
- Other interests
    - Epic Energy SA Pty Ltd operate the Moomba-Adelaide Gas pipe PL1, which is to the west of the mineral claim. The pipleine license area overlaps the NW corner of the application area.
    - The application is not in the Woomera Prohibited Area or the Cultana Army Training Area
    - There are no overlapping tenements under the *Mining Act 1971* or *Petroleum and Geothermal Energy Act 2000.*

2.12 Proximity to infrastructure and housing

The operation is situated in a rural, predominately agricultural area, approximately 10km East of Two Wells. A residence and farm shedding are located approximately 600 metres from the proposed operations is owned by Humphrys Investment Holdings Pty Ltd (Nigel Humphrys had no issues with mining proposal). The structure 300m SW is the original family homestead for this property and has been a ruin for over 10years. A dirt racetrack 300m South is owned by Stephen and Alison Needham who had no issues with the mining proposed (Refer Appendix 6).

There is also a powerline that intersects MC 4558 with and associated power pole (stobie pole) that requires management. SA Power Networks has no objections to the removal of sand underneath the powerlines provided the following actions are undertaken: No sand removal within 5 metres of the pole (to ensure that the pole remains stable) and a 5 metre exclusion zone is set up around the pole using removable barriers. The technical regulator also provided direction in relation to clearance requirements and safe approach limits when working near overhead powerlines (Refer appendix 5).

Figure 10: Land Access Map



2.13 Exempt Land

Form 23A, 23B and 23C Waiver of Exemption CT 5963/974 provides for “The waiver of exemption is granted in respect to cultivated land on Section 648.”, Timothy John Wilson.

2.14 Amenity

The operation is situated in a rural horticulture, predominately agricultural area, approximately 10km east of Two Wells. The mineral claim is located within predominately flat to undulating cropping land interspersed with areas of remnant vegetation. There broader landscape supports a mix of dryland farming and several mining tenements situated to the north east and south.

The visual amenity of the site is largely influenced by the topography of the surrounding landscape. The landform provides partial screening of the operation, particularly to the west where the site is positioned behind a gradual rise. As mining progresses from east to west, exposure to external viewpoints will be minimised by the natural contours of the land.

Potential Visibility & Sensitive Receptors

- The primary public viewpoint is from Humphrey Road, where vehicles may have intermittent visibility of the operation from certain locations.
- Distant views may be possible from higher elevations, but the site is not in proximity to major townships or residential clusters.
- Given the existing agricultural character of the region, the visual impact is expected to be low, with the operation blending into the broader land-use patterns.

2.15 Air quality

The air quality in the local area is generally expected to be good, though there may be temporary increases in particulate matter, particularly during dry periods due to agricultural activities such as stock movement across dry fields. Unsealed roads in the area also contribute to airborne dust levels, and wind erosion over exposed paddocks may also lead to dust storms. Additionally, mining operations within the district can generate dust.

2.16 Noise

The noise level will be restricted to normal operational earthmoving equipment and truck movements, which is equivalent to farm equipment or road noise. Operations will be worked on a campaign basis throughout the year, based on market demands, and active only during daylight hours, from 7.00 am to 6.00pm Monday to Saturday (excluding public holidays).

According to the South Australian Environment Protection (Commercial and Industrial Noise) Policy 2023 (EPA Noise Policy), the period between 7:00 AM and 6:00 PM falls within the defined ‘day’ timeframe

2.17 Heritage (Aboriginal, European, Geological)

The SA Heritage Places Database search did not show any European heritage sites within or close to the MC.

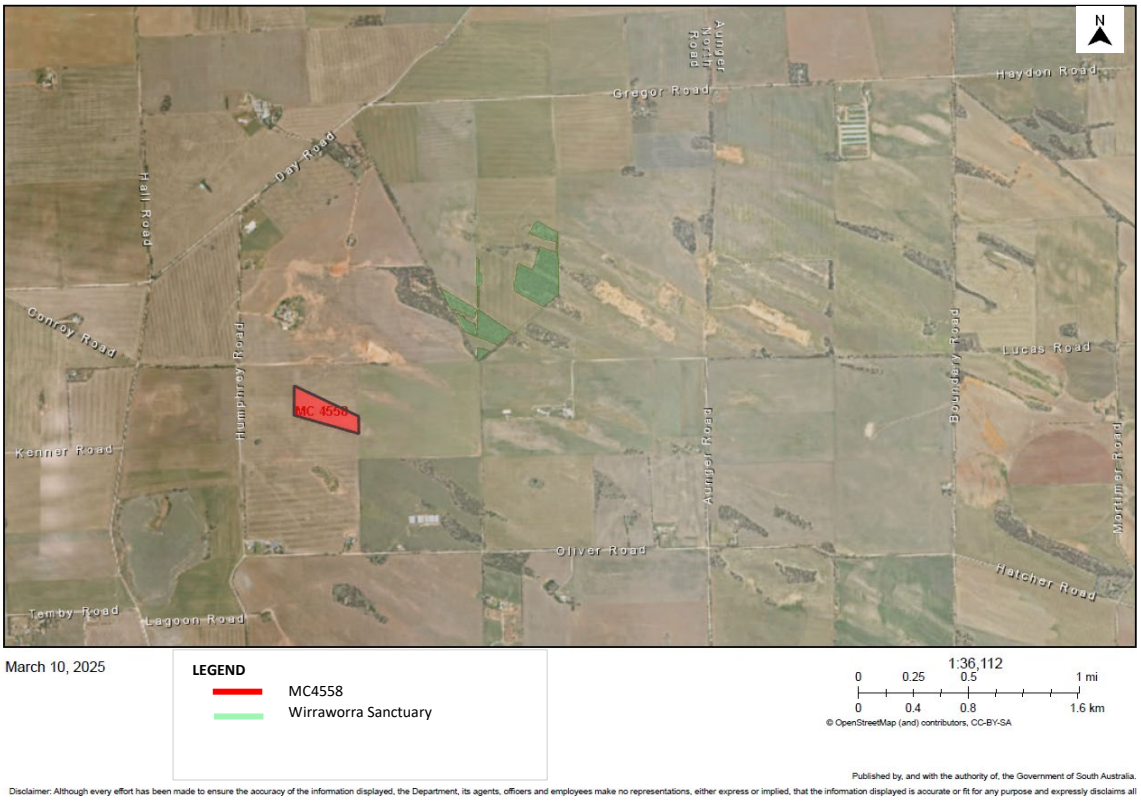
An Aboriginal heritage Database Search on CT5963/974 noted that there were no registered Aboriginal heritage sites within the MC area (Refer Appendix 2)

2.18 Proximity to Conservation areas

There are no conservation areas (national parks and reserves, private conservation areas, Commonwealth recognised conservation areas, heritage agreement areas and geological heritage sites) within close proximity to the application area that could be affected by this operation.

There is a private conservation area called Wirraworra Sanctuary approximately 1 km to the north east of the tenement. Due to the scale and type of the proposed operation and the distance to the sanctuary there will be no effect from this operation.

Figure 11: Proximity to Private Conservation Area



2.19 Pre-existing Site Contamination and Previous Disturbance

There is no known pre-existing contamination of the site or previous disturbance by previous mining operations. The site has been utilised for agricultural cropping and grazing purposes.

3. Description of the Proposed Mining Operations

3.1 General description and Maps/Plans of Operation

The proposed mining operations will begin at the eastern end of the sand hill and progress in an westerly direction through the cultivated paddock. The method of mining the sand dune is extraction of material in its simplest form utilising a front-end loader and screening the sand through the mobile dry-screening plant for various specification requirements. There is one stage of mining followed by rehabilitation. The proposed mining operations will operate on a campaign basis with an annual production rate estimated to be 20,000 tonnes.

3.2 Resource and Products

3.2.1 Resource

The current estimated resource is based on the following assumptions.

500m (length) x 170m (width) x 2m (depth) = 170,000 m3 x 1.8 T/m3 = 306 000 tonnes.

Therefore, the estimate of the resource to be mined is approximately 300,000tonnes.

The extractive mineral proposed to be extracted and sold is sand.

Note: The exclusion of material surrounding the power pole has negligible impact on the overall tonnage calculations. To clarify:

Tonnes calculated – 306 000 tonnes. There is a 5 metre buffer to the power pole. Area not to be mined is (pie r squared) 3.14 x 25 = 78.5 m2. Depth 2m x 78.5 = 157 m3. Tonnes = 157 x 1.8 t/m3 = 282 tonnes. We therefore said approximately 300 000 tonnes.

3.2.2 Production Rate and Products

The potential end use for all extractive minerals proposed to be sold (sand) is predominately in the construction industry.

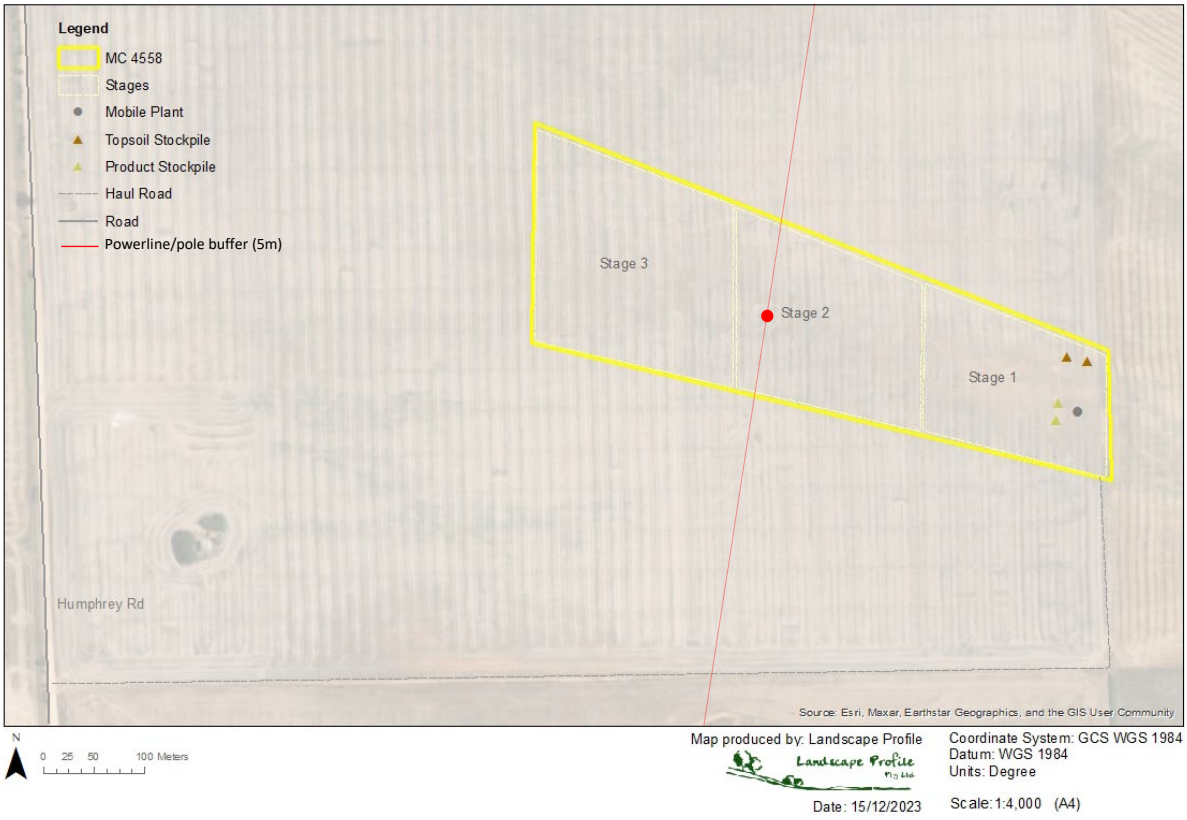
- Annual Production Rate
  - Product: ~20,000tonnes
  - Topsoil: ~700tonnes
  - Overburden: Nil
- Life of the quarry
  - 15 years
- Material Movement over life of quarry
  - Product:~300,000tonnes
  - Topsoil: ~10,000tonnes
- The annual production of mine gate product can vary depending on market demands. It is expected to be in the range of ~20,000 tonnes per annum for the life of the mine.
- Truck movements per day estimated to be 4-12

3.3 Quarrying Activities

3.3.1 Type or types of proposed quarry operation to be carried out

The proposed mining operations will begin at the eastern end of the sand hill and progress in an westerly direction through the cultivated paddock. The method of mining the sand dune is extraction of material in its simplest form utilising a front-end loader and screening the sand through the mobile dry-screening plant for various specification requirements. There are 3 stages of mining, over the area of 8.1HA, with a predicted mine life of 15 years. The proposed mining operations will operate on a campaign basis with an annual production rate estimated to be 20,000tonnes.
The operation will be open cut to a varying depth of approximately 1-2metres. The sand is uncovered, where required, by removing the topsoil, which is stored in linear mounds around the perimeter. As the operations advance westward, stockpiles will continue to be strategically positioned in subsequent stages, consistent with the approach used in Stage 1 for Stages 2 and 3.
The usable sand is then removed from the sand hill using a loader and taken to the nearby screening plant as shown on the Figure 8: Proposed Site Layout map. Stockpiles are created at the screening plant prior to material being loaded onto a truck for delivery. Product stocks on site may range from a hundred to a thousand tonnes, determined by market demands.
Under progressive rehabilitation the worked-out areas will be levelled, and the mining perimeters. re-contoured to a gradient of 1 in 3 to ensure a gently sloping edge. The topsoil that had been set aside will be respread to encourage the natural regeneration of vegetation.

Figure 12: Proposed Site Layout



3.3.2 Sequence of quarrying and progressive rehabilitation

Sequence of Quarrying

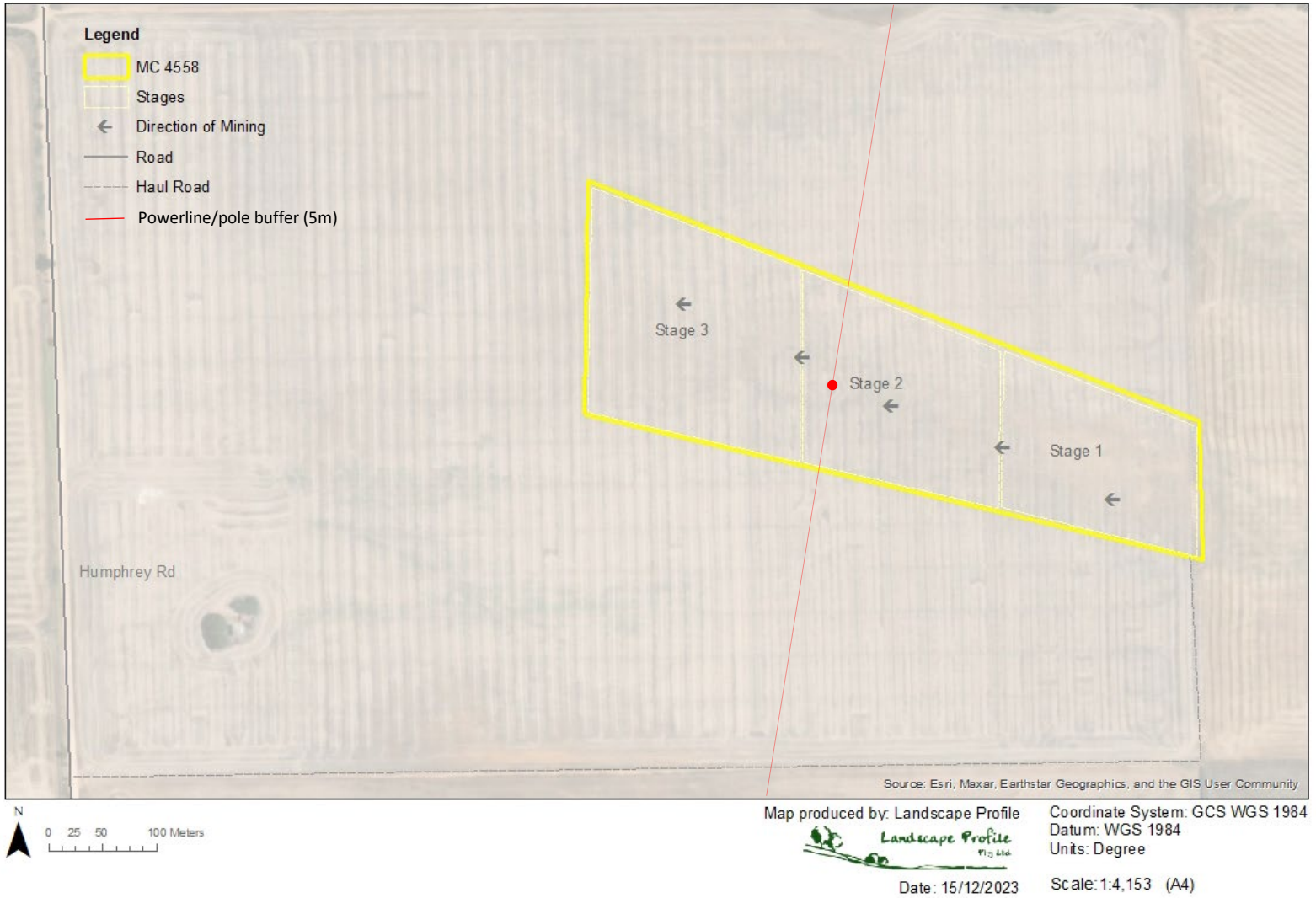
- The quarrying operations of a surface scrape will begin at the eastern end of the sand hill (Stage 1) and progress in a westerly direction through the cultivated paddock.
- Topsoil is stripped off and stored at the perimeters of the stages or the lease for later rehabilitation work. An estimated 700tonnes of topsoil will be stockpiled annually, based on a 7cm removal depth (5-10cm topsoil profile).
- The sand will be extracted, to a depth not exceeding ~1-2 metres, using a front end loader and taken to the nearby screening plant.
- Three star droppers five metres away from the power pole will be erected prior to mining.
- When working under the powerlines all staff/contractors will obey safe approach limits.
  - ✓ ***Obey safe approach limits**, refer to brochure "Working Safely Near Overhead Powerlines". Therefore, operating below the powerlines (distance greater than 3 metres from the powerlines) no spotter is required. If working closer than 3 metres a spotter will be required. Action – Power line is 7 - 8 m in height, a Caterpillar 950 loader is 3.5 m high (with the bucket no exceeding 4 metres at the highest point). Therefore, use only front end loaders and trucks (no lifting capacity) beneath power lines.*
- Stockpiles will be created at the screening plant prior to material being loaded onto a truck for delivery.

Sequence of Rehabilitation

- The progressive rehabilitation will follow the sequence of mining in the same stages as per the plan when an area is available according to practical, economic and seasonal criteria. This will be undertaken when a winnable depth is attained within when a stage is mined out.
- This staged approach will ensure that no more than 3ha is disturbed/open at any one time.
- The worked-out areas will be levelled and the perimeters recontoured to a gradient of 1 in 3 and topsoil reintroduced. The final contours will be a shallow depression below the surrounding topography with gently sloping perimeters blending with the adjacent land.

Refer Figure 9: Sequence of Quarrying and Progressive Rehabilitation Map for illustrative representation.

Figure 13: Sequence of Quarrying and Progressive Rehabilitation Map



3.3.3 Stockpiles

3.3.3.1 Topsoil and subsoil stockpiles

The topsoil will be removed and stored in conical to linear mounds around the perimeter of the excavation area, not more than 2m in height for future use in progressive rehabilitation. There will be no overburden associated with the quarrying operations. The conceptual location of the topsoil stockpiles area shown in Figure 8: Proposed Site Layout

3.3.3.2 Product stockpiles

The natural sand will be extracted and transported by front-end loader to the mobile dry-screening plant. Stockpiles of saleable product are kept duly located for each stage. Product is stored in conical stockpiles which vary from 2-4m in height and range from a few hundred to one thousand tonnes, dependent on orders.

3.3.4 Use of explosives

Not applicable. No explosive or blasting is required.

3.3.5 Modes and hours of operation

Operations will be worked on a campaign basis throughout the year, based on market demands, and active only during daylight hours, from 7.00 am to 6.00pm Monday to Saturday (excluding public holidays).

- Minimum hours the site is worked per year: 10 to 1,000 hours
- Minimum time for each campaign: 1-8 hrs p/day
- Maximum and minimum time between campaigns: Based on orders
- Beginning and end of campaigns based on stockpile depletion and orders.
- Initiating and ceasing campaigns based on stockpile depletion and orders.
- Campaigns will be based on size of orders received
- Days of mining operations during campaign: 1 to 14
- Tonnage produced for each campaign: 100 to 1000 tonnes
- Tonnage produced for each year on average 20,000 tonnes.

3.4 Crushing, processing and product transport

3.4.1 Fixed plant

There is no fixed plant

3.4.2 Hours of operation

The proposed hours of mining operations during a campaign will be during daylight hours from 7.00am to 6.00pm Monday to Saturday (excluding public holidays).

3.4.3 Processing wastes

There is no processing of wastes for this operation.

3.4.4 Industrial and domestic wastes

There is little, if any domestic waste generated during mining operations and it will be removed from site at the end of each day. There is no evidence or potential for putrescible waste on site.

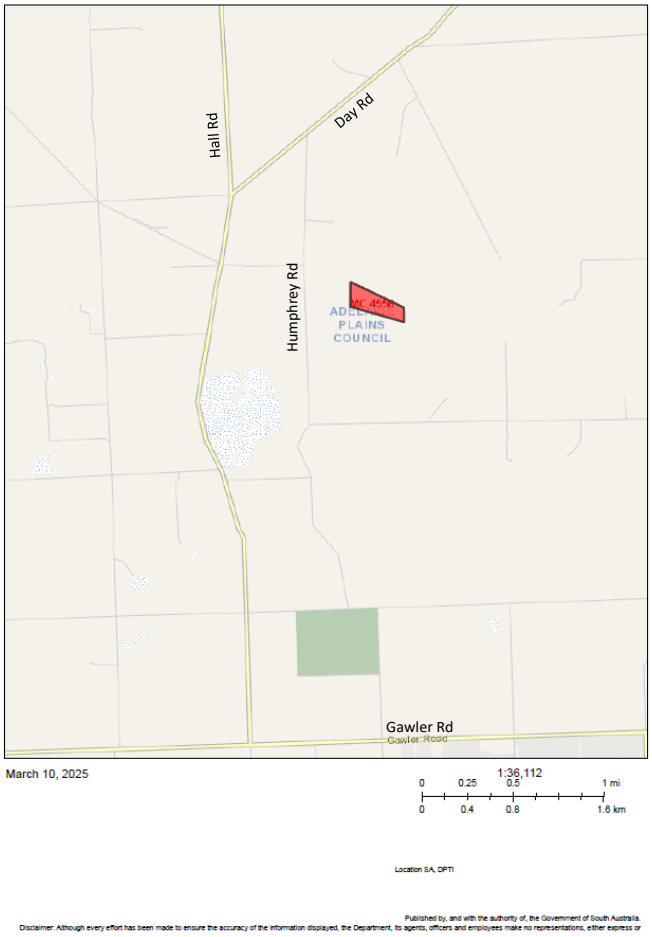
Scheduled servicing of equipment in line with manufacturers guidelines will occur offsite. Any industrial waste such as tyres will be appropriately disposed or recycled offsite.

3.5 Supporting surface infrastructure

3.5.1 Access and Roads

Access to the site is via Humphrey Road, where the mine site will be accessed via the internal paddock tracks (Refer Figure 13). Truck movements are based on sales, the estimated number of vehicle movement per day is 4-12 trucks per day. This may vary with contracts or orders received.

Depending on the customer delivery location the typical truck (10tonne per load or 30tonne per load) will utilise roads such as Day Rd to Redbanks Road, Day Rd/Simpkin Rd to Mallala Rd, Hall Rd to Gawler Rd.



3.5.2 Accommodation and offices

There is no accommodation or offices to be used on site.

3.5.3 Public services and utilities used by the operation

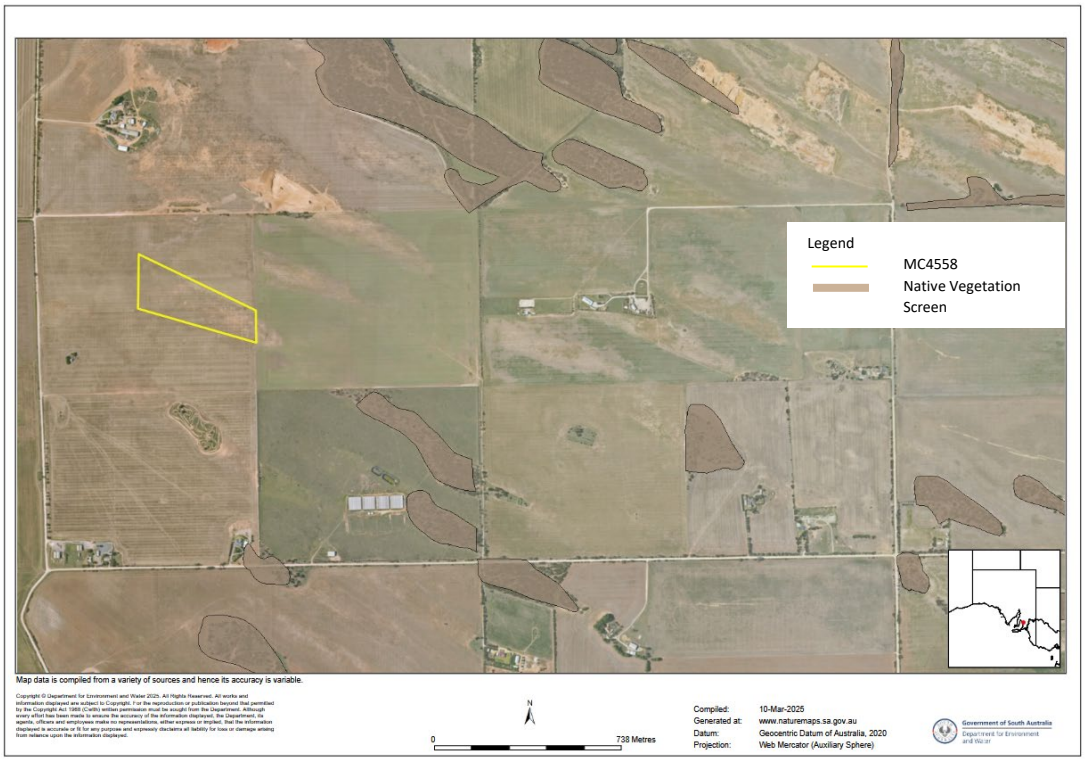
There are no public services or utilities supplied to the proposed site, such as power, water or telecommunications. There are no new connections required or any adverse effects due to the proposed mining operations.

There is a powerline that intersects MC4558 with and associated power pole (stobie pole) that requires management. SA Power Networks has no objections to the removal of sand underneath the powerlines provided the following actions are undertaken: No sand removal within 5 metres of the pole (to ensure that the pole remains stable) and a 5 metre exclusion zone is set up around the pole using removable barriers. The technical regulator also provided direction in relation to clearance requirements and safe approach limits when working near overhead powerlines (Refer appendix 5).

3.5.4 Visual screening

The operation is situated in a rural, predominately agricultural area, approximately 40km north of Adelaide. The existing native vegetation on surrounding properties to the southeast and north east assists in screening the site. Visual amenity from other directions is protected by the topography of the surrounding landscape and the distance to any receptors. Vehicles may be able to see the mining operation at certain locations along Humphrey Road but for the most part the operation will be behind the western part of the hill (mining will progress from east to west).

Figure 14: Screening



3.5.5 Fuel and chemical storage

No fuels or chemicals stored on site. All machinery and equipment are serviced from the depot off site. Mobile plant will be diesel powered and will be filled using jerry cans or with a light mobile refuelling tank. Spill kits and fire extinguishers will be kept alongside fuel storage and refuelling equipment.

3.5.6 Site security

The site is unfenced along Humphrey Road. Fences and gates to the south, north and east are maintained in good order to ensure public safety.

3.5.7 Erosion, Sediment and Silt Control

The soils and substrate are highly permeable and, as such, drain feely. The Soil Characterisation Site data sheet relating to CL015 noted for drainage “Rapidly drained”. Mining will have no detrimental impacts on the water quality as all surface water runoff is confined to the excavated areas and dissipates (Refer Figure 1). There are no sediment management structures or requirements to manage or dispose of silt.

3.6 Vegetation clearance

No native vegetation will be cleared.

3.7 Description of Quarry Site at Completion

Progressive rehabilitation will occur over the life of the quarry operations. Rehabilitation for this site will be simple and require basic techniques. Areas will be progressively returned to near original and surrounding landforms. The variation will be the final contour levels will have a reduction of between 1-2metres. The perimeters of the extraction areas will be contoured to a gradient of 1 in 3 to marry in with the surrounding landscape. On completion of final rehabilitation, the mined land will be returned to cropping and grazing. There will be no change to pre-mine uses.

Any quarrying infrastructure (i.e. plant machinery and equipment) will be removed from the site at closure. There will be no waste disposal areas. There is no surface water infrastructure (i.e. ponds and diversions). The final landform map & cross section provides a conceptual description of the quarry site as it will be at completion after all rehabilitation and closure activities have been completed. The end of life for this particular site will be in approximately the year 2040.

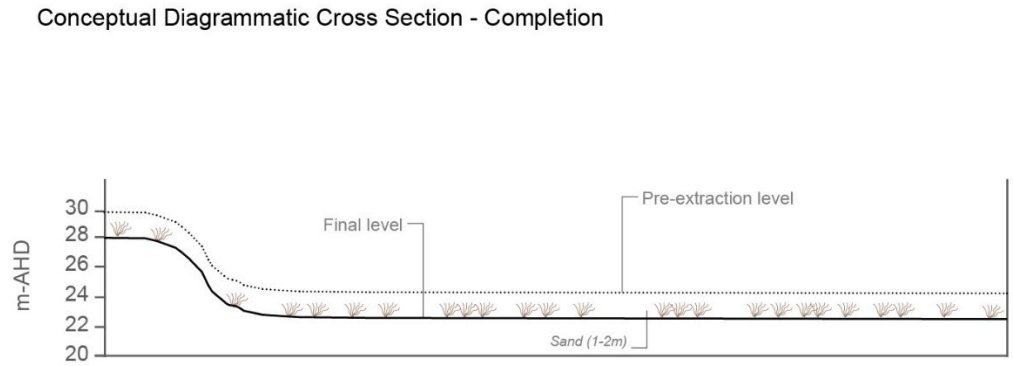


Figure 15: Diagrammatic Quarry site completion cross section

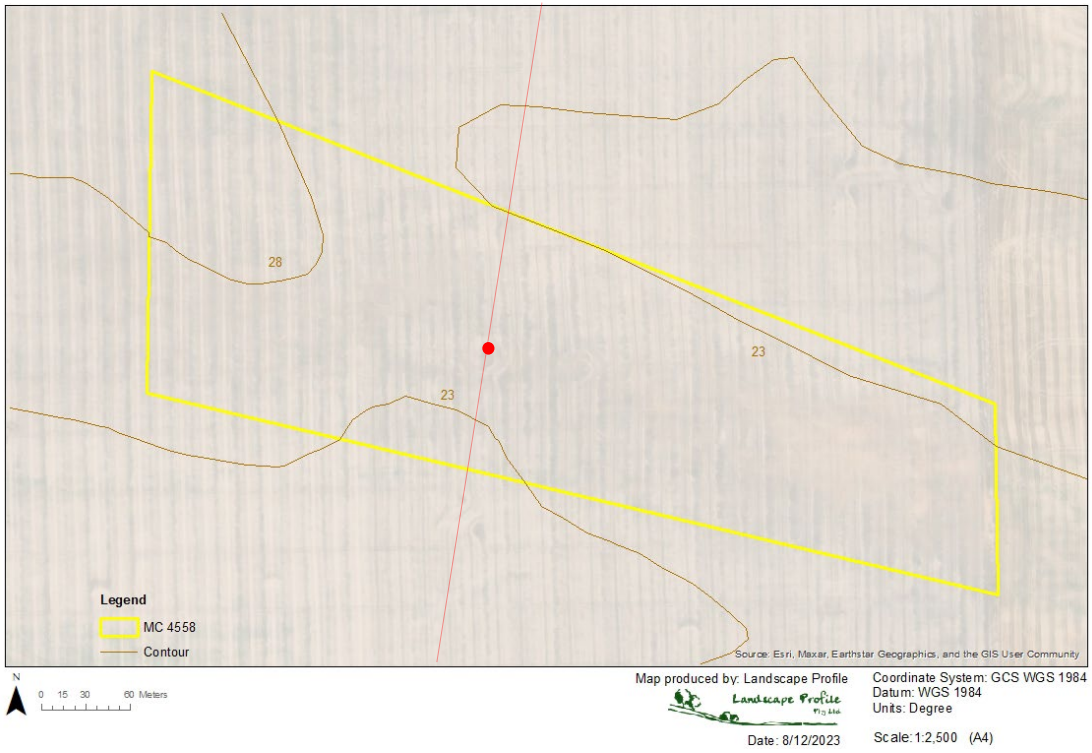


Figure 16: Final Landform Map

3.8 Site Water Management

There is no water used in production. It is not anticipated that water will be required during operation for dust suppression. However, if water is required a contractor will be engaged to bring in a mobile water cart as needed.

4 Description of Potential Benefits

The new sand mining operations will ensure the continued viability of Clay and Minerals. Employment opportunities is roles such as project management, customer service, machine operation, truck drivers and site supervisors would be required for excavation, material handling and transport. The site would require multiple machine operators and truck drivers to meet the annual production rate of approximately ~20,000tonnes. It is anticipated that the majority of the labour workforce would reside within the local region. The office roles are based at the Golden Grove head office site. Induction training is provided to employees. The sales of sand to local landscape and construction businesses/contractors provides materials for use in construction projects and supports the building industry. Additionally, royalties and taxes from the mine operations would contribute to government revenue.

All land affected by mining operations must be rehabilitated to its original land use or improved condition upon completion of activities. The continuation of farming and grazing in the region plays a vital role in supporting local communities and the economy. These activities not only meet essential needs within Australia but also contribute to the nation's export markets, reinforcing agricultural sustainability and economic resilience.

5. Consultation

As part of the preparation of the Mining Proposal the following key stakeholders have been consulted with:

5.1 Neighbouring Landowners

All six adjacent landowners were either written to, visited or were spoken to in September 2023 explaining that a mineral lease is being sought. Three of the six neighbours' comments were received in writing with no issues and no responses required. A complete record of adjacent landowner consultation is contained in Appendix 6.

5.2 SA Power Networks

An email was received on the 10 August 2023 from Frank Greco, Customer Solutions Manager noting that SA Power Networks has no objections to the removal of sand underneath their powerlines noting the two actions in the corresponding email below from a previous arrangement at Waikerie.

Subject: RE: Removing Sand From Underneath A Power Line Near Waikerie

Hi Richard,

Thanks for your patience whilst I was seeking answers to your query.

SA Power Networks has no objections to the removal of sand underneath our powerlines provided the following actions are undertaken:

1. No sand removal within 5m of the pole as stated in your email below. This is to ensure that are poles remain stable;
2. A 5m exclusion zone is set up around the poles using removable barriers.

For working clearances I refer you to the Office of the Technical Regulator who are based placed to comment on such matters.

Happy to have a chat if required.

Regards,

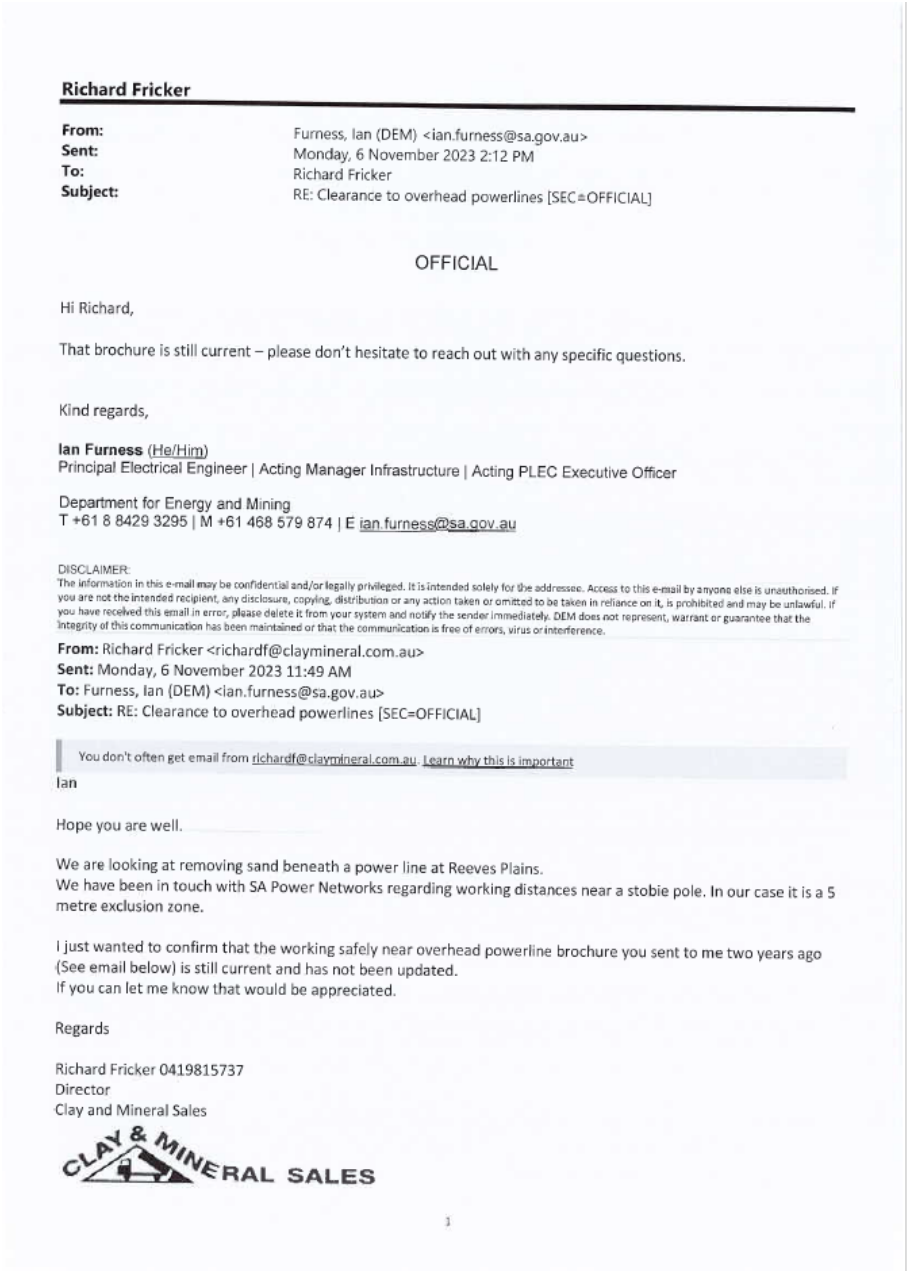
Ntuthuko Tshuma
CUSTOMER SOLUTIONS MANAGER – HILLS & MURRAY

Mobile: 0417 866 299
ntuthuko.tshuma@sapowernetworks.com.au
---
1 Anzac Highway Keswick SA 5035
sapowernetworks.com.au

SA Power Networks **Empowering South Australia**

5.3 Office of the Technical Regulator

An email was received from Ian Furness, Principle Electrical Engineer who noted the requirement to follow the requirements in the Working Safely Near Overhead Powerlines brochure (Refer Appendix 5) and that excavation within 3m of a stobie pole will need written permission from the network operator (SA Power Networks) are still current.



Richard Fricker

From: Furness, Ian (DEM) <ian.furness@sa.gov.au>
Sent: Monday, 6 November 2023 2:12 PM
To: Richard Fricker
Subject: RE: Clearance to overhead powerlines [SEC=OFFICIAL]

OFFICIAL

Hi Richard,

That brochure is still current – please don't hesitate to reach out with any specific questions.

Kind regards,

Ian Furness (He/Him)
Principal Electrical Engineer | Acting Manager Infrastructure | Acting PLEC Executive Officer

Department for Energy and Mining
T +61 8 8429 3295 | M +61 468 579 874 | E ian.furness@sa.gov.au

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From: Richard Fricker <richardf@claymineral.com.au>
Sent: Monday, 6 November 2023 11:49 AM
To: Furness, Ian (DEM) <ian.furness@sa.gov.au>
Subject: RE: Clearance to overhead powerlines [SEC=OFFICIAL]

You don't often get email from richardf@claymineral.com.au. Learn why this is important

Ian

Hope you are well.

We are looking at removing sand beneath a power line at Reeves Plains.
We have been in touch with SA Power Networks regarding working distances near a stobie pole. In our case it is a 5 metre exclusion zone.

I just wanted to confirm that the working safely near overhead powerline brochure you sent to me two years ago (See email below) is still current and has not been updated.
If you can let me know that would be appreciated.

Regards

Richard Fricker 0419815737
Director
Clay and Mineral Sales

CLAY & MINERAL SALES

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5.4 Epic Energy

An email was received from Simon Gillett, Field Maintenance Officer. The email chain acknowledges the presence of the gas pipeline on section 648 and the need for trucks to cross the pipeline when the lease is operational. It is common practice for Epic to ensure that there is enough coverage over the pipeline when a road crosses the pipeline. Simon indicated that Epic will confirm the depth of the pipeline.

Upon approval, a full design of the crossing point will be developed, taking into account the necessary safety and engineering requirements. As part of this process, the depth of the pipeline will be determined in conjunction with Epic to ensure compliance with safety regulations and prevent any risk of damage. Refer to email chain below.

Richard Fricker

From: Simon Gillett <Simon.Gillett@epic.com.au>
Sent: Thursday, 2 November 2023 7:58 AM
To: Hieu Le
Cc: Kym Baldock; Robert Ormerod; Richard Fricker
Subject: Future works on the Wasleys Loop
Attachments: DOC191023.pdf; Wilson Title April 2023.pdf

Hi Hieu just thought id send this request through to you to give you a heads up of some significant works in the future. A BYDA will need to be lodge closer to when works will commence

We will need to pot hole first to get a depth of the Loop line so you can do your calculations

Regards

Simon Gillett
Field Maintenance Officer - Civil
Epic Energy South Australia Pty Ltd
Level 6, 70 Franklin St Adelaide SA 5000 M +61 417 273 874 E Simon.Gillett@epic.com.au

epicenergy.com.au
-----Original Message-----
From: Richard Fricker <richardf@claymineral.com.au>
Sent: Tuesday, October 31, 2023 4:51 PM
To: Simon Gillett <Simon.Gillett@epic.com.au>
Cc: Domenic Trimboli <domenic@claymineral.com.au>
Subject:

CAUTION: This email originated from outside the organisation. Do not act on instructions, click links or open attachments unless you recognise the sender and know the content is safe.

Simon

Thanks for your time on the phone today.

We have begun the process of getting a mining lease to remove sand on section 648 attached.
The process will take approximately 1-2 years. Therefore only farming will take place in the next 12 months.

Our preferred access is one that follows the southern boundary of section 648. As per the attached plan.

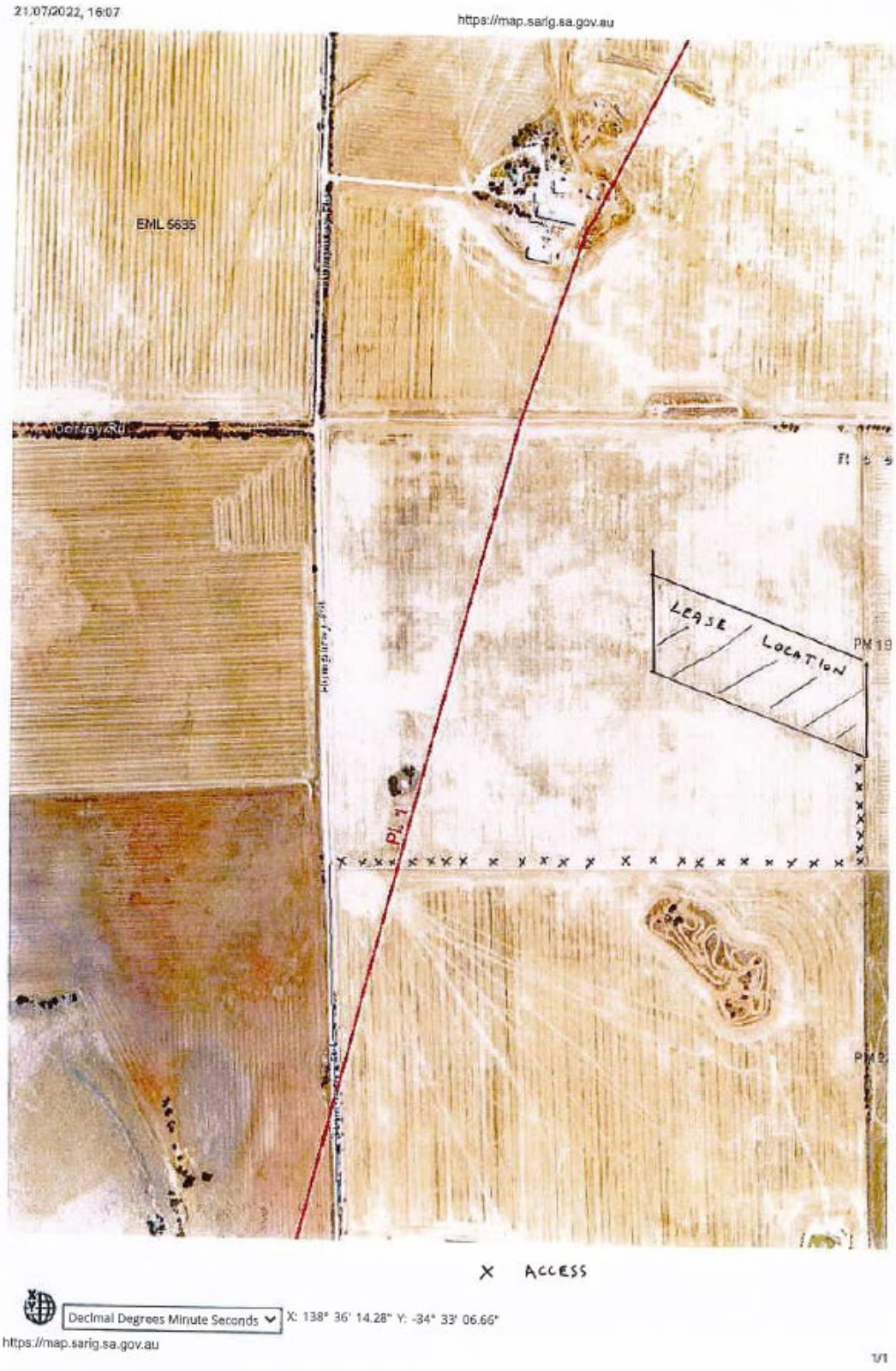
Sand removal will be intermittent. At this stage we are considering building an access close to the fence line minimising the impact to the farmer.
On another site we needed to raise the ground level above the pipe so that plenty of cover was given.

If you can provide feed back on the proposal above that would be appreciated.

Please note that the property owner has a water pipeline near the southern boundary. Before any work is done in this area I can confirm details.

Regards

Richard Fricker 0419815737
Director
Clay and Mineral Sales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https://map.sarig.sa.gov.au
EML 5635
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PM2
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X: 138° 36' 14.28" Y: -34° 33' 06.66"
https://map.sarig.sa.gov.au
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6. Management of Environmental Impacts

The table below summarises the environmental elements that have or have not been identified as potentially impacted on by the proposed mining activities.

Element and Mining Phase	Applicable	Potential Impact Event	Risk Rating
Public Safety (C&O)	Y	Injuries and/or death resulting from unauthorised access to mine site	M6
Public Safety (PMC)	Y		L3
Heritage (C&O)	Y	Disturbance of Aboriginal or non-Aboriginal heritage sites, objects or remains during mining operations	L4
Heritage (PMC)	N	-	-
Native Vegetation (C&O)	N	-	-
Weeds and Pests (C&O)	Y	Introduction or increase in weeds or pests	L4
Weeds and Pests (PM)	Y		
Native Fauna (C&O)	Y	Fauna Injury or death	L4
Native Fauna (PM)	N	-	-
Air Quality (C&O)	Y	Public nuisance impacts from dust	L2
Air Quality (PM)	N	-	-
Noise (C&O)	Y	Public nuisance impacts from noise	L2
Noise (PM)	N	-	-
Surface Water (C&O)	Y	Possibility of interfering with surface drainage patterns	L3
Surface Water (PM)	N	-	-
Visual Amenity (C&O)	Y	Visual impact on the landscape	L2
Visual Amenity (PM)	N	-	-
Waste (C&O)	Y	Soil contamination caused by a refuelling spill. Improper disposal of general waste	L2
Waste (PM)	N	-	-
Soil (C&O)	Y	Topsoil quality is reduced	L3
Soil (PM)	N	-	-
Third Party Property (C&O)	Y	Unauthorised damage to third party private property and infrastructure. Potential of fires	L4
Third Party Property (PM)	N	-	-
Post Mining Land Use (PM)	Y	Inadequate final rehabilitation	L3
Ground Water (C&O)	Y	Groundwater interception	L2
Ground Water (PM)	N	-	-
Traffic (C&O)	Y	Traffic from the site impacting on safety	L4
Traffic (PM)	N	-	-

Note: CO – Construction/operation, PC – Post Completion

The assessment of the environmental impacts has been based on the risk assessment matrix (i.e. Potential Likelihood and Potential Consequence)

Potential Likelihood						
Potential Consequence		**Rare**	**Unlikely**	**Possible**	**Likely**	**Almost Certain**
		1	2	3	4	5
Insignificant	1	L1	L2	L3	L4	M5
Minor	2	L2	L4	M6	M8	H10
Moderate	3	L3	M6	M9	H12	H15
Major	4	L4	M8	H12	H16	E20
Catastrophic	5	M5	H10	H15	E20	**E25**

Public Safety

The Work Health and Safety Act 2012; Mining Act 1971 applies to this outcome.

6.1– Public Safety					
6.1.1 Potential Impact Event	6.1.2 Source	6.1.3 Pathway	6.1.4 Environment receptor	6.1.5 Description of uncertainty	6.1.6 Confirmation of potential impact
Injury to the public during Construction and operation	Quarrying Operations	Unauthorised access to the site	Members of the public	There is a moderate level of certainty that unauthorised access can be deterred; the site is not clearly visible, however there is a boundary on Humphrey Rd unfenced which could increase the risk of trespassing. All employees receive training to identify and manage trespassers, but the effectiveness of these measures may vary.	Yes, a source, pathway and receptor exist.
Injury to the public during Post mine completion	Quarrying Operations	Unauthorised access to the site	Members of the public		Yes, a source, pathway and receptor exist.

	6.1.7 Control Measure	6.1.8 Description of uncertainty	6.1.9 Proposed environmental outcomes	6.1.10 Measurement criteria
Injuries and/or death resulting from unauthorised access to mine site	-All contractors and employees will be inducted, including public safety component. -Drivers/ machinery operators have current and appropriate licenses. -The open boundary on Humphrey Rd will be monitored regularly to assess any security risk and alternative control measures such as temporary fence and signage will be implemented if necessary. -The existing fences kept in good working order. -Mining operations will be progressively rehabilitated as per sequence of mining and rehabilitation. -Maintain register (logbook) for recording all incidents and details of subsequent investigations.	Low degree of uncertainly. Source information and assumptions are clear with little degree of uncertainty. The mining operations are set within a rural/agricultural location with limited public observation.	No public injuries and/or deaths resulting from unauthorised entry to the Land that could have been reasonably prevented.	All public injuries and/or deaths resulting from unauthorised access to the mine site are recorded in mine log book and investigated by suitable qualified third party within one calendar month (or other times as agreed with the relevant authority) and the results of the investigation show that the incident could not have been reasonably prevented by the Tenement Holder.
	-Mining operations will be progressively rehabilitated as per Mining Plan.	Low degree of uncertainly. Source information and assumptions are clear with little degree of uncertainty.	The risks to the health and safety of the public so far as it may be affected by mining operations, are as low as reasonably practicable.	Following final rehabilitation work an appropriate person will inspect the site and verify in a report (to be stored in the Mine Logbook) that final rehabilitation has been undertaken in accordance with the Mining Plan.

Heritage

Applicable Legislation and Standards *South Australian Aboriginal Heritage Act 1988, Heritage Places Act 1993 and Mining Act, 1971.*

6.2 – Heritage					
6.2.1 Potential Impact Events	6.2.2 Source	6.2.3 Pathway	6.2.4 Environment receptor	6.2.5 Description of uncertainty	6.2.6 Confirmation of potential impact
Disturbance of Aboriginal or non-Aboriginal heritage sites, objects or remains during mining operations (Operation of the mine)	Discovery within the lease of Aboriginal and non-Aboriginal heritage sites, objects or remains.	Disturbance (mining)	Aboriginal/ Non-Aboriginal individuals/ group/ community	Whether significant heritage artefacts exist. (The site has been previously disturbed with cropping operations). The site has no entries for Aboriginal sites at this location (Aboriginal Heritage Sites, Govt SA).	Yes, a source, pathway and receptor exist.
No perceived impact (Post mine completion)	No source	No pathway	No receptor	NA	No, a source, pathway and receptor does not exist.

	6.2.7 Control Measure	6.2.8 Description of uncertainty	6.2.9 Proposed environmental outcomes	6.2.10 Measurement criteria
Disturbance of Aboriginal or non-Aboriginal heritage sites, objects or remains during mining operations	-All contractors and employees will be inducted, including Aboriginal and non-Aboriginal Heritage component. - All contractors and employees operating with the tenement will understand their obligations in regards to the *Aboriginal Heritage Act 1988* with regards to the discovery of Aboriginal sites, objects or remains and the *Heritage Places Act 1993* with regards to the discovery of places or objects of significance.	Low degree of uncertainty	No damage, disturbance or interference to Aboriginal or non-Aboriginal heritage sites, objects or remains as a result of mining operations unless it is authorised under the relevant legislation.	Production records and Mine Logbook will demonstrate that upon discovery within the tenement of any possible Aboriginal or Non-Aboriginal: - sites of significance - objects - remains that work ceased until the relevant authorities were notified and work recommenced only once authorisation was received.

Native Vegetation

Applicable Legislation and Standards *South Australian Native Vegetation Act 1991 and Commonwealth Environment Protection and Biodiversity Conservation Act 1999.*

6.3 – Native Vegetation					
6.3.1 Potential Impact Events	6.3.2 Source	6.3.3 Pathway	6.3.4 Environment receptor	6.3.5 Description of uncertainty	6.3.6 Confirmation of potential impact
Loss of native vegetation (operation of the mine)	Mining activities	No pathway	No receptor	NA	No, a source, pathway and receptor does not exist.
Loss of native vegetation (post mine completion)	No source	No pathway	No receptor	NA	No, a source, pathway and receptor does not exist.

Weeds and Pests

Applicable Legislation and Standards *Landscape South Australia Act, 2019*.

6.4 – Weeds and pests					
6.4.1 Potential Impact Events	6.4.2 Source	6.4.3 Pathway	6.4.4 Environment receptor	6.4.5 Description of uncertainty	6.4.6 Confirmation of potential impact
Introduction or increase in weeds or pests (mine operations & post mine completion)	Machinery Wind, Fauna movements	Vehicle & equipment Wind	Surrounding properties Surrounding properties	There is a risk that weeds could be introduced to the mine site through machinery, including cars, trucks, equipment or even fauna particularly if they have travelled through areas with existing weed infestations.	Yes, a source, pathway and receptor exist. An outcome is required.

	6.4.7 Control Measure	6.4.8 Description of uncertainty	6.4.9 Proposed environmental outcomes	6.4.10 Measurement criteria
Introduction or increase in weeds or pests	-Weed spraying and pest animal control will be conducted by a suitably experienced person as required.	Low degree of uncertainty	No introduction of new species of weeds, or pests (including feral animals), nor increase in abundance of existing weed or pest species on the Land.	Mine Logbook records of annual inspections (in Spring) by the Tenement Holder will demonstrate no introduction of new weeds or pests and no increased abundance of existing weeds and/or pests.

Native Fauna

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

6.5 – Fauna					
6.5.1 Potential Impact Events	6.5.2 Source	6.5.3 Pathway	6.5.4 Environment receptor	6.5.5 Description of uncertainty	6.5.6 Confirmation of potential impact
Fauna Injury or death (Operation of the Mine)	Mining activities/machinery movement	Unpredictable wildlife movements	Fauna	Assessment based on government database (Refer section 2.9); however wildlife movements on roads/tracks can be unpredictable.	Yes, a source, pathway and receptor exist. An outcome is required.
Fauna Injury or death (post mine completion)	No perceived impact	No pathway	No receptor	NA	No, a source, pathway and receptor do not exist. An outcome is not required.

	6.5.7 Control Measure	6.5.8 Description of uncertainty	6.5.9 Proposed environmental outcomes	6.5.10 Measurement criteria
Fauna Injury or death	- The tenement holder, staff and/or contractors are made aware of approved areas for mining (limit/stages of mining) with regard to the protection of native fauna. - Ensure drivers are aware of potential fauna presence and take avoidance action if sighted. - Ensure progressive rehabilitation landform contains no possible entrapment for fauna.	Low degree of uncertainty	The tenement holder must ensure there are no native fauna injuries or deaths due to mining operations that could have been reasonably prevented.	Mine Logbook records will demonstrate no native fauna injuries or deaths due to mining operations could have been reasonably prevented.

Air quality

The *Environment Protection Act, 1993 and* Environment Protection (Air Quality) Policy 2016.applies to this outcome.

6.6– Air quality					
6.6.1 Potential Impact Events	6.6.2 Source	6.6.3 Pathway	6.6.4 Environment receptor	6.6.5 Description of uncertainty	6.6.6 Confirmation of potential impact
Public nuisance impacts from dust (Operation of the mine)	Disturbance/Mining operations and accompanying truck movements	Wind, vehicle movement	Local resident(s)	Minimising the disturbance footprint, progressive rehab and reducing site activities on high risk days will have a high certainty to reduce the nuisance impacts from dust.	Yes, a source pathway and receptor exist. An outcome is required.
Public nuisance impacts from dust (post mine completion)	No perceived impact	No pathway	No receptor	NA	No, a source, pathway and receptor do not exist. An outcome is not required.

	6.6.7 Control Measure	6.6.8 Description of uncertainty	6.6.9 Proposed environmental outcomes	6.6.10 Measurement criteria
Public nuisance impacts from dust	- Keep surface vegetative cover intact and limit open areas by following the 3 stages of mining. - Reduce site activities and disturbances on high risk days. Avoid working on extreme wind days. - Topsoil stockpiles naturally regenerate to prevent dust impacts - Rehabilitation will occur progressively in accordance with the Mining Plan.	Low degree of uncertainty	No public health and/or nuisance impacts from dust generated by mining operations.	Records from Mine Logbook will demonstrate that any dust complaints received were acknowledged within 48 hours and resolved with the complainant within 7 days (or other time as agreed with Mining Regulator). If complaints are not resolved to the satisfaction of Mining Regulation, air quality monitoring is to occur at locations, and using methods, as agreed with the Mining Regulator, to demonstrate: - PM10* ground level concentrations leaving the tenement when measured over a 24-hour period (midnight to midnight) comply with the Environment Protection (Air Quality) Policy 2016, and/or - dust deposition leaving the tenement does not exceed 4g/m2/month. - Particulate matter with an aerodynamic diameter of ten micrometres of less

Noise

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

6.7 – Noise					
6.7.1 Potential Impact Events	6.7.2 Source	6.7.3 Pathway	6.7.4 Environment receptor	6.7.5 Description of uncertainty	6.7.6 Confirmation of potential impact
Public nuisance impacts from noise (operation of the mine)	Noise of operation	Movement of vehicles and equipment	Local resident(s)	Background noise levels in the region vary throughout the year based on seasonal activities (ie. cropping activities). Wind speed &direction can all amplify or dampen noise propagation.	Yes, a source, pathway and receptor exist. An outcome is required.
Closure	No perceived impact	No pathway	No receptor	NA	No, a source, pathway and receptor do not exist. An outcome is not required.

	6.7.7 Control Measure	6.7.8 Description of uncertainty	6.7.9 Proposed environmental outcomes	6.7.10 Measurement criteria
Public nuisance impacts from noise	- Mining operations will only be carried out between the hours of 7am and 6pm Monday to Saturday - Maintain machinery to manufacturers guidelines for optimal performance. - Mine machinery noise is kept within approved EPA noise levels.	Low degree of uncertainty	No public nuisance impacts from noise as a result of mining operations.	- Records from Mine Logbook will demonstrate that any noise complaints received were resolved with the complainant within 48 hours (or other time as agreed with Mining Regulator). - If complaints are not resolved the Tenement Holder will conduct noise monitoring at the sensitive receptor to demonstrate noise levels comply with the Environment Protection (Noise) Policy 2007.

Surface Water

6.8 – Surface Water					
6.8.1 Potential Impact Events	6.8.2 Source	6.8.3 Pathway	6.8.4 Environment receptor	6.8.5 Description of uncertainty	6.8.6 Confirmation of potential impact
Possibility of interfering with surface drainage patterns during mining operations. (Operation of the mine)	Quarrying operations	Disturbance of ground (excavation & rehabilitation)	Surface water	If the proposed mining interferes and to what extent with surface water/WDEs.	Yes, a source, pathway and receptor exist.
No perceived impact (Mine completion)	No source	No pathway	No receptor	NA	No, a source, pathway and receptor does not exist.

	6.8.7 Control Measure	6.8.8 Description of uncertainty	6.8.9 Proposed environmental outcomes	6.8.10 Measurement criteria
Possibility of interfering with surface drainage patterns during mining operations.	- Rehabilitation will occur progressively in accordance with the Mining Plan. -Any material amount of surface water impacted by mining operations will be captured and retained within the tenement.	Medium degree of uncertainty.	No adverse impact to surface water quality and water dependent ecosystems on or off the land as a result of contamination and sedimentation caused by mining operations.	Photographic records in the Mine Logbook, following rainfall events resulting in surface water flow will demonstrate that the mining operations and progressive rehabilitation has not adversely altered the existing landform and thus the natural flow patterns.

Visual Amenity

6.9 – Visual Amenity					
6.9.1 Potential Impact Events	6.9.2 Source	6.9.3 Pathway	6.9.4 Environment receptor	6.9.5 Description of uncertainty	6.9.6 Confirmation of potential impact
Visual impact on the landscape during mining operations. (Operation of the mine)	Quarrying operations	Excavation	Residence	The closest residence and sheds are ~400m away from the mining operation.	Yes, a source, pathway and receptor exist.
No perceived visual impact at mine closure	No source	No Pathway	No receptors	NA	No, a source, pathway and receptor does not exist.

	6.9.7 Control Measure	6.9.8 Description of uncertainty	6.9.9 Proposed environmental outcomes	6.9.10 Measurement criteria
Visual impact on the landscape	-Mining operations will be progressively rehabilitated as per the Mining Plan. -The maximum area of un-rehabilitated land will be less than 3 hectares at any one time.	Low degree of uncertainty.	The form, contrasting aspects and reflective aspects of mining operations are visually softened to blend in with the surrounding landscape.	Annual site inspection records in the Mine Logbook demonstrate that: • the maximum area of un-rehabilitated land at any one time is 3 hectares; and • progressive and final rehabilitation has been completed in accordance with the approved Mining Plan.

Waste

6.10 – Waste					
6.10.1 Potential Impact Events	6.10.2 Source	6.10.3 Pathway	6.10.4 Environment receptor	6.10.5 Description of uncertainty	6.10.6 Confirmation of potential impact
Soil contamination caused by a refuelling spill. (Operation of the mine)	Fuel spill	Operational activities - Refuelling	Landform (i.e., soil)	Refuelling is a common practice associated with quarrying activities.	Yes, a source, pathway and receptor exist.
Improper disposal of general waste (Operation of the mine)	Employees littering	General rubbish left on site	General environment	This has not been an issue on other Clay and Mineral Sites so it is expected that this will not be an issue.	Yes, a source, pathway and receptor exist.
No perceived waste impact events at mine closure	No source	No Pathway	No receptors	NA	No, a source, pathway and receptor does not exist.

	6.10.7 Control Measure	6.10.8 Description of uncertainty	6.10.9 Proposed environmental outcomes	6.10.10 Measurement criteria
Soil contamination caused by a refuelling spill. Improper disposal of general waste	-Implement good handling procedures -Enact spill management protocols -Any spill of fuel shall be cleaned up immediately -Dispose of contaminated and/or absorbent material and any impacted surface soils in accordance with relevant legislation (i.e., EPA) -Any general waste will be taken off site at the end of each day.	Low level of uncertainty as the fuel is appropriately handled	All waste is disposed of in accordance with relevant legislation.	Site records (Logbook) confirm that the spills have been managed in accordance with the relevant legislative requirements.

Soil

6.11 – Soil					
6.11.1 Potential Impact Events	6.11.2 Source	6.11.3 Pathway	6.11.4 Environment receptor	6.11.5 Description of uncertainty	6.11.6 Confirmation of potential impact
Topsoil quality is reduced (Operation of the mine)	Quarrying operations	Weather conditions (wind, rain)	Soil	Shallow topsoil and stubble (cropping debris) only	Yes, a source, pathway and receptor exist.
No perceived soil impact events at mine closure	No source	No Pathway	No receptors	NA	No, a source, pathway and receptor does not exist.

	6.11.7 Control Measure	6.11.8 Description of uncertainty	6.11.9 Proposed environmental outcomes	6.11.10 Measurement criteria
Topsoil quality is reduced	- Soil stockpiled to a maximum of 2m in height to preserve seed stock and micro-organism function. - Soil stockpiles vegetated to prevent erosion and retain soil quality through natural regeneration. - Storage of topsoil stockpiles to be located along the flanks to facilitate progressive rehabilitation.	Low level of uncertainty as there	The tenement operator must, in construction and post mine completion ensure that the existing (pre-mining) soil quality and quantity is maintained.	Annual inspection records in the Mine Logbook of all soil stockpiles will demonstrate that all stockpiles are less than 2 metres high and are maintained at the height when established. Annual inspection records of soil stockpiles will show stockpiles: - are less than 2 metres high and are maintained at the height when established - have established vegetative cover; - have no signs of erosion (formation of rills, gullies or other evidence of soil loss).

Third Party Property

Applicable Legislation and Standards *Fire and Emergency Services Act 2005, Planning, Development and Infrastructure Act 2016 and South Australian Mining Act, 1971*

6.12 -Third Party Property					
6.12.1 Potential Impact Events	6.12.2 Source	6.12.3 Pathway	6.12.4 Environment receptor	6.12.5 Description of uncertainty	6.12.6 Confirmation of potential impact
Unauthorised damage to third party private property and infrastructure (operational)	Mining operations	Disturbance	Stobie Pole/Powerlines	It is expected that the mining within the proposed areas will prevent LTPP impacts.	Yes, a source, pathway and receptor exist.
Potential of fires	Mining operations	Hot work/sparks	Nearby vegetation or infrastructure	The likelihood of ignition depends on weather conditions, fire risk levels and control measures in place.	Yes, a source, pathway and receptor exist.

	6.12.7 Control Measure	6.12.8 Description of uncertainty	6.12.9 Proposed environmental outcomes	6.12.10 Measurement criteria
Unauthorised damage to third party private property and infrastructure Potential of fires	-All contractors and employees will be inducted re: working safely near overhead powerlines. -Three star droppers five metres away from the power poles (on the side of the power pole that mining will occur) will ensure that no mining will occur within 5 *metres.* -*Obey safe* approach limits outlined in the *"Working Safely Near Overhead Powerlines"* brochure. • Operating below the powerlines (distance greater than 3 metres from the powerlines) no spotter is required. If working closer than 3 metres a spotter will be required. • Use only front-end loaders and trucks with no lifting capacity beneath powerlines *(Power line is 7 - 8 m in height, a Caterpillar 950 loader is 3.5 m high (with the bucket no exceeding 4 metres at the highest point).* -Inline with CFS Standards a shovel or rake and a portable water spray will be at hand on total fire days.	Low degree of uncertainty. Source information and assumptions are clear with little degree of uncertainty.	The tenement holder must, during operation, ensure there are no unauthorised damage to third-party private property and infrastructure caused by mining operations that could have been reasonably prevented.	Annual inspections of third-party private property and infrastructure recorded in the mine logbook confirms that there has been no unauthorised damage caused by mining operations.

Post Mining Land Use

6.13 – Post Mining Land Use					
6.13.1 Potential Impact Events	6.13.2 Source	6.13.3 Pathway	6.13.4 Environment receptor	6.13.5 Description of uncertainty	6.13.6 Confirmation of potential impact
Final rehabilitation does not ensue in accordance with mining plan at mine closure	Impeded rehabilitation	Preceding quarrying operations	Land (Landowners)	Whether final rehabilitation in ~2040 will meet obligations.	Yes, a source, pathway and receptor exist.

	6.13.7 Control Measure	6.13.8 Description of uncertainty	6.13.9 Proposed environmental outcomes	6.13.10 Measurement criteria
Inadequate final rehabilitation	-Mining operations will be progressively rehabilitated as per Mining Plan. -No infrastructure or waste left on site. -The land will be returned to cropping and grazing post mining operations.	Low degree of uncertainty. Source information and assumptions are clear with little degree of uncertainty. Successful closure/final rehabilitation to the satisfaction of the Chief Inspector of Mines has previously been attained for other sites operated by this lease holder.	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.	Following final rehabilitation work an appropriate person will inspect the site and verify in a report (to be stored in the Mine Logbook) that final rehabilitation has been undertaken in accordance with the Mining Plan to achieve the approved post mining land use.

Groundwater

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

6.14 – Post Mining Land Use					
6.14.1 Potential Impact Events	6.14.2 Source	6.14.3 Pathway	6.14.4 Environment receptor	6.14.5 Description of uncertainty	6.14.6 Confirmation of potential impact
Groundwater is intercepted	Mining activities	Excavation zone into groundwater	3rd party groundwater users	If the excavation remains 2m above the groundwater the impacts are not possible. Water data obtained from government databases.	Yes, a source, pathway and receptor exist. An outcome is required.

	6.14.7 Control Measure	6.14.8 Description of uncertainty	6.14.9 Proposed environmental outcomes	6.14.10 Measurement criteria
Groundwater is interception	- No mining to be undertaken within 2 metres of the estimated highest seasonal groundwater level.	Low degree of uncertainty. Source information and assumptions are clear with little degree of uncertainty.	No adverse impact to groundwater caused by mining operations.	Annual inspection or survey (as agreed with Mining Regulator) of the pit floor recorded in the Mine Logbook will demonstrate that mining operations do not exceed the mine depth levels stated in the Mining Plan.

Traffic

6.15 – Post Mining Land Use					
6.15.1 Potential Impact Events	6.15.2 Source	6.15.3 Pathway	6.15.4 Environment receptor	6.15.5 Description of uncertainty	6.15.6 Confirmation of potential impact
Traffic from the site impacting on safety	Heavy vehicle movements	Roads	Members of the public and operational staff	The number of heavy vehicle movements may fluctuate depending on market conditions. Increased traffic near the site could raise safety risks.	Yes, a source, pathway and receptor exist. An outcome is required.

	6.15.7 Control Measure	6.15.8 Description of uncertainty	6.15.9 Proposed environmental outcomes	6.15.10 Measurement criteria
Traffic from the site impacting on safety	- All operators will be made aware of the dangers of mine machinery and mine vehicles entering public roads during the site induction. - Vehicles and machinery will be parked inside the tenement, not along road verges.	Low degree of uncertainty. Source information and assumptions are clear with little degree of uncertainty.	No traffic accidents involving members of the public and mine related traffic that could have been reasonably prevented by the Tenement Holder.	All traffic accidents involving the public at mine access points are recorded in Mine Logbook. All accidents will be investigated by a suitably qualified independent third party within one calendar month (or other time as agreed with Mining Regulator) and the results of the investigation show that the accident could not have been reasonably prevented by the Tenement Holder.

Reference/Resource

- Mining and resources continue to support economic growth, Canavan Media Release Sept 2019.
- SARIG https://map.sarig.sa.gov.au/
- Nature Maps https://data.environment.sa.gov.au/NatureMaps/Pages/default.aspx

Appendix

Appendix 1 – Registration of Mineral Claim

Appendix 2 – Register of Aboriginal Sites and Objects Letter

Appendix 3 – Mining Stages

Appendix 4 – Land Title

Appendix 5 – Working Safely Near Overhead Powerlines

Appendix 6 – Adjacent Landowner Consultation

Appendix 7 - EPBC Act Protected Matters Report

Appendix 1 – Registration of Mineral Claim

Government of South Australia

Mining Act 1971
(see Regulation 14)

Certificate of Registration of Mineral Claim

Mineral Claim (MC)	**4558**
Registered Holder	Clay & Mineral Sales Pty Ltd
Contact Address	Lot 1 Hancock Road GOLDEN GROVE SA 5125
File Reference	2023/000085
Date of Pegging	13/04/2023
Start Date	14/06/2023
Expiry Date	13/06/2024
Area in Hectares	8.10
Location	Reeves Plains area - approximately 40km north of Adelaide

Parcel Type	Parcel No.	Plan Type	Plan No.	Hundred
Section	648	H - Hundred Plan	140800	Port Gawler

Special Locations
Mining Production Tenement Regulation area
RDA: Barossa

Pastoral Property
none

Signed: Caroline Andrews Dated: 14 / 06 / 2023

Caroline Andrews
Acting Mining Registrar

Appendix 3 – Mining Stages

Appendix 4 – Land Title

LAND SERVICES SA

Product	Title Details
Date/Time	17/04/2023 03:59PM
Customer Reference	Wilson
Order ID	20230417009790

Certificate of Title

Title Reference	CT 5963/974
Status	CURRENT
Easement	YES
Owner Number	09666212
Address for Notices	PO BOX 61 TWO WELLS 5501
Area	59.9ha (APPROXIMATE)

Estate Type

FEE SIMPLE

Registered Proprietor

TIMOTHY JOHN WILSON
OF TEMBY ROAD TWO WELLS SA 5501

Description of Land

SECTION 648
HUNDRED OF PORT GAWLER
IN THE AREA NAMED REEVES PLAINS

Last Sale Details

Dealing Reference	TRANSFER (T) 10443996
Dealing Date	30/03/2006
Sale Price	$305,000
Sale Type	TRANSFER FOR FULL MONETARY CONSIDERATION

Constraints

Encumbrances

Dealing Type	Dealing Number	Beneficiary
MORTGAGE	10443997	WESTPAC BANKING CORPORATION

Stoppers

NIL

Valuation Numbers

Valuation Number	Status	Property Location Address
3104598055	CURRENT	Lot 648 HUMPHREY ROAD, REEVES PLAINS, SA 5502

Notations

Dealings Affecting Title

NIL

Notations on Plan

NIL

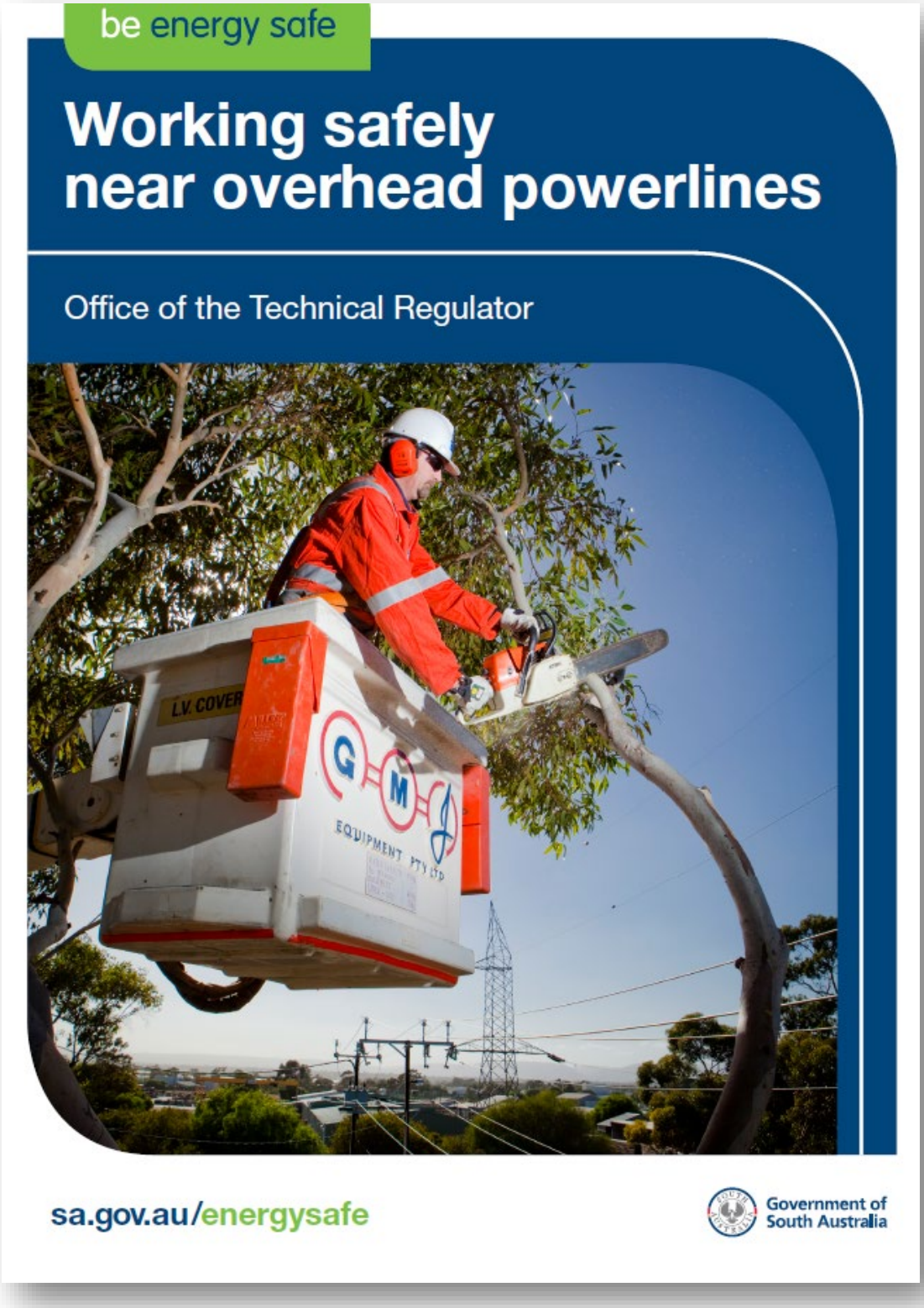
Registrar-General's Notes

NIL

Administrative Interests

NIL

Appendix 5 – Working Safely Near Overhead Powerlines



APPENDIX 6

ADJACENT LANDOWNER CONSULTATION

The responses to the adjacent landowners' comments are as follows; Points (1) to (6) below. Three of the six neighbours' comments were received in writing (attached pages), while one other neighbour discussed the proposed lease by telephone.

(1) Owner 1 & 2. Humphrys Investment Holdings Pty Ltd - no issues– no response required.
(2) Owner 3. Neil Gregor and Susan Reid – Concern was that we do not mine up to the property boundary and undermine the fence. Response – Mining operations will stay atleast 3 metres away from the fence on the eastern end of the tenement.
(3) Owner 4 Top Grade – No response received.
(4) Owner 5 Stephen and Alison Needham – Spoke to Stephen on 20/09/23. He had no issues. No response required.
(5) Owner 6 & 7 Newbold Studs Properties – No issues. No response required.
(6) Owner 8. Andrew and Alison Goss. No response received.

Comments on Mining at Reeves Plains

(to be completed and returned by 6 October 2023)

Name : NIGEL HUMPHRYS

Address at Reeves Plains: 356 HUMPHRYS ROAD, REEVES PLAINS

Do you reside at the property? Yes/No. YES

Home address if other than above: —

Contact Email :

Comments on mining at Reeves Plains:
Sand will be removed using a loader. Do you have any concerns with removal of sand from Reeves Plains?

NO ISSUES

Proposed Operating Hours 7.00am to 6.00pm Monday to Saturday. Saturday is only worked when necessary due to market demand.

NO ISSUES

Person to contact re above: NIGEL

Best form of contact (phone or email) PHONE 0428 274 027

Dated: 13/ 9 /2023

Please return in supplied envelope to reach us by **6 October, 2023**:
Clay & Mineral Sales Pty. Ltd.
PO Box 155, Surrey Downs SA 5126

Or email to: richardf@claymineral.com.au

Comments on Mining at Reeves Plains
(to be completed and returned by 6 October 2023)

Name : N. GREGOR & S. REID
Address at Reeves Plains: 206 GREGOR ROAD, REEVES PLAINS
Do you reside at the property? Yes/No. YES
Home address if other than above: _____

Contact Email : pamana@aussiebroadband.com.au

Comments on mining at Reeves Plains:
Sand will be removed using a loader. Do you have any concerns with removal of sand from Reeves Plains?

DO NOT MINE UP TO THE PROPERTY BOUNDARY AND UNDER MINE THE FENCE.

Proposed Operating Hours 7.00am to 6.00pm Monday to Saturday. Saturday is only worked when necessary due to market demand.

Person to contact re above: NEIL GREGOR
Best form of contact (phone or email) 0427274022

Dated: 3 / 10 /2023

Please return in supplied envelope to reach us by **6 October, 2023**:
Clay & Mineral Sales Pty. Ltd.
PO Box 155, Surrey Downs SA 5126

Or email to: richardf@claymineral.com.au

Comments on Mining at Reeves Plains

(to be completed and returned by 6 October 2023)

Name : Craig McLachlan
Address at Reeves Plains: Section 613 + 619 of Port Gawler

Do you reside at the property? ~~Yes~~ (No)
Home address if other than above: 466A Dawkins Road, Gawler Ri

Contact Email : craig@newboldstuds.com

Comments on mining at Reeves Plains:
Sand will be removed using a loader. Do you have any concerns with removal of sand from Reeves Plains?

No

Proposed Operating Hours 7.00am to 6.00pm Monday to Saturday. Saturday is only worked when necessary due to market demand.

Person to contact re above: Craig McLachlan
Best form of contact (phone or email): craig@newboldstuds.com

Dated: 12/10/2023

Please return in supplied envelope to reach us by **6 October, 2023**:
Clay & Mineral Sales Pty. Ltd.
PO Box 155, Surrey Downs SA 5126

email to: richardf@claymineral.com.au

Appendix 7 – EPBC Act Protected Matters Report

Australian Government
Department of Climate Change, Energy, the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 24-Feb-2025

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 24-Feb-2025

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	18
Listed Migratory Species:	10

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	18
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	1
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	4
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Iron-grass Natural Temperate Grassland of South Australia	Critically Endangered	Community may occur within area	In feature area
Peppermint Box (Eucalyptus odorata) Grassy Woodland of South Australia	Critically Endangered	Community may occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Gallinago hardwickii			
Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area
Grantiella picta			
Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area	In feature area
Melanodryas cucullata cucullata			
South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area	In feature area
Neophema chrysostoma			
Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area	In feature area
Numenius madagascariensis			
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pedionomus torquatus			
Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area	In feature area
Rostratula australis			
Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Stagonopleura guttata			
Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Tringa nebularia			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In feature area
MAMMAL			
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Species or species habitat likely to occur within area	In feature area
PLANT			
Caladenia tensa			
Greencomb Spider-orchid, Rigid Spider-orchid [24390]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Senecio macrocarpus](#)			
Large-fruit Fireweed, Large-fruit Groundsel [16333]	Vulnerable	Species or species habitat may occur within area	In feature area
[Swainsona pyrophila](#)			
Yellow Swainson-pea [56344]	Vulnerable	Species or species habitat may occur within area	In feature area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
[Apus pacificus](#)			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
[Motacilla cinerea](#)			
Grey Wagtail [642]		Species or species habitat may occur within area	In feature area
[Motacilla flava](#)			
Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
[Actitis hypoleucos](#)			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
[Calidris acuminata](#)			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
[Calidris ferruginea](#)			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
[Calidris melanotos](#)			
Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
[Gallinago hardwickii](#)			
Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Numenius madagascariensis			
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Tringa nebularia			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In feature area

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis			
Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos			
Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Chalcites osculans as Chrysococcyx osculans			
Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
Gallinago hardwickii			
Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Haliaeetus leucogaster			
White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
Merops ornatus			
Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla cinerea			
Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla flava			
Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca			
Satin Flycatcher [612]		Species or species habitat may occur within area overfly marine area	In feature area
Neophema chrysostoma			
Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Numenius madagascariensis			
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato)			
Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Sterna striata			
White-fronted Tern [799]		Migration route may occur within area	In feature area
Tringa nebularia			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Unnamed (No.HA1620)	Heritage Agreement	SA	In feature area

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Southern Gas Pipeline Project	2002/619	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

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-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

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Please feel free to provide feedback via the Contact us page.

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