

SELICKS HILL QUARRY MISCELLANEOUS PURPOSES LICENCE APPLICATION

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Site Location Plan	(Drawing No. 1741.DRG.149)
Topographic Map	(Drawing No. 1741.DRG.140R1)
Local Geological Map	(Drawing No. 1741.DRG.138)
Groundwater Map	(Drawing No. 1741.DRG.150)
Overburden Stormwater Management Plan	(Drawing No. 1741.DRG.147R2)
Proximity to Infrastructure and Housing	(Drawing No. 1741.DRG.148R1)
Proximity to Conservation Areas	(Drawing No. 1741.DRG.151R1)
Land Access Map	(Drawing No. 1741.DRG.139R1)
Site Layout Plan - MPLA	(Drawing No. 1741.DRG.160)
PM 237 South Road Reserve Overburden Design	(Drawing No. 1741.DRG.142R2)
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ATTACHMENTS

Attachment 1	Boundary Identification Survey
Attachment 2	Windrose Data Analysis
Attachment 3	<i>Environmental Protection Biodiversity Conservation (EPBC) Act 1999</i> Protected Matters Report
Attachment 4	Dust Management Plan
Attachment 5	Noise Measurement Report
Attachment 6	Confidential – Aboriginal Affairs and Reconciliation Report
Attachment 7	Stakeholder Engagement Letter
Attachment 8	Confidential – EPA Expiation Notice

Declaration of Accuracy

I, **Adam Schutz**, the applicant, have taken reasonable steps to review the information and to ensure its accuracy.

A handwritten signature in black ink, appearing to read 'Adam Schutz', is written over a horizontal line.

Name: Adam Schutz
Position: Manager - Quarry Operations
Dated: April 2024

1. Introduction

1.1 Background

Adbri Concrete and Quarries SA Pty Ltd (Adbri) operates Sellicks Hill Quarry (the Quarry), located on Main South Road, Sellicks Beach, South Australia, overlain by Extractive Minerals Lease (EML) 5440, Private Mine (PM) 163 and 237 and Mineral Claim (MC) 4414. PM 237 is currently divided by a road reserve, recently Adbri have purchased the road reserve and this is the land parcel that is subject of this Miscellaneous Purposes Licence Application (MPLA) (the Site).

Survey of the area of interest can be found within **Attachment 1 – Boundary Identification Survey**.

The Quarry is located approximately 48 kilometres (kms) south of the Adelaide CBD and the Site approximately 600 metres (m) south east of the township of Sellicks Beach. **Drawing No. 1741.DRG.149 – Site Location Plan** highlights the Site in relation to nearby townships in proximity to Adelaide.

Adbri are applying for a MPL for the southern section of PM 237 to be utilised for overburden stockpiling. As a result of the stakeholder engagement process for the MC and subsequent Mining Lease Proposal (MLP) on the east of the Quarry and the delivery of the combined Mine Operations Plan / Program for Environment Protection (MOP PEPR), stakeholders voiced the importance of visual screening of the Quarry to external receptors using Main South Road and from the Sellicks Beach township. As a result, the Quarry looked at conceptual overburden designs to continue south along the currently approved area to further screen the Quarry in the mid to long term.

The visual aspect of looking into the Quarry when travelling south along Main South Road was considered by the company in context of views of external receptors and therefore additional land has been procured (road reserve) to enable the extension of the Western Screening Mound (WSM) that is currently viewed alongside Main South Road. The WSM is performing well as a visual mitigation measure to residents to the Sellicks Beach direction and the intent is for the extension of the WSM south to provide a similar visual relief for motorists in the long term travelling north along Main South Road. As the current WSM is working well in service from a geotechnical perspective, the Site area and design has followed the same design criteria for the extension of the WSM south to within the Site.

Adbri did have the option as to whether to extend the pit further south to within the Site area however the additional tonnes of material estimated was not commensurate and therefore the social and environmental value of extending the WSM south was more viable for the Site in working with it's stakeholders than gaining additional resources.

1.2 Site Overview

An overview of the Tenement details is summarised in **Table 1 – Site / Application Detail Summary**.

Table 1 – Site / Application Detail Summary

Address	3981 Main South Road, Sellicks Beach SA 5174
Title Details	CT, Hundred of Willunga
Date Pegged	April 2024
Applicant Name	Southern Quarries Pty Ltd

1.3 Site Contact

Table 2 – Site Contact Details summarises the Site contact details.

Table 2 – Site Contact Details

Contact Name / Position	Adam Schutz
Phone Number	0447 466 817
Postal Address	16 Phillips Street, Thebarton, South Australia, 5031
Email	Adam.schutz@adbri.com.au

2. Description of the Existing Environment

2.1 Topography and Landscape

Site topography as per **Drawing No. 1741.DRG.140R1 – Topographic Map** has revealed current topographic data which in turn allows surface water drainage areas, slope angles and ramp gradients to be assessed.

An inspection of the MPLA area has confirmed that there are no visible indications of the presence of caves and / or karsts.

2.2 Climate

The climate is described as Mediterranean with majority of rain falling between the months of May and October, along with cooler temperatures. Monthly mean rainfall data from the Bureau of Meteorology (BoM) was obtained from the Sellicks Beach 23871 weather station, which is located less than one (1) km from the Site. The average annual rainfall is 493.8 millimetres (mm), with high levels of rainfall in winter and low readings in summer.

Monthly mean temperature data from the BoM was obtained from Myponga 23738 weather station, which is located approximately six (6) kms south of the Site. The average annual temperature is 19.3 degrees Celsius, with warm temperatures accumulating in the summer months and cold temperatures in the winter, of which is typical for a Mediterranean climate, refer to **Table 3 – Myponga Climate Summary Statistics**.

Table 3 – Myponga Climate Summary Statistics

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years	Plot	Map
Temperature																
Mean maximum temperature (°C)	26.9	25.8	23.9	20.4	16.1	14.0	12.6	13.5	15.9	18.6	21.7	23.6	19.4	14	1954 1967	
Mean minimum temperature (°C)	11.6	11.8	9.8	7.5	6.4	4.6	4.3	4.6	5.3	6.6	8.2	9.8	7.5	13	1954 1967	
Rainfall																
Mean rainfall (mm)	24.2	27.7	24.4	55.6	93.2	113.2	115.8	97.1	82.9	59.0	38.1	30.8	757.2	92	1914 2022	
Decile 5 (median) rainfall (mm)	17.6	17.6	17.8	47.4	86.0	107.0	105.0	101.0	78.4	55.8	30.8	25.3	780.6	101	1914 2022	
Mean number of days of rain ≥ 1 mm	2.8	3.0	3.6	7.1	10.9	12.2	13.5	12.9	10.2	8.1	5.5	4.3	94.1	96	1914 2022	
Other daily elements																
Mean daily sunshine (hours)																
Mean number of clear days	8.6	5.7	4.9	3.8	2.5	3.0	2.1	2.5	4.0	2.9	3.4	4.8	48.2	11	1957 1967	
Mean number of cloudy days	5.2	6.7	6.6	8.3	14.1	11.0	15.1	13.6	12.3	11.1	9.8	8.6	122.4	11	1957 1967	
9 am conditions																
Mean 9am temperature (°C)	21.5	20.4	18.7	15.4	11.9	9.8	8.8	9.8	12.2	14.4	17.0	18.8	14.9	14	1954 1967	
Mean 9am relative humidity (%)	54	59	63	71	80	84	85	83	75	70	62	60	70	14	1954 1967	
Mean 9am wind speed (km/h)														9	1957 1967	
9am wind speed vs direction plot																
3 pm conditions																
Mean 3pm temperature (°C)	24.5	23.9	22.0	18.6	15.0	13.0	11.5	12.5	14.7	16.6	19.8	20.9	17.8	14	1954 1967	
Mean 3pm relative humidity (%)	44	47	50	58	67	73	75	71	66	62	54	51	60	14	1954 1967	
Mean 3pm wind speed (km/h)														7	1957 1967	
3pm wind speed vs direction plot																

(Source: Bureau of Meteorology, 2022)

The dominant wind direction is reported to be from the south east with increased winds and stronger gusts in the summer months, refer to **Attachment 2 – Windrose Data Analysis**.

2.3 Topsoil and Subsoil

The Department for Environment and Water (DEW) application NatureMaps, Soil Characterisation Site data identified the soil in the area as 'shallow loam over calcreted limestone', described as *medium thickness crumbly loam over calcreted partly cemented very highly calcareous material* (DEW, 2023), refer site number C153 which is located on the Site. The main soil group is A2 which has a depth of 50 centimetres (cm) and makes up 2.1 percent of southern South Australia (The Soils of Southern South Australia, 2009). The grey / reddish brown soils are formed in the rock,

with water erosion not likely to cause any issues. There is no variation in soils across the MPLA area, nor any soil characteristics that may be an issue for disturbance or rehabilitation.

Prior to the placement of any overburden over the area, the Topsoil will be stripped and relocated to the adjacent quarry to use for the rehabilitation of the WSM area. This will benefit the current rehabilitation works on the WSM whilst also allowing the overburden structure to 'key in' to the insitu rock below the surface to create a more stable landform.

2.4 Geological Environment

The Site consists of two (2) unique geological units. The northern section of the Site is made of Heatherdale Shale, which comprises of both shale and limestone. The southern section of the Site is made of Forktree Limestone. Both sections are part of the Wangkonda Formation and the Normanville Formation. The geology of the MPLA area is provided in **Drawing No. 1741.DRG.138 – Local Geological Map**.

Whilst the geology is provided above, no material is to be extracted other than topsoil within the Site.

2.5 Geohazards

It is understood that no material will be quarried at the Site under the MPLA, so there is no likelihood of potential acid generation or any substance to harm human health within the Site.

There are no known slips, faults or karst features located within the Site. A search on the South Australian Resources Information Gateway (SARIG) database identified no earthquakes to have occurred within the MPLA Site area. There have been a number of earthquakes nearby that have resulted in monitoring under a magnitude of three (3) which are presented in **Table 4 – Earthquakes** below.

Table 4 – Earthquakes

Date	Magnitude	Distance from Site (km)	Depth (m)
02/03/2012	0.9	0.3	7.87
03/07/1971	2.8	6.6	9.8
29/07/2009	1.4	5.1	18.96

(Source: South Australian Resources Information Gateway, 2023)

2.6 Groundwater

There are no Groundwater Dependent Ecosystems (GDE's) located within the MPLA Site area, however there are a number of GDEs located within the surrounding area. The Washpool Lagoon, located 2.7 kms north of the Site, is classified as a Nationally Important Wetland as well as having a high potential GDE. The Washpool Lagoon is not connected to any surface water from the MPLA area. This is an ecosystem that has a high dependence on the surface expression of groundwater. There are three (3) additional smaller areas that have a moderate potential GDE, all situated south of the Site.

The Site is located within the Western Mount Lofty Ranges (WMLR) Prescribed Water Resources Area (PWRA). There are no water wells located on the Site, however, **Table 5 – Water Wells** shows the information of the closest three (3) to the Site, refer to **Drawing No. 1741.DRG.150 – Groundwater Map**. A desktop analysis has revealed that the groundwater depths of the nearest water wells varies between approximately 14.98 metres Australian Height Datum (mAHD) to 31.11 mAHD, which is at a lower elevation than the MPLA area.

Table 5 – Water Wells

Drillhole Number	SWL Level (m)	Reduced SWL (mAHD)	SWL Date	Distance from Site (km)	Depth to Water
6527-01361	100	31.11	01/06/2001	0.6	100
6527-00531	48.77	14.98	18/07/1950	0.8	48.77
6527-01232	83.5	27.69	16/05/1995	1.2	83.5

(Source: South Australian Resources Information Gateway, 2022)

Whilst the groundwater is provided above, no material is to be extracted other than topsoil within the Site and therefore no risk of interception of groundwater.

2.7 Surface Water

The Site is located within the WMLR PWRA. There are several significant watercourses throughout this Water Resources Area, however none of these are located within or in proximity to the MPLA Site area. There are no GDEs located within or near the Site.

A search on the Government of South Australia Enviro Data, application *NatureMaps* (2021) a number of first order, second order and third order watercourses within proximity to the Site that enter into the Gulf St Vincent. Furthermore, the Myponga Reservoir is located 3.9 kms south east of the Site. The *EPBC Act 1999* Protected Matters Search identified the Washpool Lagoon as a Nationally Important Wetland, situated 2.7 kms north of the Site.

The adjacent quarry hosts the WSM that in service is not showing signs of scouring / erosion and / or sediment leaving the Quarry boundary.

There is one (1) small sediment basin that is regularly maintained on the western side of the WSM that gains some minor sedimentation largely from the unsealed road near the sediment basin throughout higher rainfall periods. The positive planting of rye grasses in early periods of construction has demonstrated that sediment can be retained on the Quarry.

The MPLA area does not fall within or in proximity to the Murray Darling Basin, nor within the water protection area under the *River Murray Act 2003*. Elevations of the Site are provided in **Drawing No. 1741.DRG.147R2 – Overburden Stormwater Management Plan**. In addition, the provision for a sediment basin is displayed with a total volume of 1,000 kilo litre (kL) to capture any localised sediment through the early construction phases of Tier 1 (bottom tier).

2.8 Vegetation, Weeds and Plant Pathogens

A search on the *EPBC Act 1999* Protected Matters Report search with a five (5) km buffer identified three (3) listed threatened communities that may occur within the area which include; Swamps of the Fleurieu Peninsula (critically endangered), subtropical and temperate Coastal Saltmarsh (Vulnerable) and Grey Box (*Eucalyptus macrocarpa*) Grassy Woodlands and Derived Native Grasslands of south eastern Australia. Refer to **Attachment 3 – Environmental Protection and Biodiversity Conservation Act 1999 Protected Matters Report**.

A search on the *EPBC Act 1999* Protected Matters Report search with a five (5) km buffer identified sixteen listed threatened species or species habitat that are known to occur within the area, refer to **Attachment 3 – Environmental Protection and Biodiversity Conservation Act 1999 Protected Matters Report**.

Historical land uses of cropping and grazing agriculture within and adjacent to the Site, there is no remnant vegetation remaining onsite. Therefore, an offset through the achievement of a significant environmental benefit (SEB) will not be required. A search of the Government of South Australia Enviro Data, application *NatureMaps* (2022), identified the pre-European vegetation to be comprised of *Eucalyptus porosa*, *Allocasuarina verticillata* and *Melaleuca lanceolata* overstorey.

There is, however, planted vegetation within the southern section of PM 237 (Sellicks Hill ridgeline). A review of historical aerial survey imagery captured by the Government of South Australia Department for Lands (survey 2397, frame 83 and survey 2405, frame 3) captured in March 1979 shows the Sellicks Ridgeline as being devoid of native vegetation, refer to **Diagram 1 – Survey 2397 Frame 83** and **Diagram 2 – Survey 2405 Frame 3**. Recent aerial imagery shows vegetation growth on the ridgeline of PM 237, PM 163 and the ridgeline of the EML 6552 area.

Diagram 1 – Survey 2397 Frame 83



Diagram 2 – Survey 2405 Frame 3



A search of the Government of South Australia Enviro Data, application *NatureMaps* (2022) identified no previous records of plant pathogens, including phytophthora within five (5) km of the Site.

2.9 Fauna

A search on the *EPBC Act 1999* Protected Matters Search Report within a five (5) km buffer identified 32 listed threatened bird species, four (4) listed threatened mammal species and three (3) listed threatened reptile species or species habitat to occur within the area. Since the Site is located within five (5) km of the ocean, the search report captured various marine species or species habitat of the Gulf St Vincent. Due to the Site being on land at a high

elevation, an MPLA is not predicted to pose as a threat to marine species within the region. Further information can be obtained from **Attachment 3 – Environmental Protection and Biodiversity Conservation Act 1999 Protected Matters Report**.

A search of the Government of South Australia Enviro Data, application *NatureMaps* (2021) has shown a list of fauna species recorded in the last twenty years within five (5) km of the Site, refer to **Table 6 – National and State Rated Fauna Species**.

Table 6 – National and State Rated Fauna Species

Scientific Name	Common Name	National Rating	State Rating
<i>Nannoperca australis</i>	Southern Pygmy Perch	Vulnerable	
<i>Anhinga novaehollandiae</i>	Australasian Darter		Rare
<i>Biziura lobata menziesi</i>	Musk Duck		Rare
<i>Cereopsis novaehollandiae novaehollandiae</i>	Cape Barron Goose		Rare
<i>Oxyura leucocephalus</i>	Banded Stilt		Vulnerable
<i>Limosa lapponica baueri</i>	Bar-tailed Godwit	Vulnerable	Rare
<i>Oxyura australis</i>	Blue-billed Duck		Rare
<i>Spatula rhynchotis</i>	Australasian Shoveler		Rare
<i>Zapornia tabuensis</i>	Spotless Crake		Rare
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Vulnerable	Rare

(Source: *NatureMaps* database, 2021)

2.10 Caves

A search on (SARIG) presented no caves or other geological monuments within the MPLA area or adjacent quarry. However, one (1) geological monument has been identified 145 m west of the Site; the Sellick Hill Formation is a Marino Arkose Member made up of the Wangkonda Formation, Mount Terrible Formation, Fork Tree Limestone and Heatherdale Shale. The formation is presented in **Drawing 1741.DRG.138 – Local Geological Map**.

2.11 Land Use

The Site is located within the Environmental Constraint Hills Face Zone (HFZ), directly east of Main South Road. The Site is located within the City of Onkaparinga Character Preservation District area and specifically in the Sellicks Beach Policy Area. According to the Onkaparinga Council Development Plan, the Onkaparinga Character Preservation District area is characterised by the following:

- Scenic and rural landscapes are highly valued, retained or protected
- Development near entrances to towns or settlements does not diminish the rural setting, character, and / or heritage values
- The long-term use of land for primary production adding enterprises is assured and promoted
- Activities positively contribute to tourism
- The heritage attributes of the district are preserved
- Buildings and structure compliment the landscape
- Residential development is located inside townships, settlements and rural living areas
- No expansion of rural living and settlement zones outside township areas.

Historically and currently, the land has been subject to ongoing sheep grazing and cropping and is situated adjacent to the existing operating areas of PM 163, EML 5440 and EML 6552. The Site is a small trail of land between PM 237 The rest of the surrounding area is utilised for livestock / grazing agricultural purposes.

The Site is situated within the following zone overlays: Airport Building Heights (Aircraft Landing Area), Building Near Airfields, Character Preservation District – Not In Township, Hazards (Bushfire – High Risk), Hazards (Flooding –

Evidence Required), Major Urban Transport Routes, Native Vegetation, PWRA, Prescribed Wells Area, Regulated Significant Tree, Traffic Generating Development, Water Resources.

The final land use will comprise of a mixture of agricultural uses and native vegetation, with all efforts made to maximise the amount of land returned for agriculture. The primary agricultural land use is anticipated to be predominantly sheep grazing.

2.12 Proximity to Infrastructure and Housing

The Site is located directly along Main South Road, which is a major infrastructure link for road users from the southern areas to Adelaide's CBD.

The Site is located approximately 600 m south east from the township of Sellicks Beach. The township has general facilities such as a community hall and a general store, as well as a number of beach shacks and other tourist accommodation. **Drawing No. 1741.DRG.148R1 – Proximity to Infrastructure and Housing** map identifies the locations of housing and infrastructure in proximity to the Site. The closest residential dwelling is located approximately 500 m north west of the Site towards Sellicks Beach. A large Buddhist Temple is located approximately 400 m south west of the Site. The Site is situated on the border of the City of Onkaparinga and The District Council of Yankalilla. The border is distinguished by an uninformed public road.

There is one (1) known pipeline that runs adjacent to Main South Road to the west, which is near the Site. There are no railway lines in the surrounding area of the Site.

2.13 Exempt Land

Searches on SARIG and South Australia Property and Planning Atlas (SAPPA) identified there to be no exempt land within proximity to the Site.

2.14 Amenity

The aim of the MPLA is to improve the overall visual amenity on the Sellicks Hill Quarry operations and to incorporate rehabilitation into a realistic design and provide a rounded appearance. The WSM on the adjacent quarry has proven to be a safe, stable and opportunistic way to utilise overburden whilst screening the Quarry activities. The MPLA will also assist in proving some mid to long term relief from stakeholders using the road asset looking into the Quarry especially in the longer term when the eastern areas are disturbed throughout quarrying activities.

Before the development of a visual screen at the Site, road users travelling north on Main South Road have a direct view into the operations area of the adjacent quarry. Additionally, there is a Buddhist Temple located approximately 400 m south west of the Site, with scenic views in direction of the coastline and in the Quarry operations.

2.15 Air Quality

The Site is situated in an area surrounded by landholdings that are subject to agricultural activities including grazing and cropping. The Site is located adjacent to the operating quarry to the north of the Site. Background emissions of dust are expected to be typical of a rural setting with some influence from the adjacent quarry.

There are extensive dust mitigation measures in place within the adjacent quarry area with the utilisation of a water truck to minimise the impacts of potential dust emissions, as well as the installation of a conveyor sprinkler to suppress ground borne dust within the crushing facility. The adjacent quarry also operates under a Trigger Action Response Plan (TARP), which addresses dust monitoring and response, community engagement and reporting arrangements, refer to **Attachment 4 – Dust Management Plan**. Within **Attachment 4 – Dust Management Plan**, Table 13 includes controls to be enacted upon in relation to wind erosion from stockpiles and namely from the WSM.

Three (3) air quality monitoring stations are located on the adjacent quarry boundary and were cited as close to the sensitive receivers as practicable under the guidance of the Environmental Protection Authority (EPA) and in

adherence with Australian Standard As 3580.1.1 – 2015 “*Methods for Sampling and Analysis of Ambient Air – Guide to Siting Air Monitoring Equipment*”. Refer to **Attachment 4 – Dust Management Plan** for further information.

2.16 Noise

The Sellicks Beach township is located approximately 500 m to the west of the Site. The proximity to the nearest sensitive receptors is discussed in **Section 2.12 Proximity to Infrastructure and Housing**, with the nearest residence located approximately 500 m west of the Site.

A noise assessment was undertaken in 2016 by Architecture, Engineering, Construction, Operations and Management (AECOM) at several sensitive receptor locations to understand the current noise levels associated with the operations adjacent to the MPLA and PM, in adherence to the requirements of the EPA *Environmental Protection (Noise) Policy 2007*. The noise monitoring undertaken is in consideration of the adjacent quarry and represents a very conservative assessment of noise generating activities undertaken with the MPLA as the noise generating activities will be limited to the transport and placement of overburden material only.

Noise measurements were collected at 11 locations in the early morning when the adjacent quarry was fully operational to reduce the influence of noise generated from Main South Road. During the assessment it was noted that noise from the operations of the Quarry were inaudible at locations eight (8) and nine (9) with low frequency hum occasionally audible at location 10. Quarry noise was inaudible at location 11. To enable assessment against the night-time period, measured levels were background-corrected and adjusted to account for the additional distance between the measurement and receiver location.

The noise assessment undertaken (refer to **Attachment 5 – Noise Measurement Report**) concluded that noise levels monitored at the nearest sensitive receiver locations, except for location eight (8), were compliant with the relevant noise criteria for the day and night-time assessment periods outlined in **Table 7 – Sensitive Receiver Measured Noise Results**. Although the noise level at location eight (8) was above the noise criteria, the noise was primarily influenced by traffic on Main South Road and the operations onsite were inaudible.

Table 7 – Sensitive Receiver Measured Noise Results

Location	Measured Noise Level (LAeq)	Noise criteria for closest receiver	
		Day	Night
8	53	52	45
9	43	55	48
10	42	55	48
11	44	52	45

(Source: Attachment 4 – Noise Measurement Report)

2.17 Heritage (Aboriginal, European, Geological)

A search of the Department of State Development – Aboriginal Affairs and Reconciliation (DSD-AAR) Central Archive *Taa Wika* Database which includes the Register of Aboriginal Heritage Sites and Objects, conducted on 23 September 2022 reported no entries for Aboriginal Sites in relation to the MPLA area, refer to **Attachment 6 – Confidential – Aboriginal Affairs and Reconciliation Report**. There are, however, five (5) archaeological entries located within two (2) km of the Site.

A search of the Local Heritage Places Database and the Council Development Plan confirmed that there are no known European and / or Geological Heritage sites located within the MPLA area, however nearby local heritage sites from Sellicks Beach and Sellicks Hill, found in **Table 8 – Local Heritage Sites**.

Background searches on SARIG and DEW databases has determined the presence of three (3) geological monuments in proximity to the Site. Refer to **Section 2.18 Proximity to Conservation Areas** for further information. It should be noted that these monuments are located outside the MPLA area.

The Site has been previously subject to agricultural activities hence the likelihood of occurrence of the heritage artefacts onsite is low. Although a search of the cultural heritage register undertaken for the Site did not identify any known heritage sites or objects within the MPLA area, it is possible that heritage sites and objects may exist that are presently not recorded. In the event that items are discovered upon WSM development, Southern Quarries procedures clearly direct that they will be preserved for assessment by the appropriate authorities, refer to **Section 7.3 Heritage** for environmental management strategies. There have been no Aboriginal cultural heritage surveys that have been undertaken by the proponent.

Table 8 – Local Heritage Sites

Heritage Number	Address	Details
5463	191 Button Road, Sellicks Beach	Norman's Farm House
5535	122 Country Road, Sellicks Beach	Just's Farm Complex
5524	79-80 Esplanade, Sellicks Beach	Pebble House
5533	3846 Main South Road, Sellicks Beach	Clarke Former Farmhouse
24503	20 Sellicks Beach Road, Sellicks Beach	Cemetery
5534	21 Sellicks Beach Road, Sellicks Beach	Former Church
5536	12 Stirling Avenue, Sellicks Beach	McRae Farmhouse
5523	100 Culley Road, Sellicks Hill	McCrae Farmhouse
5522	122 Culley Road, Sellicks Hill	Former Farmhouse
5526	3731 Main South Road, Sellicks Hill	Cameron Farmhouse
5528	652 Old Sellicks Hill Road, Sellicks Hill	Victory Hotel
5292	292 Plains Road, Sellicks Hill	Eatt's Farmhouse
5532	418 Plains Road, Sellicks Hill	Former Farmhouse
5525	Rogers Road, Sellicks Hill	Corrugated Iron Barns

(Source: SA Heritage Places Database Search, 2023)

2.18 Proximity to Conservation Areas

Two (2) conservation parks and one (1) lagoon have been identified within 10 kms from the Site, including Aldinga Scrub Conservation Park, Stipiturus Conservation Park and the Washpool Lagoon / Wangkondanangko, refer to **Drawing No. 1741.DRG.151R1 – Proximity to Conservation Areas**.

The *EPBC Act 1999* Protected Matters Report identified the Washpool Lagoon / Wangkondanangko as a Nationally Important Wetland. It is one (1) of the last remaining coastal freshwater and estuarine lagoon systems along the Adelaide metropolitan coastline. The lagoon has a number of environmental, cultural and spiritual benefits for the Kaurna people(s) and other Aboriginal groups. The lagoon is located 2.7 kms north of the Site.

The *EPBC Act 1999* Protected Matters Report identified the Aldinga Scrub Conservation Park as a listed State and Territory Reserve. It is home to a diverse range of the State's rare flora and is recognised as an environmental, cultural and spiritually important area for the Kaurna people(s) and other Aboriginal groups. The Aldinga Scrub is located 4.2 kms north of the Site.

2.19 Pre-existing Site Contamination and Previous Disturbance

A search of the EPA contamination site index for the suburbs of Sellicks Hill and Sellicks Beach did not record any contaminated sites within the MPLA area.

A search on the Government of South Australia Enviro Data, application *NatureMaps* (2022) identified that the MPLA Site area was historically cleared for agricultural purposes. The pre-European vegetation consisted of *Allocasuarina spp.* Low woodland over open grassy and herbaceous understorey, including species such as *Lomandra spp.* And *Austrostipa spp.*

3. Description of the Proposed Mining Operations

3.1 General Description and Maps / Plans of Operation

The following description of the proposed operations is provided to outline the proposed activities to be undertaken within the Site in so far as required to manage overburden from the surrounding quarry operations and provide a safe, stable and self-sustaining landform.

Operations are limited to surface works only and do not propose any extraction within the area of the MPLA, other than removal of topsoil for use in rehabilitation and to aid in geotechnically keying in the overburden to insitu ground. Therefore, no products will be generated because of the operations associated with the MPLA. Details referring to production and production rates have been omitted from this application.

Surface works (earthworks) associated with construction on the landform are to occur in accordance with details, notes and cross-sections of engineers outlined in the Site development plans and cross sections.

The overburden landform structure within the proposed MPLA area is to be constructed in a systematic way forming compacted layers of material which is to be shaped to blend in with the surrounding landscape.

Progressive development of the land will be undertaken in order to increase surface stability and reduce the risk associated with geotechnical failures occurring and potential offsite discharges of sediment laden surface water runoff.

The overburden landform will be constructed in accordance with the adjacent WSM at the Quarry. The design will be tiered and constructed from the bottom up to ensure compaction (with Heavy Mobile Equipment (HME)) that will reduce the potential for geotechnical risks occurring. Once each tier is completed it will be initially seeded with rye grass (or similar) to achieve soil stabilisation as what is demonstrated to the north within the adjacent quarry (refer **Diagram 3 – WSM Construction and Stabilisation**).



Diagram 3 – WSM Construction and Stabilisation

Drawings that support the MPLA are highlighted below:

- **Drawing No. 1741.DRG.160 – Site Layout Plan - MPLA**
 - Site Location against adjoining Tenements
 - Adjacent Tenements
 - WSM at adjacent quarry
 - Sediment Basin Location
- **Drawing No. 1741.DRG.142R2 – PM 237 South Road Reserve Overburden Design**
 - Structure Design

- Reference RL's
- Cross Section Locations
- Cross Sections
- Adjacent Tenements
- Contours of Surrounding Land
- Remaining Dump Space (m³)
- **Drawing No. 1741.DRG.151R1 – Proximity to Conservation Areas Map**
 - Site Location
 - Adjacent Conservation Areas
 - Nearby township of Sellicks Beach
- **Drawing No. 1741.DRG.148R1 – Proximity to Infrastructure and Housing**
 - Property Parcels
 - Site Location
 - Proximity to adjacent Housing and Infrastructure
 - Scaled coordinates
 - Adjacent tenements
 - Local Road Network
- **Drawing No. 1741.DRG.140R1 – Topographic Map**
 - Tenement Boundary
 - Adjacent Tenement Boundary
 - Contours (Major and Minor)
 - Watercourses

The construction of the landform will comprise of waste rock fill material and clay (overburden) derived from the nearby quarry and placed within the footprint designated in **Drawing No. 1741.DRG.142R2 – PM 237 South Road Reserve Overburden Design** located entirely within the MPLA.

3.2 Resource and Products

3.2.1 Resource

Operations are limited to surface works only and do not propose any extraction within the proposed MPLA area (other than Topsoil for rehabilitating batters). No products will be generated because of the operations associated with the Site.

3.2.2 Production Rate and Products

The current WSM is nearing the MPLA area and therefore it is anticipated that the Site will be achieved as per design within three (3) years after approval date.

3.3 Quarrying Activities

3.3.1 Type or Types of Proposed Quarry Operations to be Carried Out

There will be no extraction of material on the proposed MPLA with operations limited to surface works in developing the final overburden landform. Overburden material will be removed and loaded within the nearby quarry and transported to the Site via PM 237. Refer to **Drawing No. 1741.DRG.160 – Site Layout Plan - MPLA** for the proposed layout of the Site in relation to the adjacent EML and PM.

Material will be placed in tiers to achieve the following criteria that is consistent with the adjacent quarry including:

An annual inspection by a suitably qualified person will demonstrate that Internal batters are not to exceed 36 degrees to ensure stability. Total Slope Angles to be kept less than 25 degrees to ensure stability.

3.3.2 **Sequence of Quarrying and Progressive Rehabilitation**

Overburden material will be placed of the proposed MPLA area where benching and overburden occurs in lifts from one (1) level to the next.

Geotechnical stability of the landform is achieved through the preparation of the ground surface allowing the overburden to key into the underlying landform. The placement overburden will occur over the top of this prepared layer.

Geotechnical considerations into design slope angles have been applied in accordance to slope design guidelines presented in **Table 9 – Slope Design Guidelines for Terminal Benches**.

Table 9 – Slope Design Guidelines for Terminal Benches

Internal Batter Angle	Not to Exceed 36 Degrees
Total Slope Angle	Not to Exceed 25 Degrees

Fine materials such as clay recovered from sediment basins will be placed internally within the overburden structure and covered with more competent material to limit the potential for erosion and scour of surfaces.

Compaction of the landform achieved through heavy vehicle movements on the surface will improve surface stability and reduce potential erosion. The landform is then topped with appropriate topsoil material and then vegetated, to further reduce the potential for erosion.

Periodic inspections of crests and batters of the overburden area is important, particularly following rainfall events in order to respond to early indicators of crest cracking, erosion, scouring and / or slumping of material. It is also important that drainage of the landform is maintained throughout the construction and provided by the design at completion to prevent pooling of surface waters and subsequent geotechnical failure occurring, refer to **Drawing No. 1741.DRG.142R2 – PM 237 South Road Reserve Overburden Design**.

3.3.3 **Stockpiles**

3.3.3.1 **Topsoil and Subsoil**

Operations on the proposed MPLA are limited to constructing an overburden landform. Temporary stockpile of topsoil material is to be stored on the adjacent quarry for the purposes of rehabilitation.

The aim of industry practices for the handling and storage of topsoil is to manage earthworks and stripping to allow for soil conservation and appropriate management of ongoing revegetation. Topsoil and subsoil are identified as suitable or unsuitable for use in rehabilitation before works commence and good quality topsoil is stored in areas where it can be accessed for Site rehabilitation to respread on finished batters. Unsuitable soil will be cleared, and control measures will be implemented for the eradication of weed seed.

Ongoing visual assessments (annual) of topsoil cover occurs onsite to confirm that there is sufficient growth medium spread on terminal areas of revegetation.

Topsoil stockpiles are not to exceed three (3) m in height to maintain viability of microorganisms and seed within the stockpiles.

3.3.3.2 **Product Stockpile**

There will be no Product Stockpiles onsite.

3.3.4 Use of Explosives

There will be no explosives used onsite.

3.3.5 Modes and Hours of Operation

Hours of operation of the Site are discussed in **Section 3.4.2 Hours of Operation**.

3.4 Crushing, Processing and Product Transport

3.4.1 Fixed Plant

There is no fixed crushing plant present onsite. Crushing and processing of material will not occur onsite.

3.4.2 Hours of Operation

The Hours onsite will be consistent with the adjacent quarry and will include:

Monday – Sunday 24 Hours / seven (7) days.

The typical hours of operation are as follows;

- Monday – Friday: 6:00 am – 6:00 pm
- Saturday: 6:00 am – 12:00 pm
- Sunday and Public Holidays – varied based on market demands(s)

Where necessary, the operations extend outside of the above-mentioned hours based on market demand. Generally, maintenance activities will continue outside of the typical hours of operation.

Noise emissions are discussed in **Section 2.16 Noise** of this report and **Attachment 5 – Noise Measurement Report** which concluded that noise levels monitored from the nearest sensitive receptor on the adjacent operating quarry were compliant with the relevant noise criteria for the day and night-time assessment periods. Therefore, the risk of noise emissions generated from onsite activities resulting in nuisance at nearby sensitive receptors is considered to be low.

3.4.3 Processing Wastes

There are no processing wastes generated from the earthworks. All overburden material is to be used in the construction of the landform. Residual stockpiles of overburden material from the adjacent EMLs and PMs may be utilised in the construction of the overburden landform.

3.4.4 Industrial and Domestic Wastes

Surface works within the proposed MPLA area will not produce industrial and / or domestic wastes.

Industrial and domestic wastes associated with the maintenance of HME will be serviced at the nearby quarry where wastes are temporarily stored within bunded facilities in accordance with the EPA Guideline: *EPA080/16 Liquid Storage Bunding and Spill Management* (EPA, 2016) and disposed of by an appropriately licenced third party as per the EPA requirements. EPA waste tracking certificates are retained by the nearby quarry where required.

3.5 Supporting Surface Infrastructure

3.5.1 Access and Roads

Access to the MPLA area will occur through the adjacent quarry Tenements. No new or upgraded roads are required for Site access. An internal road will be constructed to access and maintain the sediment basin.

3.5.2 Accommodation and Offices

No accommodation, buildings or offices will be located within the proposed MPLA area. The operation will be supported by existing infrastructure provided by the Quarry located to the north. The Quarry provides office and amenities required by the Site personnel and maintenance activities are supported by the existing workshop located within PM 163.

3.5.3 Public Services and Utilities Used by the Operation

Site access is discussed in **Section 3.5.1 Access and Roads** and describes access to the Site via the adjacent PM 237. Utilities such as electricity and mains water are not required for the proposed activity.

3.5.4 Visual Screening

Visual screening of operations is described in **Section 2.14 Amenity** and **Section 7.7 Visual Amenity** of this report.

3.5.5 Fuel and Chemical Storage

There will be no fuel and / or chemical storage on the Site. Bulk chemicals from operations are stored on the nearby quarry.

3.5.6 Site Security

The Site is secured on the perimeter by standard stock fencing. Site access is restricted to the public and access to the whole of PM 237 is closed and locked via a gate when the Site is unattended.

3.5.7 Erosion, Sediment and Silt Control

Surface water flows from an easterly direction on a downward slope towards the south east of the MPLA. A Sediment Basin has been designed and placed to capture sediment from initial construction works.

3.6 Vegetation Clearance

As outlined in **Section 2.8 Vegetation, Weeds and Plant Pathogens**, there is no remnant vegetation on the Site due to previous extensive clearing. Therefore, no offset through the achievement of a SEB will be required under the *Native Vegetation Act 1991*.

3.7 Site Water Management

Processing water will not be used within the MPLA, therefore site water management will not be required.

3.8 Description of Quarry Site at Completion

Landform completion estimated to occur at approximately 10 years after the commencement of operations within the MPLA area.

At completion of surface works and rehabilitation, it is envisaged that the land use will be returned for agricultural purposes, refer to **Drawing No. 1741.DRG.142R2 – PM 237 South Road Reserve Overburden Design**.

Ongoing quarry operations and progressive rehabilitation activities are to occur in accordance with Staged rehabilitation discussed in **Section 3.3.2 Sequence of Quarrying and Progressive Rehabilitation**.

Long term rehabilitation is envisaged to occur in accordance with overall proposal for the final landform provided in **Drawing No. 1741.DRG.142R2 – PM 237 South Road Reserve Overburden Design**, which provides a representation of the footprint and cross-section of the final landform. Long-term rehabilitation strategies focus on providing a safe and stable landform in the post completion landform that is self-sustaining and non-polluting with respect to overland flows.

Rehabilitation strategies that have been considered in the preparation of the final landform are as follows:

- Use of overburden as fill material in landform rehabilitation
- Progressive contouring and vegetation overburden emplaced
- Treatment of terminal batters with 150 mm of topsoil or other suitable growth media
- Revegetation planting with appropriate pasture grasses, indigenous grasses, shrubs and trees
- Round or marrying the contours into the natural ground surface
- Creating a final landform that is structurally safe and stable and facilitates the proposed post extraction land use.

There are no plans to locate fixed plant or equipment within the proposed MPLA area, as such it is anticipated that Adbri will not be required to remove any items of operation related infrastructure at the cessation of Site works in the nearby quarry to the north.

Landform rehabilitation will consist of battering the slopes to requirements within **Table 9 – Slope Design Guidelines for Terminal Benches**.

Terminal slopes will then be vegetated with suitable pasture grasses and / or native vegetation species appropriate to the future land use.

Drainage of the final landform is provided by several spine drains is provided in **Drawing No.1741.DRG.142R2 – PM 237 South Road Reserve Overburden Design**.

4. Description of Potential Benefits

4.1 Description of Workforce and Local Procurement

The workforce and use of local procured products is not expected to alter with the development of the MPLA area. This area is an administrative update to allow for the extension of the WSM.

4.2 Economic

As per the above, there will be no change in economic factors relating to the Site or adjacent quarry as a result of the construction of the WSM.

5. Consultation

The purchase of the Certificate of Title, transfer of Title, development of extension of the WSM was a key consideration post the engagement that was undertaken with stakeholders approximately five (5) years ago through the development of the MOP PEPR (2018).

Visual recognition from residents informed that an extension of the WSM to the south would be of benefit to the area and mainly road users that traffic from south to north of the Quarry. There is a visual impact of the eastern face of the Quarry (namely the recently approved EML 6552) that in future will increase due to development of the Quarry.

The process for identifying stakeholders that may have an interest was informed by a list of interested stakeholders that gain an update on when the Quarry will be blasting. The Quarry informs the stakeholders listed below in advance of blasting practices happening onsite. The same list of stakeholders were contacted via letter, refer **Attachment 7 – Stakeholder Engagement Letter** that was sent out on 10 May 2023.

Adabri requested that all feedback was presented back to the Quarry for consideration by 30 May 2023 (15 business days). As a result, there was no feedback provided back to the Quarry as a result of the Stakeholder Engagement Letter.

Stakeholder Name: Various Stakeholders
jessej@internode.on.net
athollbonner@hotmail.com
0418889851@sms.tim.telstra.com
kforrestal@internode.on.net
aleycaatz11@gmail.com
cjcfala@yahoo.com.au
gill.bolton@hotmail.com.au
kill5173@gmail.com
denise@3pillars.com.au
em.willy1@gmail.com
0437215802@sms.tim.telstra.com
Gary.eagle@bigpond.com
Pepper6675@bigpond.com
0403172983@sms.tim.telstra.com
Jmpslb43@gmail.com
freefallfilm@yahoo.com
jwhitehansen@yahoo.com
heardie7@gmail.com
0422970675@sms.tim.telstra.com
kjchinner@gmail.com
labusclj@gmail.com
lisa04050@gmail.com
martin@applesolutions.com.au
131mlee@gmail.com
Ms.ma.murray@gmail.com
miltonmuzik@yahoo.com.au
patoglesby@optusnet.com.au
patsprg@inet.net.au
dalkaren@inet.net.au
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0439849445@sms.tim.telstra.com
Roz.white@inet.net.au

sarahkuchler@hotmail.com
Annette.seeliger@enva.com.au
Steve.treasure@gmail.com
tsal@bigpond.com
0416323347@sms.tim.telstra.com
wbrumfitt@yahoo.com
stevovinoau@gmail.com
virezonja@gmail.com
kirsty.shearer@outlook.com
Date of consultation: 10 May 2023
Issue(s) raised: Nil
Issue considered: Nil

Local Residents

Consultative Committee

A consultative committee to be chaired by an independent chairperson is in the process of establishment. The committee will aim to host representatives from local residents, local government and regulating bodies to raise concerns, communicate resolutions and show a proactive approach to community engagement.

Discussions have commenced with a potential independent chair.

General Public

Issued Raised:

Whilst no specific community feedback was received on the MPLA application, the Site regularly received communication regarding dust generating activities within the greater Quarry. The MPLA has been reviewed to ensure all dust generating activities are being mitigated where possible, and will be managed as part of the Site's overall Dust Management Plan (DMP) and procedures.

Issue Considered:

In response to the continue community feedback on dust, the Site is reviewing and updating the DMP to include new Beta Attenuation Mass Monitors (BAM) Units to monitor PM10 and PM2.5 outputs in real time. At the time of lodgement of the MPLA the revised Dust Management Plan was with the EPA and DEM for review and approval. Once approved the DMP will be incorporated into the Quarry's future MOP / PEPRs, however control and management strategies for **Section 7.9 Dust** will refer to adherence to a reviewed DMP once approved.

Adbri have continued to invest significantly to improve operations within the Site and in response to managing dust. Examples of this includes but is not limited to:

- Progressive rehabilitation of exposed surfaces includes annual seeding of 5-7 t of rye grass per annum undertaken between June – September.
- November 2017 – installation of 375,000L water tank and quickfill system implemented onsite.
- March 2019 – supply agreement with Willunga Basin Water Company (WBWC) established to use additional 50ML of recycled water onsite.
- April 2020 – Reseal of quarry entrance.
- March 2020 – Installation to enclose Primary Dump Chute February.
- Camera system installed to monitor Site operations and conditions.
- June 2021 – Installation of new control rooms at the primary and secondary enclosure area.
- Upgrade infrastructure to support wheel wash operation – involved new 50mm SA Water connection and 2 x 360 kl water tanks.

- October 2023 – Second wheel wash installed.
- Ongoing shed enclosure infrastructure investigations. Design completed. Next phase for quoting and installation.

Local Government

The City of Onkaparinga has been consulted with regarding the proposed activities as part of the road closure process of which the approval to transfer of the road was completed in January 2024 along with Consent from council to utilise the land for quarry operations.

Additionally, a Local Government representative contacted the Quarry in November 2023 seeking an update on controls and actions the Site had for the upcoming summer, of which Adbri responded accordingly.

State Government Bodies

The Site has been in continuous consultation with EPA regarding dust management within the Site. This included:

- Relocation of ADR1 and ADR2 monitors
- Review of Dust Management Plan and implementation of new BAM units (to occur end of 2024)

Continued consultation has occurred through DEM in regard to the public's concerns regarding dust management.

Adbri are investigating the allocation of a resource to provide online information regarding blast dates and times, and updates on the Site's activities.

6. Management of Environmental Impacts

6.1 Introduction to Environmental Risk Assessment

To facilitate the management of potential environmental impacts at the Site in an efficient and effective manner, **Section 6 Management of Environmental Impacts** has been developed in accordance with the requirements of Terms of Reference (TOR) 003 – *Extractive mineral quarry lease/licence applications*.

This MPLA seeks to address potential environmental impacts and mitigation measures for the following environmental components that are reasonably expected to be affected by the proposed operations;

- Public Safety
- Traffic
- Heritage
- Weeds, Pests & Plant Pathogens
- Topsoil Management
- Waste Management
- Visual Amenity
- Noise
- Dust
- Protection of Third-Party Property
- Native Fauna
- Surface Water
- Groundwater
- Native Vegetation

The Environmental Impact Assessment presented in the following section identifies:

- The environmental components, context and interests of any affected parties.
- The potential environmental impacts that may be associated with the Quarry activity.
- The potential source, pathway and receptor associated with the impact.
- Confirmation that the source, pathway and receptor are present for the associated impact.
- A description of the uncertainties and assumptions associated with the impact assessment.
- An evaluation of the sensitivity to change of the impact assessment.

Where the environmental impact source, pathway and receptor are confirmed to be present for a specific environmental impact the following information will also be provided:

- A description of the impact control and management strategies.
- A description of the uncertainties and assumptions associated with the control and management strategies.
- An evaluation of the sensitivity to change the control strategies.
- Outcome and measurement criteria for each impact.

The proposed outcomes and outcome measurement criteria presented at the end of each impact assessment are limited to those associated with environmental aspects that contain a source, pathway and receptor that are likely to be affected by the proposed operation.

7. Assessment of Environmental Impacts

An assessment of potential impact is outlined below taking into consideration the views and interests of third parties as summarised in **Section 5 Consultation**.

7.1 Public Safety

7.1.1 Context

The MPLA is a small portion of land surrounded by PM 237 and a section of agricultural land(s) which is not readily accessed by members of the public.

The proximity of infrastructure and the nearest sensitive receptors is discussed in **Section 2.12 Proximity to Infrastructure and Housing** with the nearest residence located approximately 450 m north west of the Site of the MPLA area.

The Site is unlikely to be affected by trespassers. The Site is secured around the perimeter of PM 237 by standard stock fencing and by a gate along the adjacent quarry Site.

7.1.2 Impact Assessment

Quarry Phase	Potential Impact Event			
Operational	Public injury and / or death due to members of the public entering the Site and interacting with Site development during construction.			
Impact (ID)	Source	Pathway	Receptor	Confirmation of the source pathway and receptor (Y/N)
P1	Operational activities, establishment of the screening mound and HME.	Unauthorised public access to the Site.	Member of the public.	Yes.
Uncertainty and Assumptions		It may be possible for trespassers to enter the Site; however, the likelihood is low. All access to the Site is gained via the north (adjacent quarry). The Site will be fenced and maintained; however, it may be subject to vandalism.		
Sensitivity to Change		The sensitivity to change is low.		
Justification for the Confirmation / non-confirmation of Source, Pathway and Receptor		It is possible that the Site could be affected by trespassers although the likelihood of this is low.		

Quarry Phase	Potential Impact Event			
Site Closure	Public injury and / or death due to members of the public entering the Site and interacting with Site development during Site closure.			
Impact (ID)	Source	Pathway	Receptor	Confirmation of the source pathway and receptor (Y/N)
P2	Rehabilitated landform.	Unauthorised public access to the Site.	Member of the public.	Yes.
Uncertainty and Assumptions		The landform will be developed and stabilised in accordance with the Quarry Development Plans (QDPs). The final landform will incorporate batter angles of that noted within Table 9 – Slope Design Guidelines for Terminal Benches . The condition of fencing will remain in good order, however, may be subject to vandalism.		
Sensitivity to Change		The sensitivity to change is considered to be low.		
Justification for the Confirmation / non-confirmation of Source, Pathway and Receptor		It is possible that the Site could be affected by trespassers post closure.		

7.1.3 Control and Management Strategies

Control and Management Strategies – Operational
<p>Operational</p> <ul style="list-style-type: none"> Regular inspection of Site fencing and signage to ensure they are adequately maintained. Ensure that the proposed landform is constructed in accordance with approved staged development plans designed to provide a safe, stable and non-polluting landform and is suitable for the desired long-term land use, refer to Drawing No. 1741.DRG.142R2 – PM 237 South Road Reserve Overburden Design. <p>Closure</p> <ul style="list-style-type: none"> Adherence with Drawing No. 1741.DRG.142R2 – PM 237 South Road Reserve Overburden Design. Ensure the final landform is constructed in accordance with approved rehabilitation plans designed to provide side, stable and non-polluting landform and is suitable for the desired long-term land use.
Uncertainty and Assumptions of Control Strategies – Operational
Risks associated with trespass to the Site post closure is reduced provided operators adheres to Site development and rehabilitation plans.
Sensitivity to Change of Assumptions – Operational
The rate of progressiveness is subject to market demand and the generation of the final land formation.

7.1.4 Proposed Environmental Outcome and Measurement Criteria

Operational	
Proposed Outcome	Outcome Measurement Criteria
No public injuries and / or deaths resulting from unauthorised entry to the Site that could have been prevented.	All incidents involving public injury and / or deaths resulting from unauthorised access to the Site are to be recorded in a Quarry Log Book and investigated by a suitably qualified party within one (1) calendar month (or another time as agreed with the Mining Regulator) and the results of the investigation show that the incident could not have been reasonably prevented by the Tenement Holder.

Closure	
Proposed Outcome	Outcome Measurement Criteria
No public injuries and / or deaths resulting from the completed final landform post quarry completion.	An inspection and report from a suitably qualified person conducted once prior to surrender verifies that the final landform has been constructed as per design and is geotechnically stable for the long term.

7.2 Traffic

7.2.1 Context

Site access is discussed in **Section 3.5.1 Access and Roads**. Access to the MPLA area will be obtained via an internal haul road from PM 237 which is not accessible to members of the public. There will be no external access points to the Site and the Site will not be accessible to members of the public.

7.2.2 Impact Assessment

Quarry Phase	Potential Impact Event			
Operational	Public safety risks such as collision between trucks and vehicles resulting from quarry vehicles entering and exiting the Site at the access point.			
Impact (ID)	Source	Pathway	Receptor	Confirmation of the source pathway and receptor (Y/N)
T1	Quarry related traffic and HME.	Entrance to the Site.	Public traffic.	No.
Uncertainty and Assumptions		There are no external access points to the Site with the only access point available via an internal haul road to the adjacent PM 237. There are no additional external roads to be constructed in order to access the Site. No quarry access from the Site is required directly from Main South Road.		
Sensitivity to Change		The sensitivity to change is considered moderate if a new access point is required onto Main South Road.		
Justification for the Confirmation / non-confirmation of Source, Pathway and Receptor		The Site will be accessed via the adjacent quarry and not directly via public roads, therefore public traffic will not be present at the Site access point.		

7.3 Heritage

7.3.1 Context

Aboriginal, European and Geological Heritage is discussed in **Section 2.17 Heritage (Aboriginal, European, Geological)**. Searches of the Central Archive, the Local and State Heritage Places Database and the *Taa Wika* Search confirmed that there are no known Aboriginal, European and / or Geological sites, objects or remains located within the MPLA.

7.3.2 Impact Assessment

Quarry Phase	Potential Impact Event			
Operational	Disturbance and / or destruction of Aboriginal, European and / or Geological Heritage sites, objects or remains through the development and operation of the Site.			
Impact (ID)	Source	Pathway	Receptor	Confirmation of the source pathway and receptor (Y/N)
H1	Machinery disturbing areas of Aboriginal, European and / or Geological Heritage.	HME movements during overburden placement.	Heritage (Site, object and / or remain(s)).	Yes.
Uncertainty and Assumptions		While there is an absence of reported Aboriginal or European Heritage items directly within the Site, it is possible artefacts, objects or remains could exist that are not currently known about.		
Sensitivity to Change		Large-scale earthworks could result in unrecorded Heritage sites being uncovered.		
Justification for the Confirmation / non-confirmation of Source, Pathway and Receptor		It is possible that unrecorded heritage items of significance could be present within the Site.		

7.3.3 Control and Management Strategies

Control and Management Strategies
<ul style="list-style-type: none"> All personnel at the Site are to be inducted and relevant training provided on associated legislative responsibilities. In the event that any Aboriginal and / or European Heritage sites, objects or remains are identified, the following is to occur: <ul style="list-style-type: none"> Immediately stop all works in vicinity of the find Notify the relevant authority (DSD-AAR) and the local SA Heritage Council of the find / potential find at the Site. No activities are to commence in the vicinity of the find until liaison with the relevant authority(ies) to proceed has been granted.
Uncertainty and Assumptions of Control Strategies
Control and management strategies adopted and standard industry practices are proven to be effective and comply with legislative requirements.
Sensitivity to Change of Assumptions
Not likely to change.

7.3.4 Proposed Environmental Outcome and Measurement Criteria

Operational	
Proposed Outcome	Outcome Measurement Criteria
No disturbance to Aboriginal or European Heritage sites, objects or remains unless prior approval under the relevant legislation is obtained.	<p>Quarry Management Logbook demonstrate that, upon discovery within the tenements of any possible European and/or Aboriginal heritage sites; and/or objects or remains;</p> <ul style="list-style-type: none"> Work ceased until the relevant authorities were notified and work recommenced only once authorisation was received. Documented evidence of potential or actual finds of European and/or Aboriginal heritage objects and evidence of consultation with the relevant authority.

7.4 Weeds, Pests and Plant Pathogens

7.4.1 Context

Weeds, pests and plant pathogens are discussed in **Section 2.8 Vegetation, Weeds, Pests and Plant Pathogens**. Pests (fauna) are discussed in **Section 2.9 Fauna**.

The land has historically been used for agricultural purposes including grazing (sheep) and is affected by weed species that are typical of disturbed grazing land. Desktop searches on a number of recognised databases have confirmed fifteen WoNs and five (5) declared weed species that have been recorded within five (5) km of the Site. There are no records of economically significant plant pathogens within the proposed MPLA area or adjacent land holdings.

7.4.2 Impact Assessment

Quarry Phase	Potential Impact Event			
Operational	Introduction of declared weed or pest species, or plant pathogens as a result of the development activity during operation.			
Impact (ID)	Source	Pathway	Receptor	Confirmation of the source pathway and receptor (Y/N)
W1	Plant, equipment, and light vehicles.	Movement of plant, equipment, light vehicles, and trucks spreading weeds.	Overburden landform and onsite vegetation.	Yes.
Uncertainty and Assumptions		Fifteen Weeds of National Significance (WoNs) and five (5) declared weed species have been recorded to potentially occur within five (5) km of the Site. Frequency of heavy vehicle movements from offsite could result in weed propagules being brought onto the Site. The presence of weed species within the Site may change depending upon seasonal variations and climatic conditions.		
Sensitivity to Change		Sensitivity to change is low.		
Justification for the Confirmation / non-confirmation of Source, Pathway and Receptor		Quarry Sites and areas by their nature contain much exposed soil that is often prone to weed infestation.		

7.4.3 Control and Management Strategies

Control and Management Strategies – Operational
<ul style="list-style-type: none"> Controlling weed infestations to prevent further spread of weeds. Minimising land disturbance at any one (1) time (maintaining ground cover for as long as possible). Annual weed spraying campaigns throughout the Site and rehabilitated areas, with additional spraying campaigns undertaken if necessary. Appropriate training provided to Site employees to recognise existing and potential weeds present onsite and within the surrounding areas to ensure weeds are not inadvertently brought onto the Site via items contaminated by seed, through vehicles, machinery, hand tools, overburden material, soil). Site haul routes should be maintained in a weed-reduced state to lessen the potential spread via vehicle movements. Established roads and tracks are to be used whenever possible and weed-infested areas are to be avoided.

<ul style="list-style-type: none"> • Restrict vehicle traffic movement in rehabilitation areas. • Implementation of progressive rehabilitation (as soon as practical). • Weed control mechanisms may include separate stockpiling and burial of contaminated material at depth (greater than one (1) metre), herbicide spraying of stripped overburden, or disposal as fill of soil materials infested with weeds.
Uncertainty and Assumptions of Control Strategies – Operational
Declared weed and pest species will be controlled through regular inspections and implementation of controls.
Sensitivity to Change of Assumptions – Operational
Weeds and pest controls are well established and prove to be effective where implemented.

7.4.4 Proposed Environmental Outcome and Measurement Criteria

Operational	
Proposed Outcome	Outcome Measurement Criteria
No introduction of new weeds or pests, including plant pathogens at the Site as a result of the development activities.	Records of annual photographic monitoring undertaken in Spring, are held by the operator to demonstrate no introduction of new weeds, pests or plant pathogens and no increased abundance of weeds, pests or plant pathogens in the land when compared to previous assessments.

Closure	
Proposed Outcome	Outcome Measurement Criteria
Weed composition and density within rehabilitated landform equivalent too, or less than, adjacent landscapes.	Inspection of Site undertaken by a suitably qualified person confirms weed composition and density within rehabilitated landform is equivalent too, or less than that of adjacent landscapes.

7.5 Topsoil Management

7.5.1 Context

Section 2.3 Topsoil and Subsoil provides a description of the existing topsoils and subsoils within the Site. Topsoil within the footprint of the overburden stockpile area will be stripped prior to the placement of overburden. Temporary stockpile of topsoil material is expected to be stored on the adjacent quarry for the purposes of rehabilitation.

Topsoil and subsoil are identified as suitable or unsuitable for use in rehabilitation before works commence and good quality topsoil is stored in areas where it can be accessed for Site rehabilitation to respread on finished batters

Topsoil stockpiles are not to exceed three (3) m in height to maintain viability of microorganisms and seed within the stockpiles.

Ongoing visual assessments (annual) of topsoil cover occurs onsite to confirm that there is sufficient growth medium spread on terminal areas of revegetation.

A portion of the Site will be progressively filled with overburden material through the implementation of Staged development plans designed to achieve the final landform as outlined in **Section 3.3.2 – Sequence of Quarrying and Progressive Rehabilitation**. The final landform will be progressively covered with a combination of topsoils and other suitable soils from the northern quarry that are deemed to be suitable for supporting plant growth.

Ongoing visual assessments of topsoil cover occurs onsite to confirm that there is sufficient growth medium spread on terminal areas for vegetation.

7.5.2 Impact Assessment

Quarry Phase	Potential Impact Event			
Operational	Failure to strip, stockpile and conserve topsoils and subsoils in an efficient and effective manner for intended re-use in rehabilitation.			
Impact (ID)	Source	Pathway	Receptor	Confirmation of the source pathway and receptor (Y/N)
S1	Quarry development.	Soil stripping activities.	Landform.	Yes.
Uncertainty and Assumptions		Future development of the QDP's will require topsoil stripping. Topsoils are likely to be shallow throughout the Quarry footprint.		
Sensitivity to Change		Unlikely to change.		
Justification for the Confirmation / non-confirmation of Source, Pathway and Receptor		It is reasonable to expect that the source, pathway and receptor exist in the form of a map during the final land formation of the bund.		

Quarry Phase	Potential Impact Event			
Site Closure	Insufficient application of topsoil on progressively rehabilitated landforms resulting in failed rehabilitation.			
Impact (ID)	Source	Pathway	Receptor	Confirmation of the source pathway and receptor (Y/N)
S2	Disturbed land.	Rehabilitation activities.	Post quarrying landform, onsite vegetation.	Yes.
Uncertainty and Assumptions		Development of the QDP's will require topsoil stripping. Topsoils are likely to be shallow throughout the Quarry footprint.		
Sensitivity to Change		The availability of topsoil for incorporation within the future rehabilitation activities is dependent upon the extent of rehabilitation area to be covered.		
Justification for the Confirmation / non-confirmation of Source, Pathway and Receptor		Development of the Site requires the establishment of screening mounds and batters which are required to be rehabilitated.		

7.5.3 Control and Management Strategies

Control and Management Strategies
<p>Operational</p> <ul style="list-style-type: none"> • Placement of material to be infilled in reverse order i.e. overburden sub-soil material at the bottom of the landform preserving topsoil material for application to the final surface. • Topsoil obtained from the Site and / or northern quarry is considered as a suitable growth medium for reuse in rehabilitation of the final landform. • The topsoil will either be stockpiled until suitable re-contoured areas are available, or preferably be directly returned immediately across the areas to be rehabilitated. • Stockpiling of topsoil will not exceed a height of three (3) m and shaped (i.e. batters no greater than 3(V):1(H)). • Soil stockpiles are to be vegetated (e.g., grass seeded) to protected against erosion and weed infestation.

<ul style="list-style-type: none"> • Topsoil deemed unsuitable for re-use in rehabilitation is to be treated (i.e. weed control) prior to re-use and / or disposed of as overburden water material at depth (i.e. burial depth greater than one (1) m). • Erosion and drainage controls are to be integrated into soil stockpiles where possible to prevent erosion and saturation. • Compaction of topsoils by vehicles tracking over stockpiles should be avoided. • All topsoil stockpiles are to be regularly inspected and managed for weed infestation. <p>Closure</p> <ul style="list-style-type: none"> • Ensure soils are spread on rehabilitation areas to a sufficient depth to support vegetation growth. • Adherence with the final landform plan Drawing No. 1741.DRG.142R2 – PM 237 South Road Reserve Overburden Design.
<p>Uncertainty and Assumptions of Control Strategies</p> <p>There is a low degree of uncertainty and assumptions pertaining to the control and management strategies which are considered reasonable and industry standard practice.</p>
<p>Sensitivity to change of assumptions</p> <p>If the control and management strategies are not adhered to, the success and rate of the Site's rehabilitation may be affected.</p> <p>The availability of topsoil from the northern quarry for rehabilitation may affect the successful establishment of rehabilitation.</p>

7.5.4 Proposed Environmental Outcome and Measurement Criteria

Operational	
Proposed Outcome	Outcome Measurement Criteria
Ensure existing quality and quantity of soil is maintained and applied to rehabilitation areas for successful rehabilitation.	Annual inspection and recording of soil stockpiles at Site to confirm that: <ul style="list-style-type: none"> • Topsoil stockpiles do not exceed three (3) m in height • Vegetative cover is established. • Minimal erosion (e.g. rills, gullies) or other evidence of soil loss.
Closure	
Proposed Outcome	Outcome Measurement Criteria
Sufficient topsoil of suitable quality is applied in all rehabilitation works.	Inspection of the topsoil application is undertaken by suitably qualified personnel at the completion of each stage of quarry development confirming that topsoil is of suitable quality and application and sufficient to ensure long term establishment and success of vegetation.

7.6 Waste Management

7.6.1 Context

Section 3.4.3 Processing Wastes and **Section 3.4.4 Industrial and Domestic Wastes** provides a description of the waste types and proposed management within the Site. Waste generation within the Tenement area is limited to the management within the adjacent quarry. Waste generation within the Site is limited to the management of overburden (topsoils and subsoils) which is expected to be utilised to form a safe, stable and non-polluting landform.

Industrial and domestic wastes associated with the maintenance of a small number of HME will be serviced within the adjacent existing PM by the existing purpose-built workshop facility.

7.6.2 Impact Assessment

Quarry Phase	Potential Impact Event			
Operational	Soil and water contamination and caused by inappropriate storage, handling and disposal of wastes.			
Impact (ID)	Source	Pathway	Receptor	Confirmation of the source pathway and receptor (Y/N)
WM1	Commercial and industrial waste (i.e oils, tyres, etc.)	Spill to land.	Landform, groundwater, post operational land users.	No.
Uncertainty and Assumptions		<p>All waste will be managed within PM 237 to the northeast in accordance with the relevant approved process.</p> <p>Industrial wastes are typically associated with the maintenance of plant machinery associated with quarrying activities.</p> <p>Bulk waste receptacles for general (domestic) waste are located within PM 237 to the northeast and are collected regularly by a third-party contractor for disposal at an appropriately licenced facility.</p>		
Sensitivity to Change		Not likely to change.		
Justification for the Confirmation / non-confirmation of Source, Pathway and Receptor		Activities associated with waste generation and the handling, storage and use of processing waste are not proposed to occur within the Site, therefore there is no confirmation of the source.		

7.7 Visual Amenity

7.7.1 Context

The Site is situated on the western aspect of Sellicks Hill Range within the HFZ. Due to the elevated position of the MPLA area, development is expected to be visible to the general public situated to the west / south west of the Site.

The extent of which the proposed operations is expected to be visible in is discussed in **Section 2.14 Amenity**. The Site is visible by members of the greater public, such as the township of Sellicks Beach and commuters along Main South Road.

The proposed activity is likely to become more visible to road users travelling in a northerly direction on Main South Road, however the impact to road users at this location is considered of low impact due to the brief exposure timeframe to passing traffic before the topography slightly changes and the Site becomes revegetated.

Short-term visual impacts from operations within the proposed MPLA are expected during construction of the screening mound at the nearest sensitive receptor locations to the west of the Site. However, it is anticipated that visual impact will be reduced through progressive rehabilitation of the landform and establishment of vegetation during the course of development.

The short-term visual disturbance anticipated by the proposed activities is predominantly characterised as earthworks similar to that resulting from pre-existing activities for the construction of the screening mound for the adjacent PM and EML's. The degree of visual impact is not expected to significantly alter the scenery in the long-term, as rehabilitation works proposed include contouring the land to match into the surrounding topography and to provide a landform that visually in keeping with the surrounding landform and is appropriately vegetated.

There is no change proposed to alter the current land use or significantly alter the visual character of the Site.

7.7.2 Impact Assessment

Quarry Phase	Potential Impact Event			
Operational	Proximity to sensitive receptors and potential negative visual impact of operational activities upon surrounding residential dwellings.			
Impact (ID)	Source	Pathway	Receptor	Confirmation of the source pathway and receptor (Y/N)
VA1	Disturbed land.	External viewpoint.	Nearest sensitive receptor (dwelling) and road users.	Yes.
Uncertainty and assumptions		The potential visual impacts within the Site are located to the west and south.		
Sensitivity to change		The degree of visual impact may vary depending upon the aspects of the sensitive receptor and the presence of other topographic features and vegetation that may be present between the viewpoint and the Site.		
Justification for the confirmation / non-confirmation of Source, Pathway and Receptor		Visual impacts may occur due to the elevation position of the bund on the Site and proximity to sensitive receptors.		

Quarry Phase	Potential Impact Event			
Site Closure	Proximity to sensitive receptors and potential negative visual impact of operational activities upon surrounding residential dwellings.			
Impact (ID)	Source	Pathway	Receptor	Confirmation of the source pathway and receptor (Y/N)
VA2	Final landform.	External viewpoints.	Residents located to the west of the Site towards the coastline and roadusers.	Yes.
Uncertainty and Assumptions		The potential visual impacts associated with the Site are located to the west towards the coastline.		
Sensitivity to Change		The degree of visual impact may vary depending upon the particular aspect of the sensitive receptor and the presence of other topographic features and vegetation that may be present between the viewpoint and the Site.		
Justification for the Confirmation / non-confirmation of Source, Pathway and Receptor		Visual impacts may occur due to the elevation position of the bund area on the Site and the proximity of sensitive receptors.		

7.7.3 Control and Management Strategies

Control and Management Strategies	
Operational	
<ul style="list-style-type: none"> • Use of overburden as fill material in landform rehabilitation. • Adherence with Site development plans Drawing No. 1741.DRG.142R2 – PM 237 South Road Reserve Overburden Design. Sections, and commitments to Site end use considerations to provide a safe, stable and vegetated landform which is suitable for the intended future use of the land, such as sheep grazing. • Undertake progressive rehabilitation of terminal slopes through contouring and establishing vegetation as soon as possible. • Contouring the land into the natural ground surface. • Application of 150 mm of topsoil or other suitable growth material on terminal batters. • Revegetation planting with appropriate pasture grasses, indigenous grasses, shrubs and trees. • Creating a final landform that is structurally safe, stable and facilitates the proposed extraction land use. 	
Site Closure	
<ul style="list-style-type: none"> • Adherence with Drawing No. 1741.DRG.142R2 – PM 237 South Road Reserve Overburden Design and commitments to Site end use considerations within to provide a safe, stable and appropriately vegetated landform which is suitable for the lands intended for future use, such as sheep grazing. 	
Uncertainty and Assumptions of Control Strategies	
Visual impacts to the nearby EML 6552 will be reduced through this final landform of the MPLA, which will blend in with the surrounding landscape and will be visually softened with the establishment of vegetation.	
Sensitivity to change of assumptions	
The timing of the visual amenity improvements may vary depending on the establishment rates of vegetation on the final landform and the duration of quarrying activities on the EML 6552 towards the north of the Site.	

7.7.4 Proposed Environmental Outcome and Measurement Criteria

Operational	
Proposed Outcome	Outcome Measurement Criteria
The overburden dump/screening mound is constructed and revegetated as designed to integrate with the surrounding landscape.	Annual visual photo monitoring from photo location points (ref Drawing No. 1741.DRG.050R1 – Visual Assessment Map) along Main South Road (Cactus canyon and toward Sellicks Hill), from Sellicks and Aldinga suburban areas demonstrate that the overburden dump / screening mound is being constructed and revegetated as designed to integrate with the surrounding landscape.

Closure	
Proposed Outcome	Outcome Measurement Criteria
Final landforms are integrated with the surrounding landscape and acceptable to external stakeholders.	Upon completion of rehabilitation activities an independent expert report will verify that final rehabilitation has occurred as per the staged development plans and demonstrates that final landforms are integrated with the surrounding landscape and acceptable to external stakeholders or as agreed by the Mining Regulator.

7.8 Noise

7.8.1 Context

A review of the of the proximity of the proposed operations to residential dwellings identified the nearest sensitive dwellings identified the nearest sensitive receptor (dwelling) is located approximately 450 m north west of the Site on Wellington Avenue, in the township of Sellicks Beach.

Potential noise generating activities associated with the proposed operations within the Site are limited to earthworks, and HME movements (i.e. trucks, front-end loaders etc.). Potential nuisance noise impacts caused by HME movements are best managed through the adherence to the operating hours, outlined in **Section 3.3.5 Modes and Hours of Operations**. HME is regularly maintained to minimise potential noise impacts.

Noise emissions are discussed in **Section 2.16 Noise** of this report and **Attachment 5 – Noise Measurement Report** which concluded that noise levels monitored from the nearest sensitive receptor on the adjacent operating quarry were compliant with the relevant noise criteria for the day and night-time assessment periods. Therefore, the risk of noise emissions generated from onsite activities resulting in nuisance at nearby sensitive receptors is considered to be low.

The noise monitoring undertaken is in consideration of the adjacent quarry and represents a very conservative assessment of noise generating activities undertaken with the MPLA as the noise generating activities will be limited to the transport and placement of overburden material only.

7.8.2 Impact Assessment

Quarry Phase	Potential Impact Event			
Operational	Potential for nuisance noise emissions generated by operational activity to negatively impact on sensitive receptors (residents).			
Impact (ID)	Source	Pathway	Receptor	Confirmation of the source pathway and receptor (Y/N)
N1	Noise generated from onsite machinery (including front-end loader, excavators, etc.)	Air	Nearest sensitive receptor (dwelling) located on Wellington Avenue.	Yes
Uncertainty and Assumptions		<p>Noise measurements were collected for all operations within the adjacent quarry, which includes activities that will not be required within MPLA i.e. crushing and screening, drilling and blasting, etc.</p> <p>Noise generating activities within the MPLA will be limited to the transport and placement of overburden with HME and maintenance activities for the rehabilitation.</p> <p>Operations within the MPLA are not expected to be continuous and placement of overburden will occur during overburden stripping campaigns throughout the year.</p>		
Sensitivity to Change		Due to the separation distance between the source and potential receptors, the sensitivity range is low. Impacts on sensitive receptors may be influenced by seasonal variations to onsite climatic conditions, such as cloud cover and wind direction.		
Justification for the Confirmation / non-confirmation of Source, Pathway and Receptor		It is reasonable to expect that there could be a source, pathway and receptor.		

7.8.3 Control and Management Strategies

Control and Management Strategies
<ul style="list-style-type: none"> • Operations shall adhere to approved operating hours. • Equipment is to be maintained in accordance with the original equipment manufacturer's specifications. • Avoid unnecessary operation of plant and / or revving of engines, pumps and compressors (and shut down when not in use). • Manage vehicle speed to 40 km/h on internal access roads. • Complaints from neighbouring residents are recorded, investigated and responded to in a timely manner.
Uncertainty and Assumptions of Control Strategies
There is a low degree of uncertainty pertaining to the control and management strategies.
Sensitivity to Change of Assumptions
The sensitivity to change of assumptions is low based on current separation distances to sensitive receptors.

7.8.4 Proposed Environmental Outcome and Measurement Criteria

Operational	
Proposed Outcome	Outcome Measurement Criteria
No public nuisance impacts from noise generated by operations.	<p>Quarry records shall demonstrate that all noise related complaints are acknowledged within 48 hours and closed out within seven (7) days to the satisfaction of the regulator.</p> <p>In the event the additional control measures do not resolve the complaint to the satisfaction of the Mining Regulator, noise measurements may be undertaken in accordance with Part 3 of the Environment Protection (Noise) Policy 2007 at location agreed upon by the operator and regulator to verify compliance with Part 1 Section 5 – Indicative noise levels;</p> <p>Indicative noise levels: Noise criteria 56 dB(A) during day period of 7:00 am – 10:00 pm.</p>

7.9 Dust

7.9.1 Context

The Site is situated in a semi-rural location, surrounded by agricultural lands (sheep grazing) and low-density rural living with the nearest sensitive receiver located approximately 450 m from the western boundary of the MPLA on Wellington Avenue (CT 5505 / 756), in the township of Sellick's Beach.

Potential dust generating activities are limited to earthworks, overburden placement and transport of material. To assist in controlling dust emissions, the use of a water truck to dampen down exposed areas of potential dust emissions is proposed.

The Site utilises ADR units and cameras onsite to monitor dust and ensure compliance with the TARP and outcome and measurement criteria for the Quarry are met. The Site's DMP (v13) is currently under review with DEM and EPA, **Attachment 4 – Dust Management Plan** has been provided for reference of the Site's current management strategies.

Whilst no specific feedback on the MPLA was received, the Site as a whole receives dust complaints and the outcome and measurement criteria and control and management strategies have been drafted to align to the greater site's management practices.

7.9.2 Impact Assessment

Quarry Phase	Potential Impact Event			
Operational	Potential nuisance dust emissions generated by operational activity to negatively impact on sensitive receptors.			
Impact (ID)	Source	Pathway	Receptor	Confirmation of the source pathway and receptor (Y/N)
D1	Dust generated from onsite activities such as vehicle and HME movements, product handling and dry weather conditions.	Windblown.	Nearest sensitive receptor (dwelling) located 450 m north west of the Site on Wellington Avenue.	Yes.
Uncertainty and Assumptions		<p>The level of dust within the ambient environment is influenced by climatic conditions, such as wind, the time of the year and the surrounding agricultural and quarrying activities.</p> <p>Wind direction can vary dependant on the season and on time of day. Data obtained from BoM Climate Data Station 023373 indicates that the prevailing wind direction in the morning is northerly to north easterly, changing to westerly and south westerly in the afternoon. Uncertainty of this data is considered to be low.</p> <p>No crushing and processing will be undertaken within the Site.</p>		
Sensitivity to Change		Dust emissions from the Site may be influenced in changes to operational climatic conditions.		
Justification for the Confirmation / non-confirmation of Source, Pathway and Receptor		It is reasonable to expect that a source, pathway and receptor may exist.		

7.9.3 Control and Management Strategies

Control and Management Strategies
<ul style="list-style-type: none"> Regular watering of working areas by water cart to ensure emissions from the landform, haul routes and stockpiles are minimised. Undertake ongoing visual inspections of Site operations and monitoring of wind and weather forecasts (BoM) to determine days where increased dust suppression (watering) regime is required and / or particular activities likely to generate dust are to be avoided due to unfavourable weather conditions. Ensure water truck operation is increased when necessary and in drier climatic conditions. Cease dust generating activities during unfavourable weather conditions (e.g. overburden placement in extreme hot and particular wind conditions). Undertake progressive rehabilitation including the establishment of vegetation cover over the final landform to stabilise the soil surface and reduce potential dust emissions. Undertake overburden placement activities in accordance with the trigger action and response plan, within the Site's current DMP (or subsequently approved plan). Screening mounds to be seeded with grasses, assisting in the prevention of erosion.
Uncertainty and Assumptions of Control Strategies
The control and management strategies proposed are consistent with industry standard practices and are considered to provide reasonable and practical measures to prevent dust emissions. Based upon the proposed activities within the MPLA area, there is a low degree of uncertainty pertaining to the control and management strategies.

Sensitivity to Change of Assumptions

The sensitivity to change of assumptions is low based upon current separation distances to sensitive receptors.

7.9.4 Proposed Environmental Outcome and Measurement Criteria

Operational	
Proposed Outcome	Outcome Measurement Criteria
No public health and / or nuisance impacts from dust generated by quarry operations.	<p>Quarry Management Logbook demonstrates records of visual inspections and monitoring of wind and weather forecasts and response employed as per the Site's approved TARP within the Site's current Dust Management Plan.</p> <p>Dust related complaints acknowledged within 48 hours and closed out within seven (7) days to the satisfaction of the complainant or as agreed with the Regulator.</p> <p>In the event the additional control measures do not resolve the complaint to the satisfaction of regulator, air quality monitoring is to occur at locations, and using methods, as agreed with the Regulator, to demonstrate that PM10* levels are less than 50 µg/m³, when measured over a 24-hour period (midnight to midnight) as specified in the Environment Protection (Air Quality) Policy 2016.</p> <p>*Particulate matter with an aerodynamic diameter of 10 micrometres or less.</p>

7.10 Protection of Third – Party Property

7.10.1 Context

The Site is situated within a rural location surrounded by agricultural lands and the existing quarry to the north of the Site. The nearest residence is located approximately 450 m north west. The proximity to the nearest sensitive receptors is outlined in **Section 2.12 Proximity to Infrastructure and Housing**.

There is no known third – party infrastructure other than Main South Road located within the Site.

7.10.2 Impact Assessment

Quarry Phase	Potential Impact Event			
Operational	Proximity to third-party infrastructure and potential for operational activities (HME) to impact third-party property (including fire).			
Impact (ID)	Source	Pathway	Receptor	Confirmation of the source pathway and receptor (Y/N)
TPP1	Slashing and horticultural maintenance of vegetation and quarry operations.	Uncontrolled fire as a result of quarry related activities (maintenance etc.).	Adjacent properties (agricultural land holdings).	Yes.
Uncertainty and Assumptions		The potential impacts to third-party property are well understood based on observations and monitoring on the Quarry Site.		

Sensitivity to Change	Not likely to change.
Justification for the Confirmation / non-confirmation of Source, Pathway and Receptor	Whilst the operational areas are not located within immediate proximity to adjacent infrastructure, it is still possible that an impact event could occur as a result of maintenance activities within proximity to vegetation areas.

7.10.3 Control and Management Strategies

Control and Management Strategies
<ul style="list-style-type: none"> • No slashing activities on total fire ban days. • Fire-fighting equipment available. • Hot works activities (if required) onsite will be undertaken within the cleared quarry footprint away from vegetation. • No hot works (welding) during total fire ban conditions.
Uncertainty and Assumptions of Control Strategies
Control measures are considered standard practice for the Quarry industry and are proven to be effective in the prevention of potential impacts.
Sensitivity to Change of Assumptions
The proposed control and mitigation strategies are well known and effective and are not considered to be sensitive to change.

7.10.4 Proposed Environmental Outcome and Measurement Criteria

Operational	
Proposed Outcome	Outcome Measurement Criteria
No damage to third party infrastructure, including adjacent grazing lands and stock as a result of fire caused by quarry operations.	Quarry Management Logbook demonstrates that CFS access points (CFS locks on gates) are visually inspected monthly throughout the fire danger season and that availability of access is maintained. Records show that hot works are undertaken within designated areas in accordance with hot works permit (hot works were not undertaken during total fire ban days).

7.11 Native Fauna

7.11.1 Context

Native fauna is discussed in **Section 2.9 Fauna**. Due to the agricultural / quarrying nature of the area and the historical clearing that has taken place within the operational area of the Site, there is no significant habitat for wildlife, as well as no native vegetation present.

Due to the historical clearing of vegetation within the region, the Site is not considered to act as any linkage / habitat corridor to surrounding habitat areas and is not likely to have any effects on surrounding areas of native vegetation.

It is unlikely that rare or endangered native fauna species would use the Site as a refuge which is due to the high level of historical and ongoing disturbance. Some birds may utilise the Site as transient visitors only and as such, any potential impacts to native fauna are considered low.

7.11.2 Impact Assessment

Quarry Phase	Potential Impact Event			
Operational	Potential for native fauna becoming injured or killed by mobile machinery. Disturbance of animal habitat and harm occurring to native wildlife as a result of operations.			
Impact (ID)	Source	Pathway	Receptor	Confirmation of the source pathway and receptor (Y/N)
NF1	HME	Movement and collision between machinery and wildlife.	Fauna.	No.
Uncertainty and Assumptions		<p>The Site does not provide high value habitat for rare or endangered fauna species and so the presence of such species is unlikely.</p> <p>Some rare and endangered fauna species may occur in the airspace above the Site, such as EPBC listed migratory bird species (refer to Attachment 3 – Environmental Protection and Biodiversity Conservation Act 1999 Protected Matters Report). However, this may only be for foraging or transit and therefore, unlikely to be impacted by operations.</p>		
Sensitivity to Change		The presence of suitable habitat for rare and endangered species within the Site, operations are unlikely to change during the formation of the bund.		
Justification for the Confirmation / non-confirmation of Source, Pathway and Receptor		Based on the absence of suitable habitat for rare and endangered fauna species within the Site, operations at the Site are unlikely to result in impacts occurring to rare or endangered fauna species.		

7.12 Surface Water

7.12.1 Context

Section 2.7 Surface Water outlines that surface water from the adjacent quarry flow through the Site. The Site will have an overburden structure constructed on top and therefore a Sediment Basin has been designed on the lower contoured area to capture any sediment run off in the early stages of construction.

7.12.2 Impact Assessment

Quarry Phase	Potential Impact Event			
Operational	Heavy rainfall events causing contamination (sediment laden discharges) to downstream dams and waterways.			
Impact (ID)	Source	Pathway	Receptor	Confirmation of the source pathway and receptor (Y/N)
SW1	Disturbed land, surface water runoff.	Overland flow and disturbed area.	Adjacent land, receiving waterways.	Yes.
Uncertainty and Assumptions		Surface water catchment and associated landform has been researched and calculated based on average rainfall data.		

Sensitivity to Change	The volume, frequency and intensity of flows may change depending upon seasonal variations and climatic conditions.
Justification for the Confirmation / non-confirmation of Source, Pathway and Receptor	Due to the sloped topography of the Site, it is expected that any flood-level surface waters would exit the Site at an increased velocity and drain into the adjacent PM.

Quarry Phase	Potential Impact Event			
Site Closure	Heavy rainfall events causing contamination (sediment laden discharges) to downstream dams and waterways.			
Impact (ID)	Source	Pathway	Receptor	Confirmation of the source pathway and receptor (Y/N)
SW2	Final landform, surface water run-off.	Overland flow and rehabilitated surface areas.	Adjacent land and nearby waterways.	Yes.
Uncertainty and Assumptions		Surface water catchment and associated with the final landform has been researched and calculated based on average rainfall data.		
Sensitivity to Change		The volume, frequency and intensity of flows may change depending upon seasonal variations and climatic conditions.		
Justification for the Confirmation / non-confirmation of Source, Pathway and Receptor		Due to the sloped topography of the Site, it is expected that any flood-level surface waters would exit the Site at increased velocity and drain into the adjacent PM.		

7.12.3 Control and Management Strategies

Control and Management Strategies
<p>Operational</p> <ul style="list-style-type: none"> • Install stormwater drainage devices prior to disturbance, in progression with flow paths and in accordance with Site development plans. • Manage stormwater flows by use of preventative procedures such as using a perimeter bund, diversion banks or drains, containment, recycling, treatment and by use of corrective procedures such as maintenance, de-silting and revegetation of disturbed areas. • Undertaken progressive rehabilitation of disturbed areas to the extent practicable. • Stabilise permanent bunds to prevent erosion. • Regularly maintain settling dams (silt removal and re-use in rehabilitated area) in effective working order. • Recycle water collected in the Quarry sump / pit and sediment basins to the maximum extent practical (e.g. dust suppression, irrigation). • Check site discharge points and boundaries are visibly free of sediment and evidence of erosion. <p>Closure</p> <ul style="list-style-type: none"> • Adherence to the QDP's • Stabilise final landform with suitable vegetation cover to prevent erosion.
Uncertainty and Assumptions of Control Strategies
The control strategies nominated are known to effective and apply industry standards for the control and management of flood-level surface water.
Sensitivity to Change of Assumptions
The volume of surface water discharge from the Site may be subject to seasonal variation based upon climatic conditions.

7.12.4 Proposed Environmental Outcome and Measurement Criteria

Operational	
Proposed Outcome	Outcome Measurement Criteria
No contamination of potential receiving waterways (first order, second order watercourses tributary of unnamed creek, Sellicks Beach south east from Sellicks Hill) as a result of quarrying operations.	<p>Quarry records demonstrate that sediment basins are regularly maintained and free from excessive build up and functioning effectively. Overflow discharge points are regularly inspected following heavy rainfall events, visibly free of sediment or evidence of erosion.</p> <p>In the event that water must be discharged offsite, water will be monitored to demonstrate compliance with <i>The Australian and New Zealand Guidelines for Fresh and Marine Water Quality (Australian and New Zealand Environment and Conservation Council – ANZECC, 2000) default trigger values for lowland river ecosystems applicable to South Australia for turbidity (50NTU)</i>.</p>

Closure	
Proposed Outcome	Outcome Measurement Criteria
No contamination of potential receiving waterways (first order, second order watercourses tributary of unnamed creek, Sellicks Beach south east from Sellicks Hill) as a result of quarrying operations post completion.	Once prior to surrender a suitably qualified person will audit the Site and verify in a report that appropriate erosion and sediment control measures are in place to prevent contamination of potential receiving waterways (first order, second order watercourses tributary of unnamed creek, Sellicks Beach south east from Sellicks Hill in the long term).

7.13 Groundwater

7.13.1 Context

Groundwater is discussed in **Section 2.6 Groundwater**. A search on the SARIG identified that there are no water wells present directly on the Site, however there are three (3) water wells within close proximity to the Site. The groundwater levels are known to range between 14.98 and 31.11 mAHD. Groundwater will not be intersected due to operations on the Site are limited to surface work only.

7.13.2 Impact Assessment

Quarry Phase	Potential Impact Event			
Operational	Potential impacts (to quality and quantity) of groundwater caused by intersection of the water table (during excavation) resulting in potential reduction of the availability of water to surrounding land users.			
Impact (ID)	Source	Pathway	Receptor	Confirmation of the source pathway and receptor (Y/N)
GW1	Quarry development extraction depth.	Groundwater interception.	Potential bore users in close proximity to the Site.	No.
Uncertainty and Assumptions		Earthworks activities within the Site will be limited to stripping of topsoil and placement of overburden. There will be no deep excavations established within the Site.		

Sensitivity to Change	Seasonal variation in groundwater may occur, however it is unlikely to result in a significant variation in groundwater elevation that would result in impacts to the proposed operations. On this basis, the sensitivity to change if groundwater was to be intercepted is predicted to be low.
Justification for the Confirmation / non-confirmation of Source, Pathway and Receptor	No underground quarry extractions will be undertaken, therefore groundwater interception is highly unlikely.

7.14 Native Vegetation

7.14.1 Context

Historical land uses associated with agriculture and grazing have resulted in the Site area being previously cleared, resulting in no native vegetation remaining on Site. Much of the Site is degraded open grassland, consisting of more than 75 percent introduced pasture grasses.

Vegetation clearance will not occur to establish the overburden footprint and associated sediment basin infrastructure.

7.14.2 Impact Assessment

Quarry Phase	Potential Impact Event			
Operational	Clearance or damage to any native vegetation that was not initially discovered in the existing environment. If extraction activities occur, there is a potential that native flora may be damaged by clearing and stripping operations; or by being driven over by HME.			
Impact (ID)	Source	Pathway	Receptor	Confirmation of the source pathway and receptor (Y/N)
NV1	HME.	HME.	Native Vegetation.	No.
Uncertainty and Assumptions		There is no native vegetation reported on the Site.		
Sensitivity to Change		Abandonment of the Site after the final land formation may result in natural regeneration through seed dispersal which may become established, and potentially require approval under the <i>Native Vegetation Act 1991</i> .		
Justification for the Confirmation / non-confirmation of Source, Pathway and Receptor		Based on the low proximity to native vegetation, is reasonable to expect that no impacts are likely to occur.		

7.15 Caves

7.15.1 Context

There is no excavation predicted or proposed other than topsoil therefore risk of interception of a cave system is low.

Upon inspection there are no caves within the Site or nearby areas.

7.15.2 Impact Assessment

Quarry Phase	Potential Impact Event			
Operational	HME impacting cave system.			
Impact (ID)	Source	Pathway	Receptor	Confirmation of the source pathway and receptor (Y/N)
C1	Equipment disturbing caves.	Equipment within the MPLA area.	Cave sites.	No.
Uncertainty and Assumptions		While there is an absence of reported cave sites directly within the MPLA, it is possible that caves could exist that are not currently known about.		
Sensitivity to Change		Large-scale earthworks could result in cave sites being uncovered.		
Justification for the Confirmation / non-confirmation of Source, Pathway and Receptor		It is possible that unrecorded caves could be present within the Site.		

8. **Effective and Efficient Mining and Outcome Achievement Statement**

- There is a reasonable prospect that the land in respect of which the lease is sought could be effectively and efficiently mined.
- Based on the control strategies provided I consider that the environmental outcomes will be able to be achieved.
- We / I declare that the mineral resource or ore reserve (or both) has been appropriately identified and estimated.

9. Operator Capability and Compliance History

Adbri is the operator of the Site and forms part of the ASX 100 listed Adelaide Brighton Limited Company.

The adjacent quarry consists of two (2) EML's (5540 and 6552), and two (2) PMs (237 and 163). Adbri have operated the adjacent quarry for over 40 years producing construction materials.

The Site operates under the ABL Health, Safety and Environmental Policy.

The Site is subject to the requirements of the ADBRI Concrete and Aggregates Safety Management System (SMS). The SMS provides Health, Safety and Environment policies and procedures outlining standards relating to Work, Health and Safety and Environmental matters. The SMS outlines responsibilities, procedures and actions required of employees and contractors and is certified to AS/NZS ISO 9001:2008 Quality management systems and AS/NZS 4801:2001 Occupational health and safety management systems.

Site personnel are required to report any incident, accident, injury / near miss and / or third party complaints to their Manager / Supervisor as soon as possible after the occurrence. Incidents and complaints are submitted to management using the ADBRI Incident Report form to the Quarry Manager within 24 hours of the event. The incident is then entered into Cintellate (Online reporting system). Incidents are investigated and where necessary reported to Government Department.

Complaints are acknowledged within 48 hours and closed out within seven (7) days or as soon as reasonably practicable. Outcomes of investigations are typically provided to the complainant as soon as reasonably practicable.

The Quarry Manager is responsible for operations onsite with the support of the Quarry Operations Manager, Health and Safety staff, engineers and advisors. Regular review and auditing of the SMS by the Health, Safety and Environment (HSE) Manager and Quarry Manager ensures the Site complies with relevant legislative requirements and the objectives and criteria commitments made in this document.

Adbri has received one (1) Expiation Notice issued by the Environment Protection Authority (EPA) on the 07 July 2018 regarding operations within the Sellicks Quarry, a copy of the Notice has been provided separately to DEM as **Attachment 8 – Confidential – EPA Expiation Notice**.

10. Reference List

Bureau of Meteorology (2022), *BoM Climate Data Online* (Australian Government)
<http://www.bom.gov.au/climate/data/>

Bureau of Meteorology (2022), *BoM Groundwater Dependent Ecosystems Atlas* (Australian Government)
<http://www.bom.gov.au/water/groundwater/gde/map.shtml>

Environmental Protection and Biodiversity Conservation Act 1999 (2022), Protected Matters Search
<https://www.dcceew.gov.au/environment/epbc/protected-matters-search-tool>

Nature Maps (2022), *Enviro Data SA NatureMaps* (Department of Environment and Water)
<http://spatialwebapps.environment.sa.gov.au/naturemaps/?locale=en-us&viewer=naturemaps>

Plan SA (2022), *SA Property and Planning Atlas* (Sellick's Beach, 5174) <https://sappa.plan.sa.gov.au/>

SARIG (2022), *South Australian Resources Information Gateway*, Government of South Australia
<https://map.sarig.sa.gov.au/>

drawings



REV	DESCRIPTION	DATE	BY

Legend: Site South Area Mineral Claims Extractive Mineral Leases Private Mines All Road Linework	 PROJECT: Sellicks Hill Quarry CLIENT: Southern Quarries Pty Ltd	TITLE: Site Location Plan GROUNDWORK plus PH +61 3871 0411 WWW.GROUNDWORK.COM.AU	SCALE: 1:9,000 0 40 80 120 160 m DATE: 01 November 2022 PRINTED: 01 November 2022	DRAWING NUMBER: 1741.DRG.149 REVISION: MS DATUM: HORIZONTAL / VERTICAL / ZONE MGA / AHD / 54 EPSG:7854
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Data Sources:
 Photography:
 Cadastre: Data.sa.gov.au. Boundaries shown are indicative only.
 Elevation:
 Other: SARIG, 2022



REV	DESCRIPTION	DATE	BY
1	Updated orthophoto, dates and client name	2023/10/31	LD

Legend:

	South Area		MPLA Contours
	Private Mines		Watercourses
	MPLA Contours Labels		

Data Sources:
 Photography: Groundwork Plus Pty Ltd RPA Photogrammetry Survey, Captured 2023-10-03
 Topography: Groundwork Plus Pty Ltd RPA Photogrammetry Survey, Captured 2023-10-03
 Cadastre: Data sa.gov.au/Boundaries are Indicative only, not all boundaries shown
 Ecosystem: Other: SARIG, 2023

269000E



PROJECT: Miscellaneous Purposes Licence
 CLIENT: Abtri Quarries

TITLE: Topographic Map

GROUNDWORK plus

SCALE: 1:2,400
 (When Printed On A3)

0 10 20 30 40 m

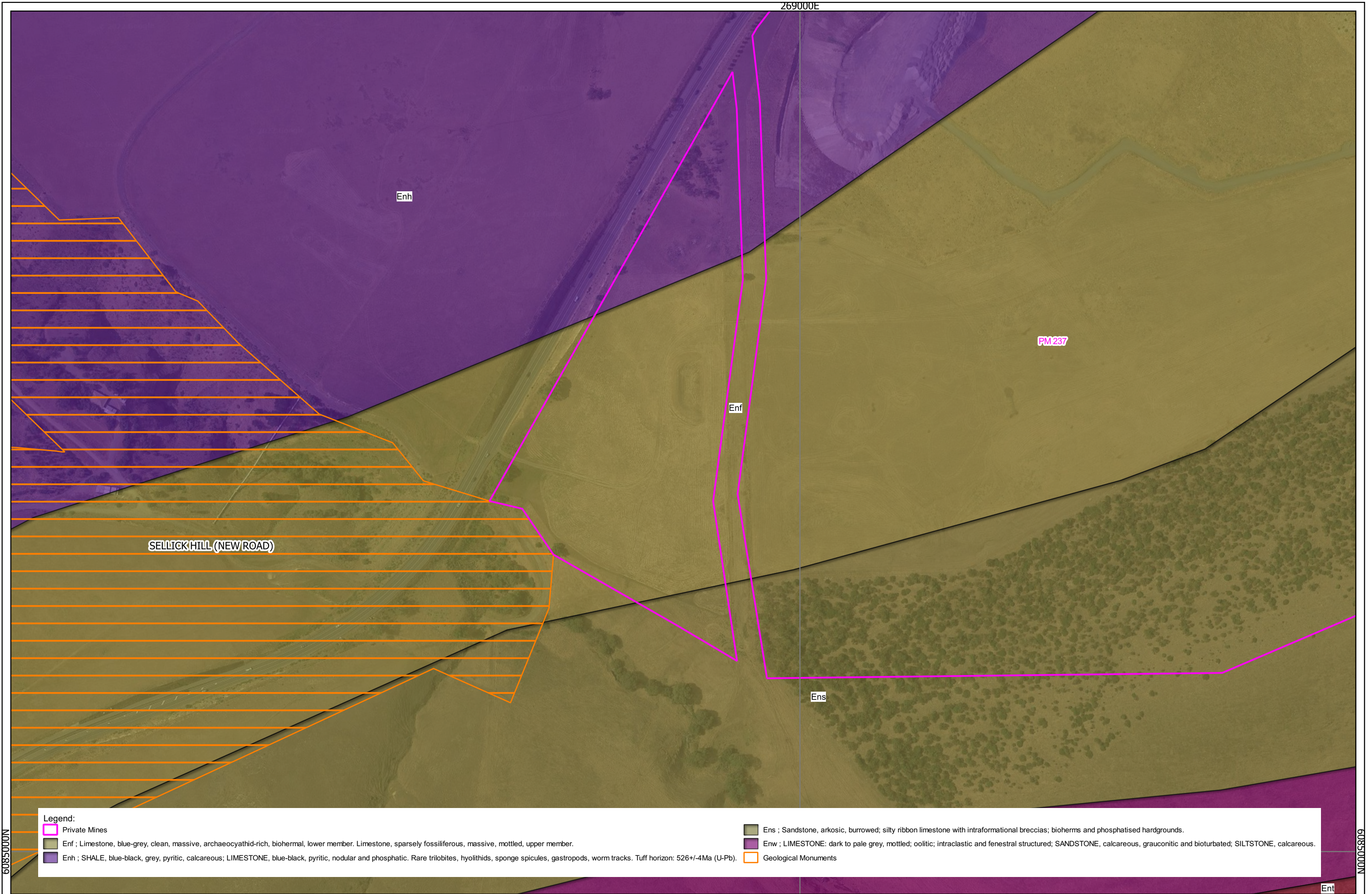
DRAWING NUMBER: 1741.DRG.140R1
 REVISION: 1

DATE: 01 November 2023
 PRINTED: 01 November 2023

DRAWN: LD
 CHECKED: JR

DATUM: HORIZONTAL / VERTICAL / ZONE
 MGA / AHD / 54

EPSG:7854



Legend:

- Private Mines
- Enf ; Limestone, blue-grey, clean, massive, archaeocyathid-rich, biohermal, lower member. Limestone, sparsely fossiliferous, massive, mottled, upper member.
- Enh ; SHALE, blue-black, grey, pyritic, calcareous; LIMESTONE, blue-black, pyritic, nodular and phosphatic. Rare trilobites, hyolithids, sponge spicules, gastropods, worm tracks. Tuff horizon: 526+/-4Ma (U-Pb).
- Ens ; Sandstone, arkosic, burrowed; silty ribbon limestone with intraformational breccias; bioherms and phosphatised hardgrounds.
- Enw ; LIMESTONE: dark to pale grey, mottled; oolitic; intraclastic and fenestral structured; SANDSTONE, calcareous, grauconitic and bioturbated; SILTSTONE, calcareous.
- Geological Monuments

REV	DESCRIPTION	DATE	BY

Data Sources:
 Photography: UAV Survey 2021-08-XX, Google Satellite Imagery accessed: 19-July-2022
 Topography: UAV Survey 2021-08-XX
 Cadastre: Data.sa.gov.au/Boundaries are Indicative only, not all
 Ecosystem: Other: SARIG, 2021



PROJECT: Miscellaneous Purposes Licence
 CLIENT: Adbri Quarries

TITLE: Local Geological Map

SCALE: 1:3,000
(When Printed On A3)





DATE: 19-July-2022 DRAWN: MS
 PRINTED: 19-July-2022 CHECKED: MJ

DRAWING NUMBER: 1741.DRG.138
 DATUM: HORIZONTAL / VERTICAL / ZONE: MGA / AHD / 54
 REVISION: EPSG:7854



REV	DESCRIPTION	DATE	BY

Legend:

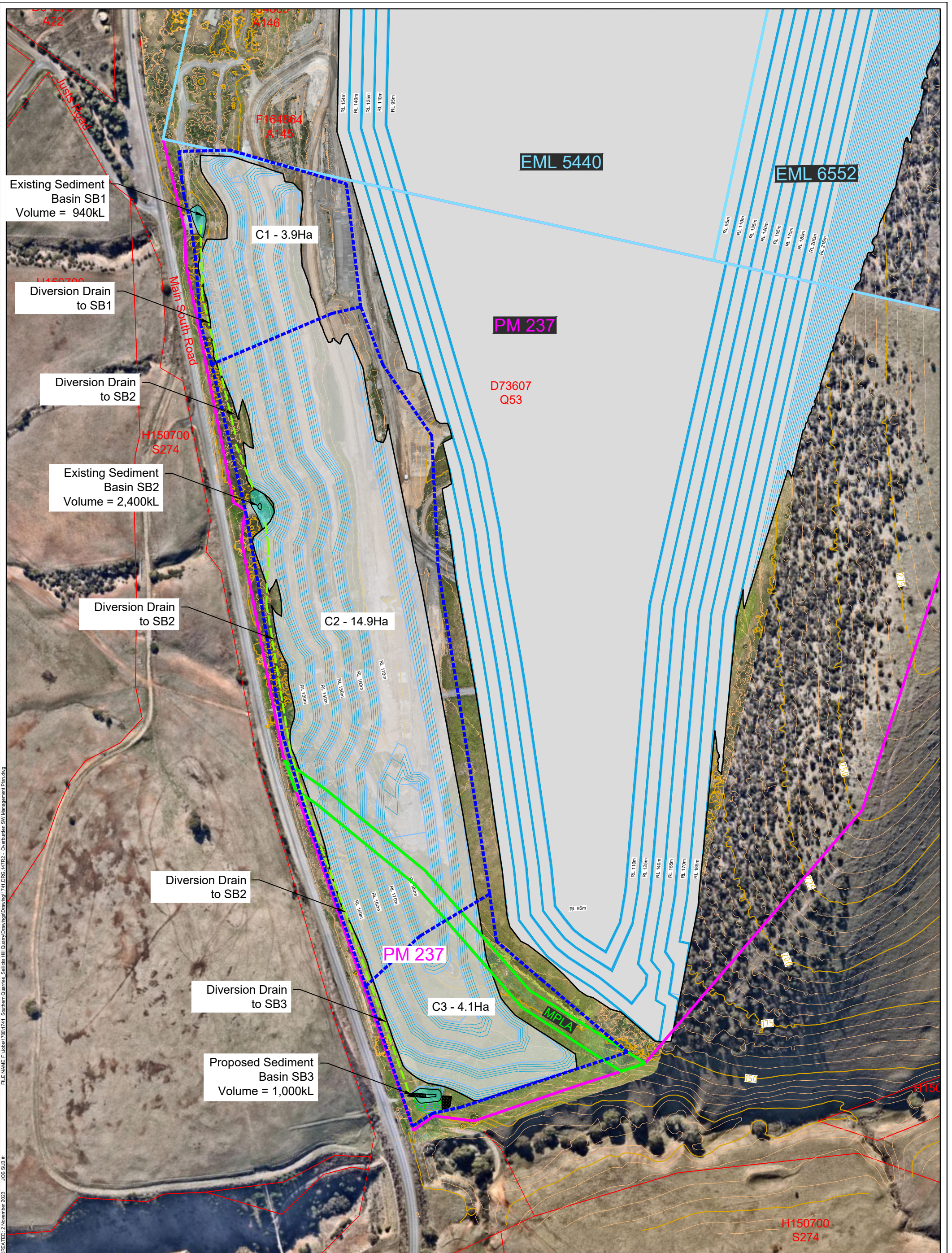
 Mineral Claims	 Private Mines
 Extractive Mineral Leases	 Water Wells

Data Sources:
 Photography: Cadastre
 Topography: Cadastre
 Boundaries: Indicative only, not all boundaries shown
 Ecosystems: SARIG, 2022



PROJECT: Sellicks Hill Quarry
 CLIENT: Southern Quarries Pty Ltd

TITLE: Groundwater Map		SCALE: 1:7,000 <small>(When Printed On A3)</small>	DRAWING NUMBER: 1741.DRG.150	REVISION:
GROUNDWORK plus		0 30 60 90 120 m	DATE: 03 November 2022	DRAWN: MS
PH: +61 3871 0411 WWW.GROUNDWORKPLUS.COM.AU		PRINTED: 03 November 2022	CHECKED:	DATUM: HORIZONTAL / VERTICAL / ZONE: MGA / AHD / 54



REV	DESCRIPTION	DATE	BY
2	Updated Client and Project, Updated Topography and Imagery	2023/11/02	CP

Legend:

- Cadastral Boundary
- Private Mine Boundary
- Extractive Minerals Lease
- MPLA

PROJECT: **Miscellaneous Purposes Licence**

CLIENT: **Adbri Quarries**

TITLE: **Overburden Stormwater Management Plan**

SCALE: 1:7,500

DATE: 2 November 2023

PRINTED: 2 November 2023

DRAWING NUMBER: 1741.DRG.147

REVISION: 2

DATUM: HORIZONTAL / VERTICAL / ZONE

GROUNDWORK plus

PH: +61 7 3871 0411

WWW.GROUNDWORK.COM.AU

FILE NAME: F:\Jobs\1741\1741.DWG - Distribution SW Management Plan.dwg
 CREATED: 2 November 2023
 JOB SUB #:

Data Sources:
 Photography: © Groundwork Plus Pty Ltd RPA Survey, Captured 2023-10-03
 Topography: © Groundwork Plus Pty Ltd RPA Survey, Captured 2023-10-03, DSM 1.5m
 Cadastre: © The Government of South Australia (DIT) 2021
 Ecosystem:
 Other: © 2021 Microsoft Corporation; © 2021 Maxar; © CNES (2021) Distribution Airbus DS
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 GROUNDWORK PLUS PTY LTD. ABN: 13 609 422 791



REV	DESCRIPTION	DATE	BY
	Updated dates and client name		

Data Sources:
 Photography: Google Satellite Imagery accessed 31 October 2023
 Topography: Cadastre: Data.sa.gov.au/Boundaries are Indicative only, not all boundaries shown
 Ecosystems: Other: SARIG, 2023

Legend:

- The Washpool/Wangknanangko
- South Area
- Conservation Areas and Reserves
- Site

PROJECT: Miscellaneous Purpose Licence
 CLIENT: Adbri Quarries

TITLE: Proximity to Conservation Areas Map

GROUNDWORK plus

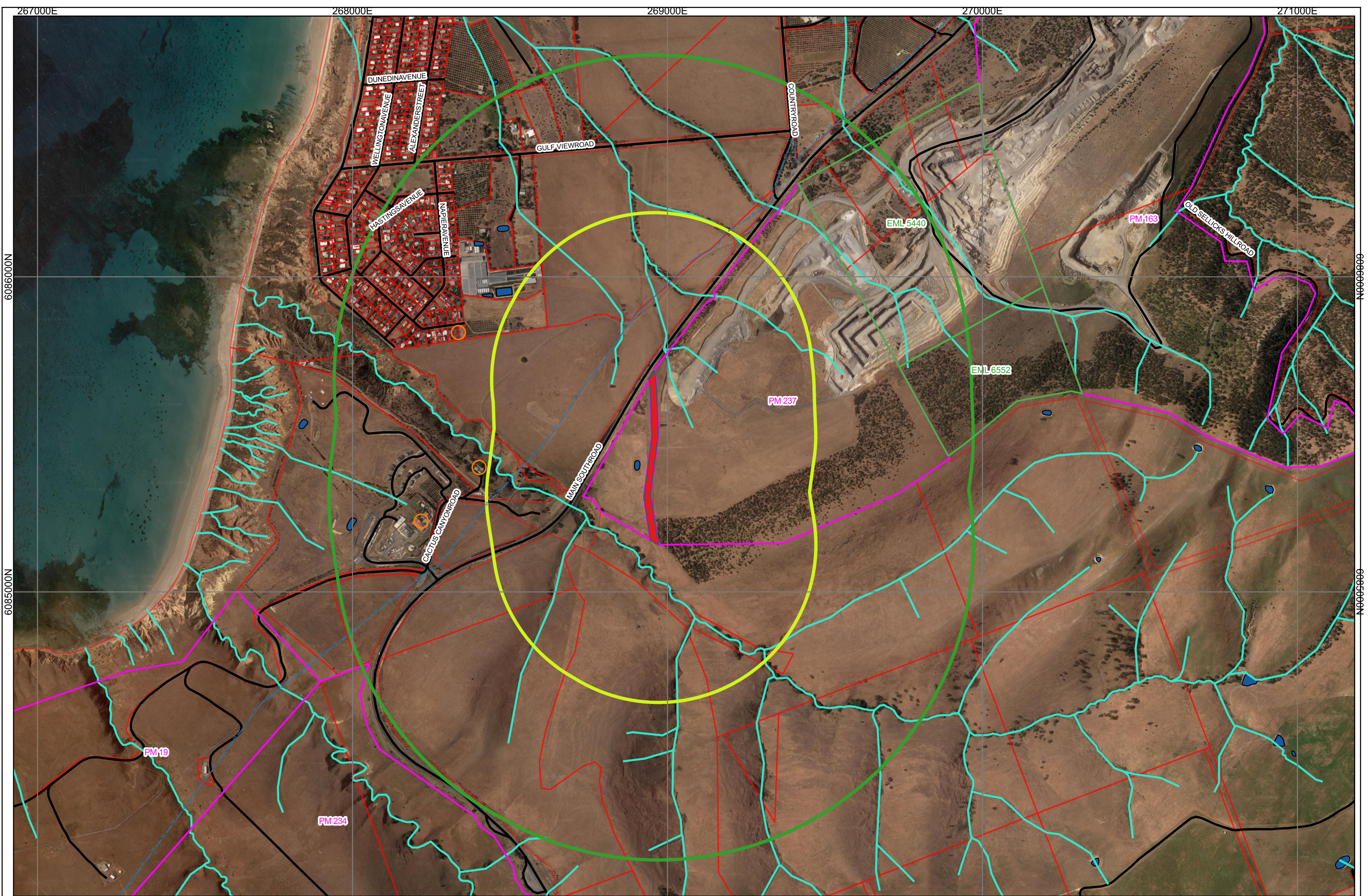
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DRAWING NUMBER: 1741.DRG.151
 REVISION: 1

DATE: 31-October-2023
 PRINTED: 31-October-2023

DRAWN: LO
 CHECKED: JR

DATUM: HORIZONTAL / VERTICAL / ZONE
 MGA / AHD / 54



REV	DESCRIPTION	DATE	BY

Legend:

■ South Area	 Sensitive Receptors	 Extractive Minerals Lease	 Waterbodies
— Water Mains	 500m Buffer	 Private Mines	 Roads
 1km Buffer	— Watercourses	 Cadastral Boundaries	

PROJECT: Miscellaneous Purposes Licence
 CLIENT: Abri Quarries

Land Access Map

SCALE: 1:11,000
 0 50 100 150 200 m

GROUNDWORK plus
 PH 481 3871 0411
 WWW.GROUNDWORKPLUS.COM.AU

DATE: 02 November 2023
 PRINTED: 02 November 2023

DRAWN: MS
 CHECKED: JR

DATUM: HORIZONTAL / VERTICAL / ZONE
 MGA / AHD / 54

DRAWING NUMBER: 1741.DRG.139
 REVISION: 1

Data Sources:
 Photography: Google Satellite Imagery accessed: 02 November 2023
 Topography: Cadastral: Data.sa.gov.au/Boundaries are Indicative only, not all boundaries shown
 Ecosystems: Other: SARIG, 2023

269000E

270000E

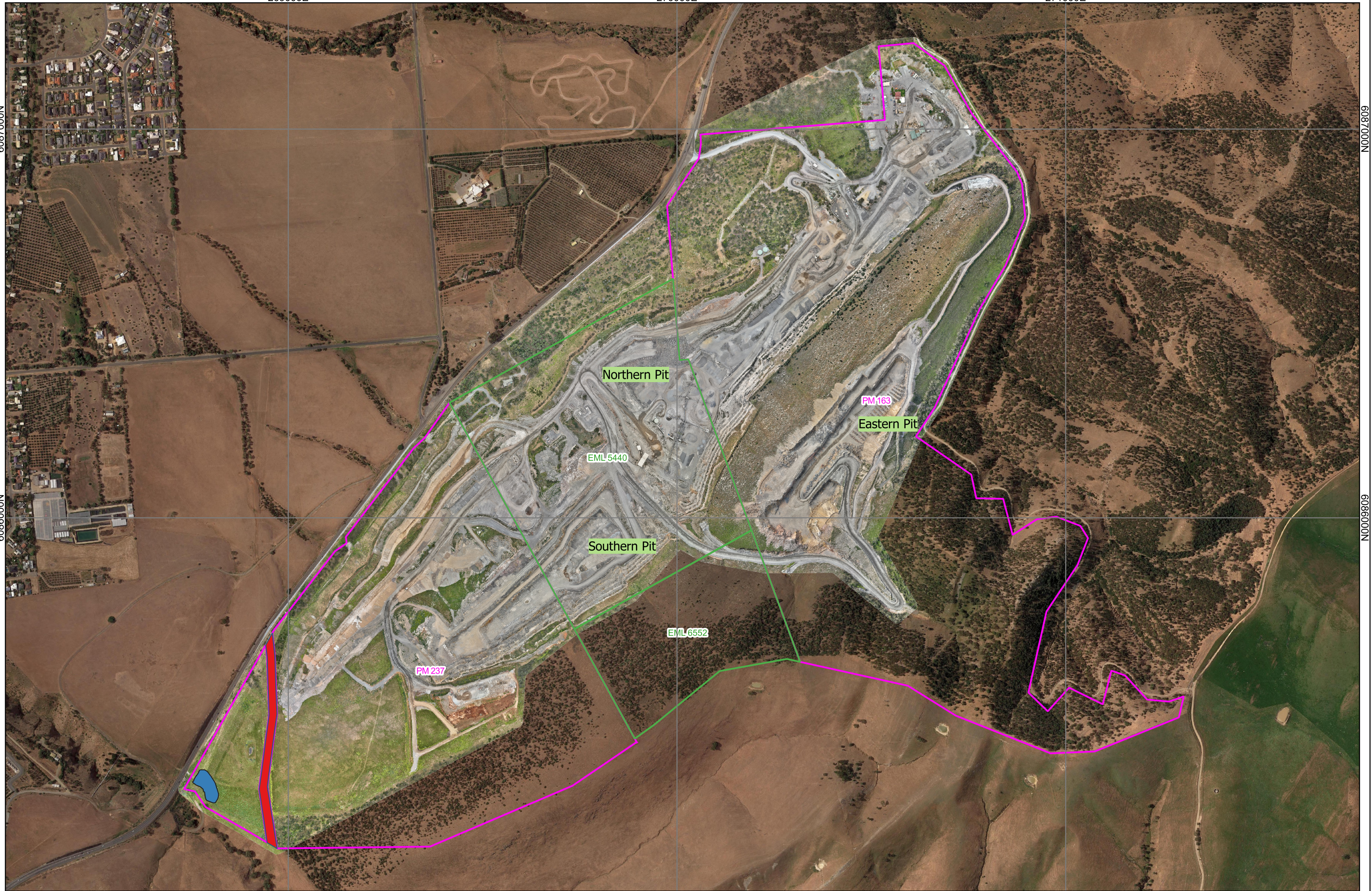
271000E

N0007000N

N0007000N

N0008000N

N0008000N



269000E

270000E

271000E

REV	DESCRIPTION	DATE	BY

Data Sources:
 Photography: Groundwork Plus Pty Ltd RPA Photogrammetry Survey, Captured 2023-10-03
 Topography: Groundwork Plus Pty Ltd RPA Photogrammetry Survey, Captured 2023-10-03
 Cadastre: Data.sa.gov.au/Boundaries are Indicative only, not all boundaries shown
 Ecosystems: Other: SARIG, 2023

- Legend:**
- South Area
 - Proposed Sediment Basin
 - Extractive Mineral Leases
 - Private Mines



PROJECT: Miscellaneous Purposes Licence
 CLIENT: Adbri Quarries

TITLE: Site Layout Plan - MPLA

GROUNDWORK plus

SCALE: 1:9,000
 (When Printed On A3)

0 40 80 120 160 m

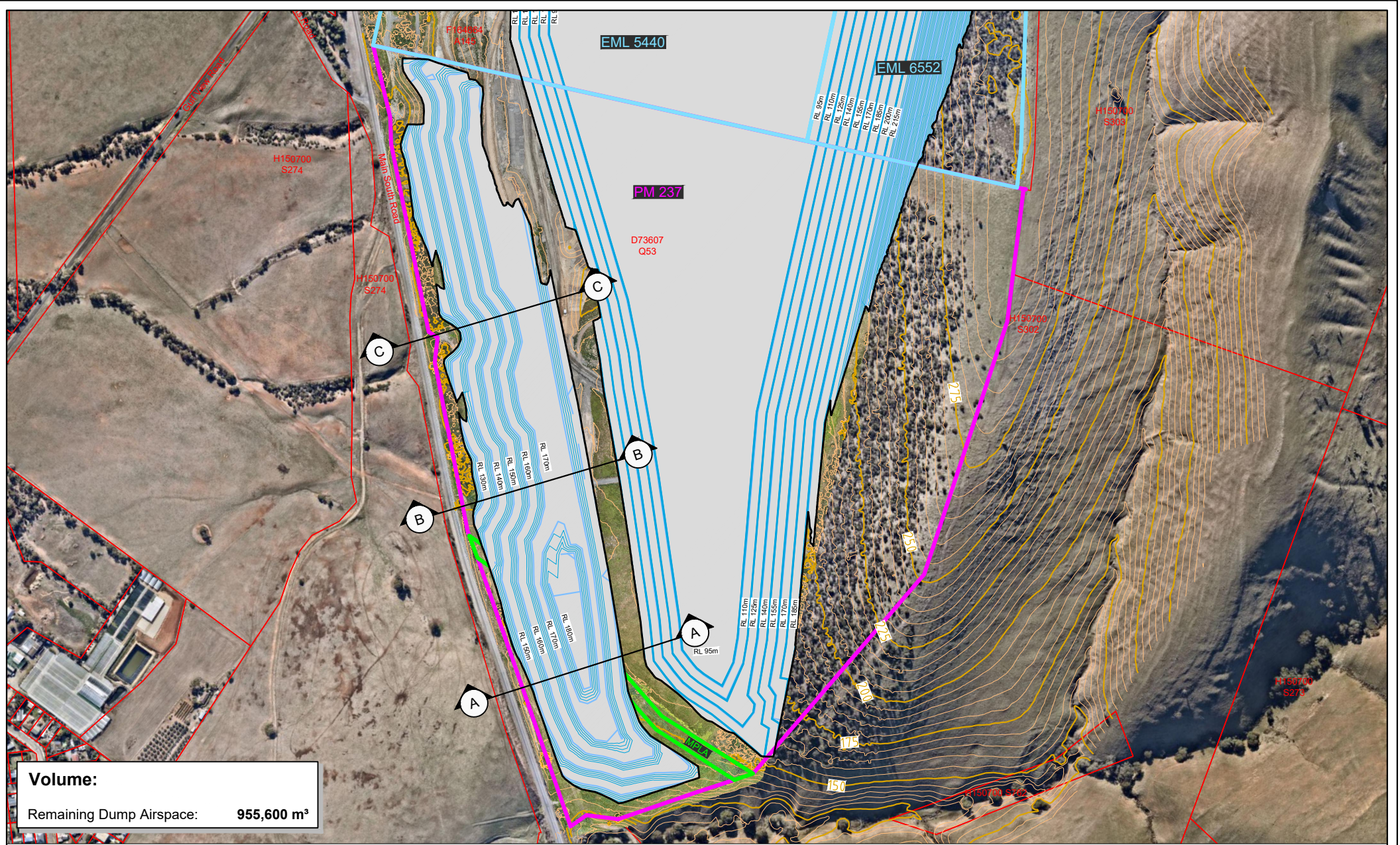
DRAWING NUMBER: 1741.DRG.160

DATE: 31-October-2023
 PRINTED: 31-October-2023

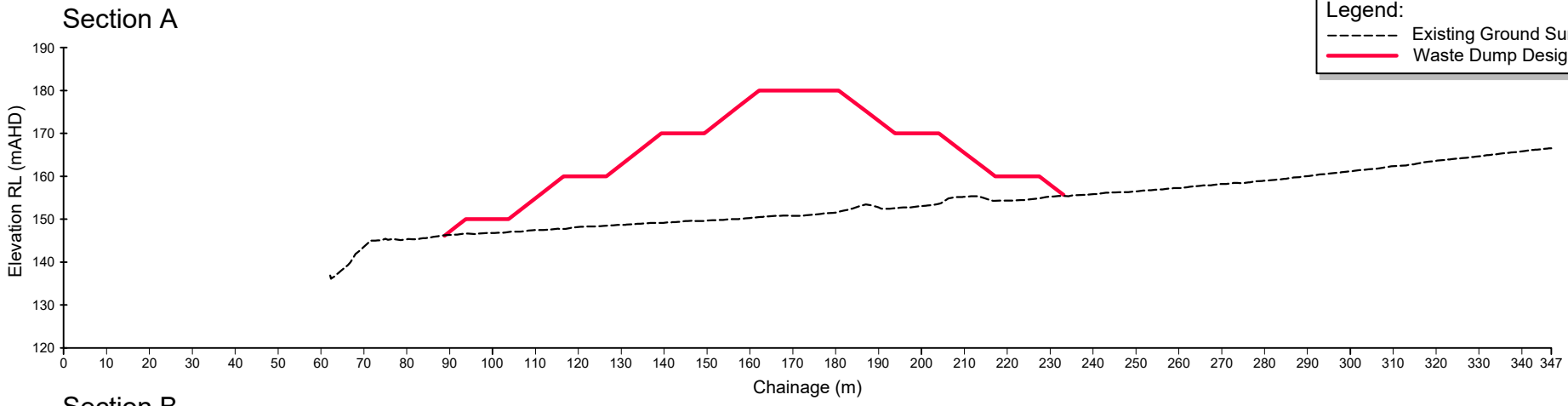
DRAWN: LO
 CHECKED: JR

DATUM: HORIZONTAL / VERTICAL / ZONE
 MGA / AHD / 54

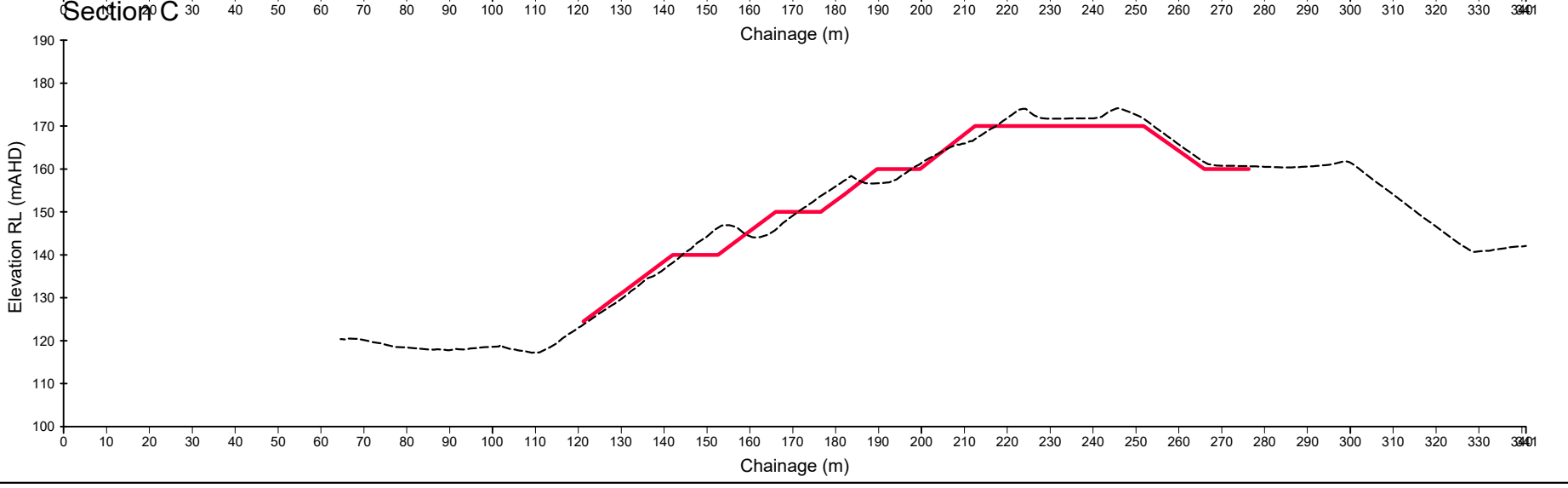
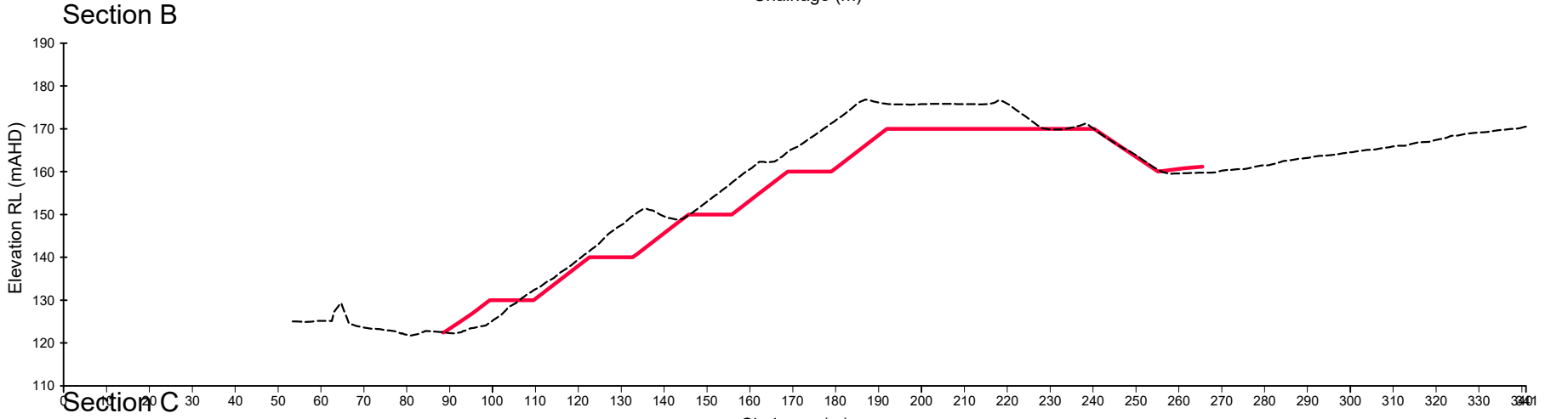
REVISION: EPSG:7854



Volume:
Remaining Dump Airspace: **955,600 m³**



Legend:
 - - - Existing Ground Surface
 - - - Waste Dump Design Surface



FILE NAME: F:\Jobs\1741\1741_Southern Quarries_Sales\H1\Quarry\Drawings\Dimen\1741_DRG_142R2 - PM 237 South Road Reserve Overburden Design.dwg
 CREATED: 2 November 2023
 JOB SUB #:

REV	DESCRIPTION	DATE	BY
1	Revised Overburden Storage Design	25-11-2022	JHV
2	Updated Topography, Updated Remaining Airspace, Updated Project & Client	02-11-2023	GP

Legend: — Cadastral Boundary — Private Mine — Extractive Minerals Lease — MPLA	PROJECT: Miscellaneous Purposes Licence CLIENT: Adbri Quarries	TITLE: PM 237 South Road Reserve Overburden Design GROUNDWORK plus PH: +61 7 3871 0411 WWW.GROUNDWORK.COM.AU	SCALE: 1:7,500 0 150m DATE: 2 November 2023 PRINTED: 2 November 2023	DRAWING NUMBER: 1741.DRG.142 REVISION: 2 DRAWN: JHV CHECKED: JR DATUM: HORIZONTAL / VERTICAL / ZONE GDA84 / MGA / AHD / 54
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1741 PEPR Site Visit GPS Data

Photo	Point Direction	Description
1	NE	Visual amenity photo point #1 - Main South Road (Cnr Cactus Canyon Rd viewed North East to Sellicks Hill)
2	S	Visual amenity photo point #2 - Sellicks Beach Road (viewed South)
3 & 4	SW	Visual amenity photo point #3 - Hart Road (Cnr Main South Road viewed South West)
5	S	Visual amenity photo print #4 - Main South Road (viewed South)
6	SW	Construction of visual amenity bund (viewed to South)



REV	DESCRIPTION	DATE	BY
1	Added EML 6552, Added MPLA	24/04/2024	CP

Data Sources:
 Photography: Groundwork Plus Pty Ltd RPA Survey, Captured 2022-04-22
 Topography: Cadastre
 Ecosystem: Other: © 2022 Nearmap, Captured 2022-03-22

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Legend:

- Cadastral Boundary
- Private Mine Boundary
- Extractive Mineral Lease
- Miscellaneous Purpose Licences Application
- Photo Location and Direction
- Mineral Claim Application Area

PROJECT: Sellicks Hill Quarry

CLIENT: Southern Quarries Pty Ltd

TITLE: Visual Assessment Map

SCALE: 1:20,000

DRAWING NUMBER: 1741.DRG.050

REVISION: 1

DATE: 24 April 2024

DRAWN: JHV

CHECKED: RH

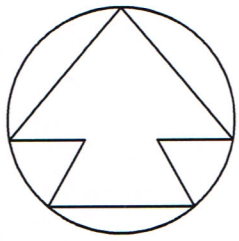
DATUM: HORIZONTAL / VERTICAL / ZONE

MGA / AHD / 54

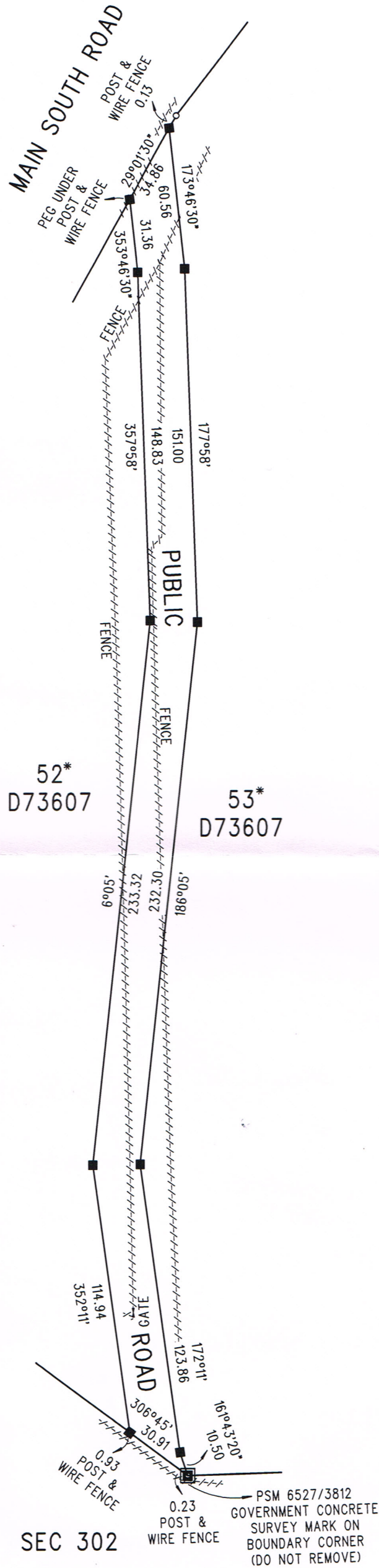
attachments

Attachment 1

Boundary Identification Survey

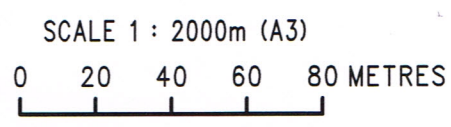


BOUNDARY
IDENTIFICATION
SURVEY



NOTE:
■ DENOTES PEG

DISTANCES SHOWN HEREON ARE IN METRES.
OFFSETS SHOWN TO REFERENCE MARKS, STRUCTURES OR FENCING
ARE EXAGGERATED FOR PURPOSES OF CLARITY AND NOT TO SCALE.



JOHN C BESTED & ASSOC PTY LTD
ABN 96 004 596 908
SURVEYING & PLANNING CONSULTANTS
362 MAGILL ROAD KENSINGTON PARK 5068
PHONE (08) 8332 7111
email surveyors@johnbested.com.au

LOCALITY : SELICKS HILL
PUBLIC ROAD BETWEEN PIECES 51 &
52 IN D73607
HUNDRED OF WILLUNGA

I hereby certify that I have surveyed
the above land on 05-03-21

A G Window
Licensed Surveyor

THIS IS NOT A CERTIFIED SURVEY FOR THE PURPOSES OF THE REGULATIONS
UNDER THE SURVEY ACT, 1992. THIS PLAN WILL NOT BE EXAMINED FOR
BOUNDARY DEFINITION OR OTHERWISE BY THE REGISTRAR-GENERALS OFFICE.
FUTURE RESURVEY OF ADJOINING LAND OR SUBSEQUENT REGISTRATION OF
CERTIFIED SURVEY PLANS MAY ALTER THE BOUNDARY DEFINITION OR
INFORMATION SHOWN HEREON.

THIS PLAN WAS PREPARED FOR THE EXCLUSIVE USE OF GROUNDWORKS PLUS
AND SHOULD NOT BE USED BY ANY OTHER PERSON OR CORPORATION.

REFERENCE No. 13751.33	DRAWING No. 13751.33-ID	VERSION No. 1
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Attachment 2

Windrose Data Analysis

Rose of Wind direction versus Wind speed in km/h (16 Feb 1955 to 31 Jul 2019)

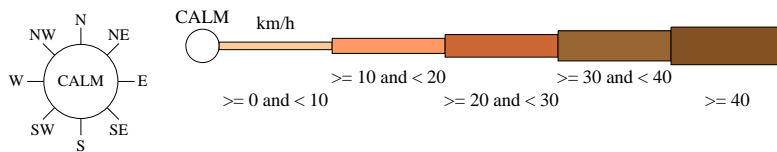
Custom times selected, refer to attached note for details

ADELAIDE AIRPORT

Site No: 023034 • Opened Feb 1955 • Still Open • Latitude: -34.9524° • Longitude: 138.5196° • Elevation 2m

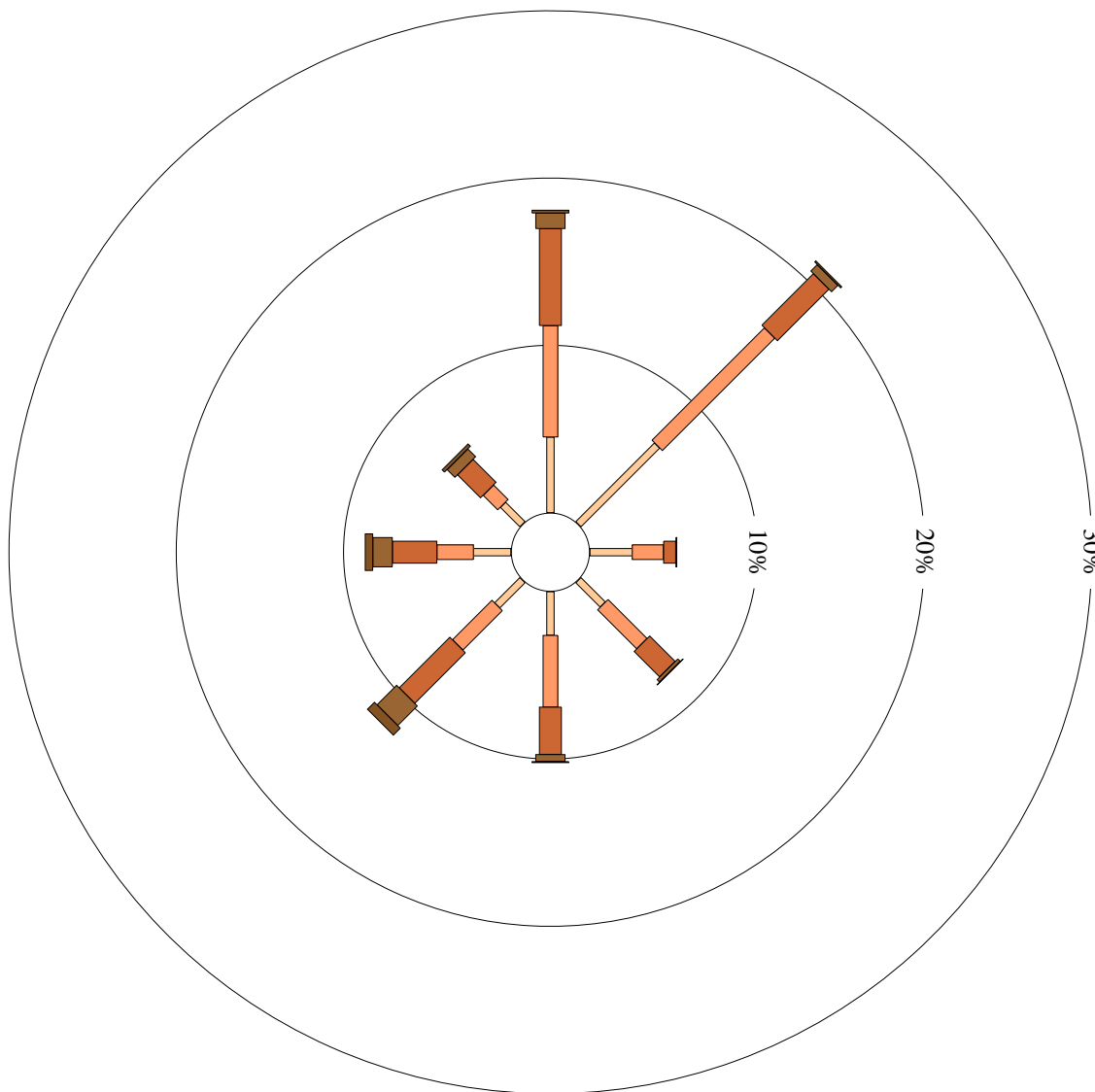
An asterisk (*) indicates that calm is less than 0.5%.

Other important info about this analysis is available in the accompanying notes.



9 am
25030 Total Observations

Calm 12%



Rose of Wind direction versus Wind speed in km/h (16 Feb 1955 to 31 Jul 2019)

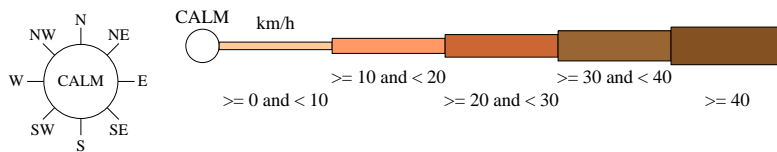
Custom times selected, refer to attached note for details

ADELAIDE AIRPORT

Site No: 023034 • Opened Feb 1955 • Still Open • Latitude: -34.9524° • Longitude: 138.5196° • Elevation 2m

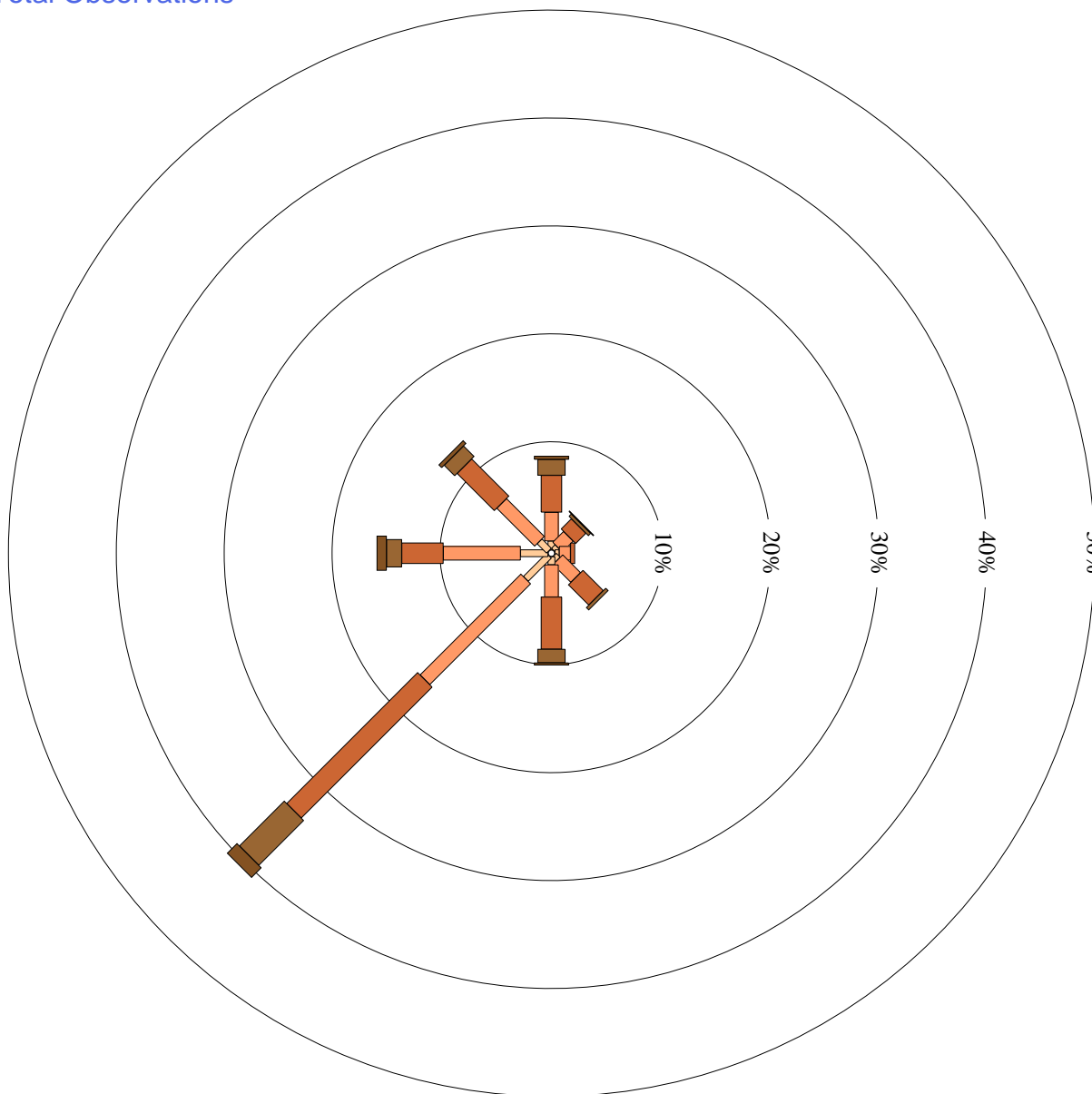
An asterisk (*) indicates that calm is less than 0.5%.

Other important info about this analysis is available in the accompanying notes.



3 pm
25013 Total Observations

Calm 1%



Attachment 3

Environmental Protection Biodiversity Conservation Act 1999 Protected Matters Report



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: 19-Jul-2022

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

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:	3
Listed Threatened Species:	59
Listed Migratory Species:	42

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

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 <http://www.environment.gov.au/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:	76
Whales and Other Cetaceans:	8
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:	2
Regional Forest Agreements:	None
Nationally Important Wetlands:	1
EPBC Act Referrals:	1
Key Ecological Features (Marine):	None
Biologically Important Areas:	6
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
Grey Box (<i>Eucalyptus microcarpa</i>) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community may occur within area	In buffer area only
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	In buffer area only
Swamps of the Fleurieu Peninsula	Critically Endangered	Community known to occur within area	In buffer area only

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			
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hylacola pyrrhopygia parkeri listed as Calamanthus pyrrhopygius parkeri Chestnut-rumped Heathwren (Mt Lofty Ranges) [67071]	Endangered	Species or species habitat may occur within area	In buffer area only
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within area	In buffer area only
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat known to occur within area	In feature area
Stipiturus malachurus intermedius Fleurieu Peninsula Southern Emu-wren, Mount Lofty Southern Emu-wren [26005]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Thinornis cucullatus cucullatus Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat known to occur within area	In feature area
Zosterops lateralis halmaturina South Australian Bassian Thrush, Western Bassian Thrush [67121]	Endangered	Species or species habitat likely to occur within area	In feature area
FISH			
Seriolella brama Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area	In buffer area only
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only
MAMMAL			
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area	In buffer area only
Isodon obesulus obesulus Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
PLANT			
Caladenia argocalla White-beauty Spider-orchid [54991]	Endangered	Species or species habitat may occur within area	In buffer area only
Caladenia tensa Greencomb Spider-orchid, Rigid Spider-orchid [24390]	Endangered	Species or species habitat likely to occur within area	In feature area
Calochilus cupreus Copper Beard Orchid [46998]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
Correa calycina Hindmarsh Correa [7226]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Dodonaea procumbens Trailing Hop-bush [12149]	Vulnerable	Species or species habitat may occur within area	In feature area
Eucalyptus paludicola Mount Compass Swamp Gum, Fleurieu Swamp Gum, Marsh Gum [64276]	Endangered	Species or species habitat may occur within area	In buffer area only
Euphrasia collina subsp. osbornii Osborn's Eyebright [3684]	Endangered	Species or species habitat may occur within area	In feature area
Glycine latrobeana Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hibbertia tenuis [76189]	Critically Endangered	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Olearia pannosa subsp. pannosa Silver Daisy-bush, Silver-leaved Daisy, Velvet Daisy-bush [12348]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Prasophyllum murfeti Fleurieu Leek Orchid [81621]	Critically Endangered	Species or species habitat likely to occur within area	In buffer area only
Prasophyllum pallidum Pale Leek-orchid [20351]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Senecio macrocarpus Large-fruit Fireweed, Large-fruit Groundsel [16333]	Vulnerable	Species or species habitat may occur within area	In feature area
Thelymitra epipactoides Metallic Sun-orchid [11896]	Endangered	Species or species habitat may occur within area	In feature area
Thelymitra matthewsii Spiral Sun-orchid [4168]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Veronica derwentiana subsp. homalodonta Mount Lofty Speedwell [82836]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
SHARK			
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area	In buffer area only

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
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea Sooty Shearwater [82651]		Species or species habitat may occur within area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area	In buffer area only
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Migratory Marine Species			
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area	In buffer area only
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Breeding known to occur within area	In buffer area only
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area	In buffer area only
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area	In buffer area only
Migratory Terrestrial Species			
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area
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
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Tringa nebularia Common Greenshank, Greenshank [832]		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 known to 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
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]		Species or species habitat may occur within area	In buffer area only
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]		Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to 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
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat known to occur within area overfly marine area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
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 likely to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]		Species or species habitat known to occur within area overfly marine 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 likely to occur within area	In feature area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In buffer area only
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat may occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Stercorarius skua as Catharacta skua Great Skua [823]		Species or species habitat may occur within area	In buffer area only
Sternula albifrons as Sterna albifrons Little Tern [82849]		Species or species habitat may occur within area	In buffer area only
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Thinornis cucullatus as Thinornis rubricollis Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area	In feature area
Thinornis cucullatus cucullatus as Thinornis rubricollis rubricollis Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area overfly marine area	In feature area
Fish			
Acentronura australe Southern Pygmy Pipehorse [66185]		Species or species habitat may occur within area	In buffer area only
Campichthys tryoni Tryon's Pipefish [66193]		Species or species habitat may occur within area	In buffer area only
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area	In buffer area only
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hippocampus abdominalis Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area	In buffer area only
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area	In buffer area only
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area	In buffer area only
Hypselognathus rostratus Knifesnout Pipefish, Knife-snouted Pipefish [66245]		Species or species habitat may occur within area	In buffer area only
Kaupus costatus Deepbody Pipefish, Deep-bodied Pipefish [66246]		Species or species habitat may occur within area	In buffer area only
Leptoichthys fistularius Brushtail Pipefish [66248]		Species or species habitat may occur within area	In buffer area only
Lissocampus caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area	In buffer area only
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In buffer area only
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In buffer area only
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area	In buffer area only
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area	In buffer area only
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area	In buffer area only
Solegnathus robustus Robust Pipehorse, Robust Spiny Pipehorse [66274]		Species or species habitat may occur within area	In buffer area only
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area	In buffer area only
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In buffer area only
Stipecampus cristatus Ringback Pipefish, Ring-backed Pipefish [66278]		Species or species habitat may occur within area	In buffer area only
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area	In buffer area only
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In buffer area only
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area	In buffer area only
Vanacampus poecilolaemus Longsnout Pipefish, Australian Longsnout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area	In buffer area only
Vanacampus vercoi Verco's Pipefish [66286]		Species or species habitat may occur within area	In buffer area only

Mammal

Scientific Name	Threatened Category	Presence Text	Buffer Status
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area	In buffer area only
Arctocephalus pusillus Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area	In buffer area only
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat likely to occur within area	In buffer area only

Reptile

Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only

Whales and Other Cetaceans

[[Resource Information](#)]

Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area	In buffer area only
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In buffer area only
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area	In buffer area only

Current Scientific Name	Status	Type of Presence	Buffer Status
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area	In buffer area only
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In buffer area only
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In buffer area only

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Aldinga Scrub	Conservation Park	SA	In buffer area only
Encounter	Marine Park	SA	In buffer area only

Nationally Important Wetlands		[Resource Information]
Wetland Name	State	Buffer Status
Washpool Lagoon	SA	In buffer area only

EPBC Act Referrals					[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status	
Not controlled action (particular manner)					
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area	

Biologically Important Areas			
Scientific Name	Behaviour	Presence	Buffer Status
Seabirds			
Eudyptula minor Little Penguin [1085]	Foraging (provisioning young)	Known to occur	In buffer area only

Scientific Name	Behaviour	Presence	Buffer Status
Sternula nereis Fairy Tern [82949]	Foraging	Known to occur	In buffer area only

Seals

Neophoca cinerea Australian Sea Lion [22]	Foraging (male)	Known to occur	In buffer area only
Neophoca cinerea Australian Sea Lion [22]	Foraging (male and female)	Known to occur	In buffer area only

Whales

Eubalaena australis Southern Right Whale [40]	Calving buffer	Known to occur	In buffer area only
Eubalaena australis Southern Right Whale [40]	Seasonal calving habitat	Known to occur	In buffer area only

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 are 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

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

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

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
- 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

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-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](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

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Attachment 4

Dust Management Plan



REPORT

Southern Quarries Dust Management Compliance Plan

Dust Management Plan

Submitted to:

Southern Quarries



Submitted by:

Golder Associates Pty Ltd

118 Franklin Street, Adelaide, South Australia 5000, Australia

+61 8 8213 2100

1529035-R-DMP-Rev13

5 October 2022



Distribution List

Environment Protection Authority

Record of Issue

Company	Client Contact	Version	Date Issued	Method of Delivery
Southern Quarries	M Close	00	17/06/16	Email
Southern Quarries	M Close	01	29/06/16	Email
Southern Quarries	M Close	02	22/09/16	Email
Southern Quarries	M Close	03	30/06/17	Email
Southern Quarries	M Close	04	26/07/18	Email
Southern Quarries	M Close	05	29/08/18	Email
Southern Quarries	M Close	06	5/03/19	Email
Southern Quarries	M Close	07	22/10/19	Email
Southern Quarries	M Close	08	05/12/19	Email
Southern Quarries	M Close	09	04/09/2020	Email
Southern Quarries	M Close	10	10/09/2020	Email
Southern Quarries	R Low	11	28/01/2022	Email
Southern Quarries	R Low	12	22/02/2022	Email
Southern Quarries	R Low	13	5/10/2022	Email

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APPENDICES

APPENDIX A

Community Engagement Plan

1.0 INTRODUCTION

Southern Quarries, a fully owned subsidiary of Adbri (formerly Adelaide Brighton Ltd), is an active limestone quarry located on Main South Road, Sellicks Hill, South Australia. Products generated on-site include:

- A large number of aggregate classes ranging from 3 mm in size up to 10 tonne rocks that are used in engineering projects.
- Three classes of road bases.
- Sand in a variety of sizes and gradings.
- Agricultural soil conditioner.

In recent years, Southern Quarries has invested in improving its sustainability, focusing on better water use, reducing carbon footprints in processes, operations and facilities, and trialling products to decrease the likelihood of generating dust.

With an ongoing commitment to improving sustainability on-site and for the broader community, this Dust Management Plan (DMP) highlights additional management measures and considerations that are aimed at improving air amenity in the community.

1.1 Purpose of the Plan

As holder of the South Australian Environment Protection Authority (EPA) Licence No. 2052, Southern Quarries is required to:

- Ensure environmental protection by implementing reasonable and practicable measures to reduce dust emissions.
- Manage the risks of environmental harm and supplement any measures already implemented.
- Demonstrate the use of reasonable and practicable management measures through a formal process.
- Ensure dust emissions from the premises are compliant with EPA legislation and best practice.

This Plan seeks to address the licence conditions and prevent environmental harm through formally addressing risks from the operations at Sellicks Quarry and identifying subsequent management actions to reduce these risks.

This document is owned and used on-site by Southern Quarries at the limestone quarry located at Sellicks Hill.

1.2 Legislative Context

This DMP has been prepared with reference to:

- South Australian ***Environment Protection Act 1993***.
- South Australian ***Environment Protection (Air Quality) Policy 2016***.
- South Australian *Mining Act 1971* which is enabled through an approved site-based program (Mine Operation Plan – MOP, updated in 2018).
- National Environment Protection (Ambient Air Quality) Measure (2015).
- World Health Organisation Air Quality Guidelines for particulate matter, ozone, nitrogen dioxide and sulfur dioxide 2005.

2.0 SELICKS QUARRY

2.1 Local Environment

Sellicks Quarry is within the Sellicks Hill Range in the City of Onkaparinga. The area is a semi-rural suburb of Adelaide. The local environment has been described in the MOP. Accordingly, only a brief summary is provided below.

Climate information has been collated using the Noarlunga weather station for rainfall and temperature for which data have been averaged between 2000 and 2020. Warmer temperatures (°C), low rainfall and high winds are experienced in summer months, whilst lower temperatures and high rainfall are experienced in winter months. Raw data for Noarlunga can be accessed via the BoM website. Wind speeds recorded in 2015 from Mount Terrible weather station are shown in Table 1 which demonstrates that it is generally windier with stronger gusts in the summer months.

Table 1: Average Winds and Gusts (in kmh-1) Recorded from Mount Terrible Weather Station (2015 data)

Month	Average Wind	Max Gust (3 sec)	Vector Average Wind Direction	Average Wind 0600 - 1800	Max Gust (3 sec) 0600 - 1800	Vector Average Wind Direction 0600 - 1800
Jan	25	86	152	24	86	151
Feb	27	84	147	24	72	149
Mar	15	98	164	14	67	180
Apr	20	66	149	20	66	150
May	14	76	286	14	63	299
Jun	13	58	103	13	58	80
Jul	13	73	308	13	73	311
Aug	15	78	192	15	78	209
Sep	14	60	154	13	60	185
Oct	18	73	137	16	67	128
Nov	17	71	156	16	71	166
Dec	18	67	142	14	66	145

* Arithmetic average of hourly values

Sellicks Hill Range dominates the topography, reaching elevations of 360 m. The range quickly drops elevation to 120 m at South Road over a distance of 1.4 km. From there, the elevation gradually decreases to 50 m over a distance of 1.4 km to coastal cliffs and sandy beaches.

The quarry and mining tenements intersect a number of ephemeral creeks that have small but deep valley catchments.

The groundwater, approximately 80 metres (m) below the current quarry floor, is considered to be variable in quality and generally suitable for stock water. Southern Quarries is unable to access groundwater from the Willunga Basin as it is prescribed under South Australia's *Landscape South Australia Act 2019* (which superseded the *Natural Resources Management Act 2004*). As a result, Southern Quarries has to rely upon mains potable water for dust suppression. Recycled water infrastructure capital expenditure, including secondary dosing for health considerations was implemented in early 2020. Recycled water is currently utilised on site for dust suppression activities and will reduce the reliance on potable water.

Topsoil varies considerably in depth from nil, where rock outcrops on the hills, to about 0.6 m depth on the creek banks.

Vegetation has been historically cleared to enable grazing, with little significant vegetation remaining on-site (as reported in the MOP). Revegetation plantings have occurred on the site, particularly on the screening 'amenity' mound that extends along the western boundary.

2.2 Site Activities

Southern Quarries operates continuously (i.e. 24 hours) under its approved MOP. However, the operating hours of the crushing plants are generally from 06:00am to midnight Monday to Friday and 06:00am to 12:00pm on Saturday and in accordance with market needs. These times do not include pre-start checks, maintenance of plant and equipment or development works which vary due to demand. Loading and distribution of materials can occur up to 24 hours a day.

Dolomite and dolomitic shale are extracted from the open cut quarry through blasting. Blasting techniques were reviewed in 2018 by an independent consultancy that specialises in blast management. The consultancy specialises in quarry, construction and mine drilling and blasting technical support and conducts Nationally Accredited training, endorsed by SafeWork SA for the unit "RIIBLA402D Monitor and control the effects of blasting on the environment".

There are currently three processing plants within the quarry, each with associated stockpiling areas. Mobile crushing plant is used within the quarry from time to time. These are identified in the facility layout (Figure 1). A concrete batching plant is on-site, as well as fuel storage and workshop facilities.

Mobile equipment at the site is detailed in Table 2. Southern Quarries mobile equipment will change from time to time in size and total number of machines. When contractors are used, they will bring their own plant and equipment to site.

Table 2: Existing Mobile Equipment at Sellicks Quarry

Mobile Equipment*	Unit Number(s)
Excavator (120t)	1
Quarry truck (65t)	4
Quarry truck (40t)	2
Front end loader (12t)	2
Front end loader (6t)	4
Grader	1
Skid Steer	1
Water spray truck	2



Figure 1: Existing Site Layout at Sellicks Quarry

2.3 Site Communications

Southern Quarries inducts all employees that work on-site. There are also regular tool box meetings held on-site. Information, particularly relating to weather predictions and anticipated dust control needs is transferred during daily prestart meetings. These records can be made available if required.

Southern Quarries management discuss all aspects related to the operations of the quarry including, but not limited to, ensuring hazards are checked and identified risks and prevention controls are discussed and communicated with relevant employees on the site. This includes an assessment of forecast meteorological conditions and the risks that these may present to daily operations.

2.4 Environmental Receptors

Southern Quarries has considered nearby residential and environmental receptors as potentially experiencing amenity impacts and nuisance dust.

Nearby potential receptors include:

- Residents of Sellicks Beach, approximately 1 km to the west and northwest of the site;
- Residents of Sellicks Hill, approximately 500 m north of the northernmost trafficable area of the site; and
- Two residences on Country Road, 400 m northwest of the site trafficable areas.

In addition, residential developments to the west of Main South Road are potential receptors of deposited dust.

No other environmental receptors were considered to have the potential for harm by dust. Figure 2 shows the location of receptors at 500 m intervals from the middle of the crushing plant.



- LEGEND**
- Existing Urban Development
 - Ongoing Urban Development
 - City of Onkaparinga

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1. Aerial image sourced from Nearmap Pty. Ltd, aerial dated 24.06.2019.
2. Base data sourced from DataSA, <https://data.sa.gov.au/>



REFERENCE SCALE: 1:14,209 (at A3)
 PROJECTION: GDA 1994 MGA Zone 54

CLIENT
SOUTHERN QUARRIES

PROJECT
SELICKS HILL QUARRY DUST MANAGEMENT PLAN

TITLE
QUARRY LOCATION

CONSULTANT	YYYY-MM-DD	2019-10-04
	PREPARED	KB
	DESIGN	-
	REVIEW	LVC
	APPROVED	-

Path: S:\enviro_hab\2019\1529035_Selicks_Hill_Quarry\Project\Deliverables\Production_Fig\1529035-TMP_R-FI001-RevB.mxd

25mm IF THIS REGISTRATION DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:

3.0 SELLICKS QUARRY ENVIRONMENTAL RISK ASSESSMENT

The environmental risk assessment (ERA) identifies Primary Risk Levels (PRL) of identified aspects without taking into account any design, management and mitigation measures that will be deployed by Southern Quarries.

The assessment, in accordance with leading practice, considers impacts during all stages of quarry operation (e.g. start-up, blasts, shut-down periods and traffic movements). Identification of the potential impact(s) is based on knowledge of the existing environment, activities to be undertaken at the quarry, experience with similar operations elsewhere and issues of concern to key stakeholders.

In undertaking the ERA, consideration has been given to avoidance, mitigation and/or management strategies that are technically and economically feasible and reflect Southern Quarries' commitment to minimising environmental impact and adopting an approach to the quarry operation that demonstrates best practice quarrying and environmental management.

The final component of the assessment involves describing the Residual Risk Level (RRL) associated with each of the identified aspects. This assessment assumes the effective implementation of the proposed design control and operational management measures.

The RRL is developed in the same way as the PRL by examining the potential consequences (measure of severity of environmental impact) and the likelihood that those impacts will occur.

3.1 Risk Assessment

The following definitions are provided for key risk assessment terms:

- **Likelihood:** the estimated probability or frequency of occurrence of an event over time (Table 3). Likelihood of occurrence has been largely based on experience of similar quarrying operations, but has considered additional activities associated with extractive industries.
- **Consequence:** the outcome or severity of an impact/event occurring (Table 4).
- **Risk:** a combination of the likelihood of an event occurring and the severity of outcome or consequence of the event (Table 5).

Table 3: Description of Likelihood

	Likelihood Criteria (read as either/or)
Almost Certain	The event will occur The event is of a continuous nature The likelihood is high
Likely	The event will probably occur during the life of the quarrying operation
Possible	The event could occur during quarrying operations, and is expected to occur
Unlikely	The event could occur during quarrying operations, but is not expected to occur
Rare	The event has almost never occurred in similar operations, but conceivably could occur

Table 4: Description of Consequence

Consequence Severity Rating	Element (read as either/or)		
	Social	Environmental	Economic and Legal
Insignificant	<ul style="list-style-type: none"> Not of concern to local or wider community No inquiries or complaints 	<ul style="list-style-type: none"> Possible impacts within the quarry boundaries and immediate environment but without noticeable consequence No impacts of consequence at local, regional or State level 	<ul style="list-style-type: none"> No costs or limited costs for rehabilitation or mitigation No breach of regulator standards or licences
Minor	<ul style="list-style-type: none"> Not of significant concern to local or wider community Isolated inquiries or complaints 	<ul style="list-style-type: none"> Some reversible impact within the quarry boundaries and immediate environment with no significant long-term changes May be rehabilitated or alleviated without outside assistance 	<ul style="list-style-type: none"> Cost for any rehabilitation is minor No breach of regulator standards or licences
Moderate	<ul style="list-style-type: none"> General local concern Multiple inquiries and/or complaints 	<ul style="list-style-type: none"> Significant changes within the quarry site boundaries with potential for long term change and remediation required Minor changes outside quarry boundaries that may be simply rehabilitated or alleviated with outside assistance 	<ul style="list-style-type: none"> Possible breach of legal obligations – inquiries and/or instruction from regulatory authorities
Major	<ul style="list-style-type: none"> Will attract significant public concern Widespread complaints and/or lobbying by representative groups 	<ul style="list-style-type: none"> Substantial and significant changes within and/or outside the quarry boundaries that can only be partially rehabilitated or alleviated Long-term consequences 	<ul style="list-style-type: none"> Major costs associated with rehabilitation / alleviation Serious breach of legal obligations – regular inquiries by regulatory authorities and penalties for non-compliance
Catastrophic	<ul style="list-style-type: none"> Major public outrage Deaths or widespread health and economic effects on public 	<ul style="list-style-type: none"> Extreme permanent changes to social or natural environment that cannot be practically or significantly rehabilitated or alleviated 	<ul style="list-style-type: none"> Major costs associated with rehabilitation / alleviation and penalties Major breach of legal obligations – continual involvement of regulatory authorities and legal investigation for non-compliance

Table 5: Qualitative Risk Matrix

			Likelihood of Consequence				
			E	D	C	B	A
			Rare	Unlikely	Possible	Likely	Almost Certain
Severity of Consequence	5	Insignificant	Low 5E	Low 5D	Low 5C	Moderate 5B	Moderate 5A
	4	Minor	Low 4E	Low 4D	Moderate 4C	High 4B	High 4A
	3	Moderate	Moderate 3E	Moderate 3D	High 3C	High 3B	Extreme 3A
	2	Major	High 2E	High 2D	Extreme 2C	Extreme 2B	Extreme 2A
	1	Catastrophic	High 1E	Extreme 1D	Extreme 1C	Extreme 1B	Extreme 1A

3.1.1 Dust Types and Sources

Dust emissions are made up of a combination of different particle size fractions. The size of the particle determines the selected management measures:

- **PM_{2.5}**: Particulate of an aerodynamic diameter of less than 2.5 micrometers (PM_{2.5}) is typically associated with human health effects. These particles are small enough to deposit in the lower respiratory tract where they can then enter the bloodstream. There is sufficient evidence to suggest that acute and chronic exposure to PM_{2.5} over long periods (years) can cause adverse health effects. Air Emissions from the Sellicks Quarry are dominated by mineral dust with particle sizes typically larger than PM_{2.5}. Therefore, particulate matter monitoring is focused on measurements of PM₁₀ and TSP.
- **PM₁₀**: Particulate of an aerodynamic diameter of less than 10 micron (PM₁₀) is typically associated with human health effects. These smaller particles are termed thoracic particles and tend to remain suspended in the air for longer periods. These particles are inhaled into the upper part of the airways and can penetrate down to the lungs. Further, if contaminated, these fine particles may pose a further health risk through absorption of the chemicals on the particles into the blood stream. Information obtained from the World Health Organisation (WHO) and United States Environmental Protection Agency (USEPA) indicates that numerous scientific studies have linked particle pollution exposure to a variety of health effects depending on chemical and physical properties.
- Particulate matter smaller than 10 micrometers in aerodynamic diameter includes PM_{2.5} as well as respirable particulate that can deposit in the nose, throat and upper respiratory tract. Since air emissions from Sellicks Quarry are dominated by mineral dust, measurements of PM₁₀ are used to assess potential human health effects related to particulate matter.
- **Total suspended particulates (TSP)**: is defined as particulate matter with aerodynamic diameters less than 50 µm and includes PM_{2.5} and PM₁₀. 'Dust' is typically defined as the difference between PM_{2.5} and TSP, with particles larger than PM₁₀ constituting nuisance dust that contributes to reduced visibility and the soiling of exposed surfaces. Sellicks Quarry measures PM₁₀ to evaluate the effectiveness of Southern Quarries dust management plan.

Sources of dust at the site include:

- Drilling and blasting.
- Crushing and screening, including at Start-up and Shut-down.
- Wind erosion, e.g. of stockpiles and the Western Mound.
- Wheel generated dust from truck and light vehicle movements.
- Loading and unloading.
- Excavators.
- Conveyors and transfer points.
- Track-out.

3.1.2 Risk Pathway and Primary Risk Assessment

The primary pathway for potential dust impacts on nearby receptors is for particulate matter from the site to be entrained into the air, either by disturbance or agitation by site plant activity (e.g. wheels, excavators etc.) or naturally by the wind, which may be transported under certain wind conditions across the site boundary to nearby receptors.

The means by which particulate matter from the site could potentially be entrained into the air are identified and discussed below together with an individual PRL assessment. In the current context, the *likelihood* of each of these sources impacting a nearby receptor(s) is greater when the prevailing winds are generally from the southeast. The *consequence* is considered to be related to the potential source strength, or the amount of dust that could be entrained into the air.

The primary risk level assessment is based on standard operational conditions of the site.

3.1.3 Controls and Residual Risk Level Assessment

A *control hierarchy* approach is followed in specifying controls to be put in place to reduce the likelihood and/or the consequence of dust from the site impacting nearby receptors. Continuous improvement will be sought across the site and across activities where practicable and economical.

Table 6: Control Hierarchy

Control	Description
Elimination	Remove the activity or equipment producing the risk.
Substitution	Substitute the activity or equipment producing the risk with another activity or equipment such that the risk is reduced or removed.
Engineering	Engineer a change in the activity or equipment producing the risk such that the risk is reduced or removed, e.g. enclose and isolate the activity or equipment.
Administration	Use procedures, training and rules to reduce the risk.
Protection	Protect the receptor(s) from the outcome of the risk, e.g. create a physical barrier between the activity or equipment and the receptor.

In considering controls for each risk, preference is given to *elimination* of the activity or equipment producing the risk, but where this is not practicable, *substitution* of that activity is considered, and so on.

Practicable controls for each of the sources are discussed within each table together with an individual RRL assessment. All staff have a responsibility to take action to manage dust sources and record the action(s) taken. Specifically, responsibilities for implementing the controls are assigned to:

- Southern Quarries Operational Management (OM);
- Quarry Manager (QM); and
- Site personnel (SP) and subcontractors (SC).

In addition to having topographic barriers to minimise the emission of dust off-site, a primary control for dust on-site during operation and shut-down periods is the use of dust suppressants / sealants and water (via automated water sprinklers). Southern Quarries use (for example) water and / or suppressants to control dust as a prevention application and as a suppression application. Prevention is the application of water and / or suppressants to prevent dust from becoming airborne. Suppression is the use of water and / or suppressants to wet dust particles which have already become airborne, increasing their mass and causing them to settle more rapidly.

3.1.3.1 *Dust from Drilling and Blasting*

Drilling and blasting mainly occurs in the Southern and Eastern zones of the quarry.

The drilling process is used to fragment the rock for subsequent blasting operations. Drilling and blasting activities are episodic in nature (i.e. once a week) and dust impacts are generally short term (i.e. for less than 30 minutes after a blasting event). Blasting can be considered a major source of dust and may occur every week. The emissions from drilling depend on the number of holes drilled per blast, while the emissions from blasting generally depend on the blast area.

Dust from blasting can sometimes be seen by the surrounding community. Southern Quarries engaged an independent Blast Specialist to assess the most appropriate ways to control dust from drilling and blasting. A proven method of control, which is used by some blasting operations located near residential areas, is to monitor weather conditions and only fire the blast when the prevailing winds are blowing away from sensitive receivers.

The independent review of blasting found the highest concentration of dust is due to the face-floor dust source. This source of dust can be reduced by wetting down the floor in front of the blast within 30 minutes of the firing event. This reduces/stops the dust associated with the floor from being mobilised into the air. However, the dust from the face will not be stopped. The watering down of blasts (direct application of water on top of the blast) prior to a blasting event is not recommended if using ANFO or Heavy ANFO bulk explosives, as this will alter densities of the bulk explosives and potentially cause a misfire.

Blasting at the quarry is booked in advance of the activity which causes difficulties when blasting needs to be postponed due to unfavourable prevailing winds. Preventing the dust drifting towards boundaries with a higher population of neighbours may be controlled by waiting for wind speeds and directions to be favourable, within practicable reason.

Leaving explosives in the ground overnight or for a period of days or weeks has inherent risks. The risks associated with delaying blasts to wait for improved prevailing winds include, but are not limited to, the following:

- Security of explosives;
- Animals chewing (cutting) initiation leads causing misfires;
- Moisture (rain and/or groundwater) desensitising bulk explosives causing a misfire or fume event;
- Fuel from bulk explosives ingressing into detonator downlines causing a misfire (generally applies to periods greater than a week);
- Restricted access to quarry while sleeping shots; and
- Potential productivity losses as broken rock is not available to quarry.

The primary risks and controls for drilling and blasting are identified in Table 7.

Table 7: Primary and Residual Risk Rating: Drilling and Blasting

Site Location	Impact	Primary Risk			Controls	Residual Risk		
		L	C	R		L	CC	R
Southern	Preparatory drilling causing localised dust that can be seen off-site	Likely (B)	Moderate (3)	High (3B)	Deliver training and inductions to all new employees and relevant site personnel to highlight the importance of dust control (OM); Forecast weather conditions are checked prior to drilling and deemed appropriate with respect to wind direction and speed (Meteorological and Visual TARP) (QM); Drilling undertaken by trained contractors and in accordance with Australian Standards (SC); All drills have dust collectors installed (SC); Water cart used in the drill area prior to drilling during dry and/or windy periods of drilling (SP).	Unlikely (D)	Minor (4)	Low (4D)
	Blasting causing episodic TSP and PM ₁₀ causing off-site nuisance	Likely (B)	Moderate (3)	High (3B)	Blasting will be performed by trained contractors and in accordance with Australian Standards AS2187.2-2006 (SC) Plan blasting activities for weekdays only (OM); Blasting will preferentially occur when weather conditions are favourable (e.g. early afternoons) and in accordance with the TARP (QM); Water cart to prewet as many surfaces as possible 30 minutes prior to firing events and as soon as possible after firing events in dry conditions (QM); Community notifications issued when blasting dust is likely to be visible (QM/OM); No visible blasting activity to occur when conditions are at TARP 3 Level (Easterly winds over 50km/hr) (QM/OM).	Likely (D)	Moderate (4)	Moderate (4D)
	Off-site health consequences from blasting	Possible (C)	Moderate (3)	High (3C)	Water cart used in the drill area prior to drilling during summer and/or dry windy periods of drilling (SP); Forecast weather conditions are checked and deemed appropriate with respect to wind direction and speed (QM).	Unlikely (D)	Minor (4)	Low (4D)
	Visible dust from blasting causing community concern	Almost certain (A)	Major (2)	Extreme (2A)	Blasting will preferentially occur when weather conditions are favourable (e.g. early afternoons) and in accordance with the TARP (QM); Blasting will be performed by trained contractors and in accordance with Australian Standards AS2187.2-2006 (SC); Water cart to prewet as many surfaces as possible 30 minutes prior to firing events and as soon as possible after firing events in dry conditions (QM); Community notifications issued for both visible and non-visible blast events (OM); Change TARP level if wind is between south (180°) to east (90°); No visible or non-visible blasting activity to occur when winds between south and east are greater than 30km/hr (QM/OM).	Almost certain (A)	Minor (4)	High (4A)

Eastern	Preparatory drilling causing localised dust that can be seen off-site	Likely (B)	Moderate (3)	High (3B)	Deliver training and inductions to highlight the importance of dust control (OM); Drilling undertaken by trained contractors and in accordance with the Australian Standard (SC); Water cart used in the drill area prior to drilling during dry and/or windy periods of drilling (SP); All drills have dust collectors installed (SC); Weather conditions are checked and deemed appropriate with respect to wind direction and speed (see Meteorological TARP) (QM).	Unlikely (D)	Minor (4)	Low (4D)
	Blasting causing episodic TSP and PM ₁₀ causing off-site nuisance	Possible (C)	Moderate (3)	High (3C)	Blasting will be performed by trained contractors and in accordance with Australian Standards AS2187.2-2006 (SC); Plan blasting activities for weekdays only (OM); Blasting will preferentially occur when weather conditions are favourable (e.g. early afternoons) and in accordance with the TARP) (QM); Water cart to prewet as many surfaces as possible 30 minutes prior to firing events and as soon as possible after firing events in dry conditions (QM); Community notifications issued when blasting dust is likely to be visible (QM/OM); No visible Blasting activity to occur when conditions are at TARP 3 Level (Easterly winds over 50km/hr) (QM/OM).	Unlikely (D)	Minor (4)	Low (4D)
	Off-site health consequences from blasting	Unlikely (D)	Moderate (3)	Moderate (3D)	Water cart used in the drill area prior to drilling during summer and/or dry windy periods of drilling (SP); Forecast weather conditions are checked and deemed appropriate with respect to wind direction and speed (QM).	Unlikely (D)	Insignificant (5)	Low (5D)
	Visible dust from blasting causing community concern	Almost certain (A)	Major (2)	Extreme (2A)	Blasting will preferentially occur when weather conditions are favourable (e.g. early afternoons) and in accordance with the TARP (QM); Blasting will be performed by trained contractors and in accordance with Australian Standards AS2187.2-2006 (SC); Community notifications issued when blasting dust is likely to be visible (QM/OM); Water cart to prewet as many surfaces as possible 30 minutes prior to firing events and as soon as possible after firing events in dry conditions (QM); No visible Blasting activity to occur when conditions are at TARP 3 Level (Easterly winds over 50km/hr) (QM/OM).	Almost certain (A)	Minor (4)	High (4A)

3.1.3.2 Wheel Generated Dust

Haul and access roads are used extensively in quarrying operations by mobile equipment to move material in and out of the quarry. The road network at a quarry is extensive over the entire property and the potential for dust generation is dependent upon the traffic patterns at the site.

The rate of the emission is dependent on several factors including:

- Vehicle kilometres travelled (VKT) – the amount of dust emitted is directly proportional to the distance a vehicle travels on unpaved surfaces. VKT refers to each type of vehicle.
- Vehicle weight – heavier vehicles generally have a greater potential to mechanically disturb particulate in the unpaved surface releasing it into the air. In general, they have more contact with the unpaved surface (larger and more numerous wheels).
- Vehicle speed – increased speed generally increases the potential to mechanically disturb particulate in the unpaved surface releasing it into the air.
- Surface physical properties (e.g. silt and moisture content) – the potential for dust generating is increased for greater silt content and lower moisture content.
- Meteorological conditions – the moisture content of an unpaved surface can be affected by ambient temperature, humidity, wind, incident solar radiation and rainfall.

The site is expected to be subject to multiple light and heavy vehicle movements due to its geographical location. The primary risks associated with on-site transport related to dust are identified below. Risk controls relevant to off-site dust generated by wheel movements are also discussed (Table 8).

Table 8: Primary and Residual Risk Rating: Wheel Generated Dust

Site Location	Impact	Primary Risk			Controls	Residual Risk		
		L	C	R		L	C	RR
Southern	Excavators, front end loaders and quarry truck movements creating dust that moves off-site	Likely (B)	Moderate (3)	High (3B)	Ensure speeds are safe and are minimised to suppress dust at all times (QM); Use of haul road dust suppressants (QM); Magnesium chloride used as a haul road dust suppression additive over the summer months and in response to environmental conditions, allowing for more efficient water cart utilisation and decreased water consumption (QM); Restrict traffic to roads that have a dust suppression treatment (QM); Daily visual assessment of vehicle routes. Re-route vehicles from problem areas (QM); Sprinklers and water cart/s deployed in summer and/or windy and dry conditions (SP); Water cart deployment prior to plant start-up procedures in summer and/or windy and dry conditions (SP); 30,000L capacity of both water carts to increase efficiency (OM) Use a skid steer (or grader) to remove accumulating material on roads as required (SP).	Unlikely (D)	Minor (4)	Low (4D)
	Occasional use of light vehicles in the Southern D&B generating dust that moves off-site	Possible (C)	Minor (4)	Moderate (4C)	Assessment of road surfaces to ensure they are in good working order (QM); Ensure speeds are safe and are minimised to suppress dust (QM); Restrict traffic to roads that have a dust suppression treatment (QM); Re-route vehicles from problem area (QM); Sprinklers and water cart/s deployed in summer and/or windy and dry conditions (SP). 30,000L capacity of both water carts to increase efficiency (OM)	Unlikely (D)	Minor (4)	Low (4D)
Eastern	Excavators, front end loaders and quarry truck movements creating dust that moves off-site	Likely (B)	Moderate (3)	High (3B)	Assessment of road surfaces to ensure they are in good working order (QM); Use of haul road dust suppressants (QM); Magnesium chloride used as a haul road dust suppression additive over the summer months and in response to environmental conditions, allowing for more efficient water cart utilisation and decreased water consumption (QM); Use a skid steer (or grader) to remove accumulating material on roads as required (SP). Ensure speeds are safe and are minimised to suppress dust (QM); Restrict traffic to roads that have a dust suppression treatment (QM); Re-route vehicles from problem area (QM); Sprinklers and water cart/s deployed in summer and/or windy and dry conditions (SP); Water cart deployment prior to plant start-up procedures in summer and/or windy and dry conditions (SP). 30,000L capacity of both water carts to increase efficiency (OM)	Unlikely (D)	Minor (4)	Low (4D)

Site Location	Impact	Primary Risk			Controls	Residual Risk		
		L	C	R		L	C	RR
	Occasional use of light vehicles in the Eastern D&B generating dust that moves off-site	Unlikely (D)	Minor (4)	Low (4D)	Assessment of road surfaces to ensure they are in good working order (QM); Ensure speeds are safe and are minimised to suppress dust (QM); Re-route vehicles from problem area (QM); Restrict traffic to roads that have a dust suppression treatment (QM); Sprinklers and water cart/s deployed in summer and/or windy and dry conditions (SP). 30,000L capacity of both water carts to increase efficiency (OM)	Unlikely (D)	Minor (4)	Low (4D)
Central Crushing	Front end loaders and quarry truck movements creating dust that moves off-site	Possible (C)	Minor (4)	Moderate (4C)	Ensure speeds are safe and are minimised to suppress dust (QM); Use of haul road dust suppressants (QM); Restrict traffic to roads that have a dust suppression treatment (QM); Re-route vehicles from problem area (QM); Sprinklers and a water cart deployed in summer and/or windy and dry conditions (SP); Water cart deployment prior to plant start-up procedures in summer and/or windy and dry conditions (SP); Use a skid steer (or grader) to remove accumulating material on roads as required (SP).	Unlikely (D)	Minor (4)	Low (4D)
	Use of light vehicles generating dust that moves off-site	Possible (C)	Minor (4)	Moderate (4C)	Assessment of road surfaces to ensure they are in good working order (QM); Ensure speeds are safe and are minimised to suppress dust (QM); Re-route vehicles from problem (QM); Restrict traffic to roads that have a dust suppression treatment (QM); Sprinklers and water cart/s deployed in summer and/or windy and dry conditions (SP). 30,000L capacity of both water carts to increase efficiency (OM)	Unlikely (D)	Minor (4)	Low (4D)
Northern	Front end loaders and quarry truck movements creating dust that moves off-site	Likely (B)	Moderate (3)	High (3B)	Ensure speeds are safe and are minimised to suppress dust (QM); Use of haul road dust suppressants (QM); Magnesium chloride used as a haul road dust suppression additive over the summer months and in response to environmental conditions, allowing for more efficient water cart utilisation and decreased water consumption (QM); Restrict traffic to roads that have a dust suppression treatment (QM); Re-route vehicles from problem area (QM); Sprinklers and water cart/s deployed in summer and/or windy and dry conditions (SP); 30,000L capacity of both water carts to increase efficiency (OM) Water cart deployment prior to plant start-up procedures in summer and/or windy and dry conditions (SP); Use a skid steer (or grader) to remove accumulating material on roads as required (SP); Use street sweeper on quarry entrance and South Road as required (QM);	Unlikely (D)	Minor (4)	Low (4D)

Site Location	Impact	Primary Risk			Controls	Residual Risk		
		L	C	R		L	C	RR
					Additional asphalt laid around weighbridge and visitor car park to decrease unsealed surfaces (OM).			
	Use of light vehicles generating dust that moves off-site	Possible (C)	Minor (4)	Moderate (4C)	Assessment of road surfaces to ensure they are in good working order (QM); Ensure speeds are safe and are minimised to suppress dust (QM); Re-route vehicles from problem area (QM); Restrict traffic to roads that have a dust suppression treatment (QM); Sprinklers and water cart/s deployed in summer and/or windy and dry conditions (SP); 30,000L capacity of both water carts to increase efficiency (OM) Additional asphalt laid around weighbridge and visitor car park to decrease unsealed surfaces (OM).	Unlikely (D)	Minor (4)	Low (4D)
Western Mound	Front end loaders and quarry truck movements creating dust that moves off-site	Likely (B)	Moderate (3)	High (3B)	Ensure speeds are safe and are minimised to suppress dust (QM); Use of haul road dust suppressants (QM); Magnesium chloride used as a haul road dust suppression additive over the summer months and in response to environmental conditions, allowing for more efficient water cart utilisation and decreased water consumption (QM); Restrict traffic to roads that have a dust suppression treatment (QM); Re-route vehicles from problem area (QM); Sprinklers and water cart/s deployed in summer and/or windy and dry conditions (SP); 30,000L capacity of both water carts to increase efficiency (OM) Use a skid steer (or grader) to remove accumulating material on roads as required (SP).	Unlikely (D)	Minor (4)	Low (4D)
	Occasional use of light vehicles generating dust that moves off-site	Unlikely (D)	Minor (4)	Low (4D)	Assessment of road surfaces to ensure they are in good working order (QM); Ensure speeds are safe and are minimised to suppress dust (QM); Re-route vehicles from problem area (QM); Restrict traffic to roads that have a dust suppression treatment (QM); Sprinklers and water cart/s deployed in summer and/or windy and dry conditions (SP); 30,000L capacity of both water carts to increase efficiency (OM) Additional asphalt laid around weighbridge and visitor car park to decrease unsealed surfaces (OM).	Unlikely (D)	Minor (4)	Low (4D)

3.1.3.3 *Dust from Loading and Unloading*

Aggregate loaded and unloaded by on-site haul trucks and off-site highway trucks have the potential to release dust into the air. The rate of emission is related to:

- Aggregate physical properties – the potential for dust generation is increased for finer materials with greater silt content and lower moisture content.
- Meteorological conditions – the moisture content of the aggregate can be affected by ambient temperature, humidity, wind, incident solar radiation and rainfall.

The primary dust risks associated with loading and unloading finer aggregates are addressed below for all meteorological conditions. Risk controls relevant to off-site dust generated by loading and unloading are discussed in Table 9.

Table 9: Primary and Residual Risk Rating: Loading and Unloading

Site Location	Impact	Primary Risk			Controls	Residual Risk		
		L	C	R		L	C	R
Southern	Finer aggregates during loading and unloading causing dust that moves off-site	Unlikely (D)	Moderate (3)	Moderate (3D)	Trucks will not be overloaded (SC); Material loads are sufficiently wetted (visual assessment) to minimise dust; Sprinklers and water carts deployed in summer and/or windy and dry conditions (SP); Adhere to site speed limits (QM).	Unlikely (D)	Minor (4)	Low (4D)
Eastern	Finer aggregates during loading and unloading causing dust that moves off-site	Unlikely (D)	Moderate (3)	Moderate (3D)	Trucks will not be overloaded (SC); Material loads are sufficiently wetted (visual assessment) to minimise dust; Sprinklers and water carts deployed in summer and/or windy and dry conditions (SP); Adhere to site speed limits (QM).	Unlikely (D)	Minor (4)	Low (4D)
Central Crushing	Finer aggregates during loading and unloading causing dust that moves off-site	Likely (B)	Moderate (3)	High (3B)	Trucks will not be overloaded (SC); Large shed enclosing the primary crusher (OM, QM); Enclosure over the 500t secondary sand bin (OM, QM); Sprinklers and water carts deployed in summer and/or windy and dry conditions (SP); Use a skid steer to remove accumulating material on paved roads as required (SP); Adhere to site speed limits (QM).	Unlikely (D)	Minor (4)	Low (4D)
Northern	Finer aggregates during loading and unloading causing dust that moves off-site	Likely (B)	Moderate (3)	High (3B)	Designated tarping area with instructional load cover signage (OM); Trucks will not be overloaded (SC); Sprinklers made available to wet down loads prior to tarping (OM); Adhere to site speed limits (QM).	Unlikely (D)	Minor (4)	Low (4D)
Western Mound	Finer aggregates during loading and unloading causing dust that moves off-site	Likely (B)	Moderate (3)	High (3B)	Check weather forecast to plan works when south easterlies are in accordance with the Meteorological and Visual TARP (QM); Material loads are sufficiently wetted (visual assessment) to minimise dust; Adhere to site speed limits (QM); Tipping to occur slowly and in stages; Height of tipping activity is reduced with a loader used to spread the material; Water reticulation on western mound to provide dust suppression and irrigation of vegetation (QM).	Unlikely (D)	Minor (4)	Low (4D)
Leaving site	Aggregate from the site is expected to be transported by haul trucks that may deposit dust off-site	Likely (B)	Minor (4)	High (4B)	Trucks will not be overloaded (SC) Trucks will be covered prior to leaving site (SC) Wheel wash or rumble grid will be maintained and kept in working order (QM).	Unlikely (D)	Minor (4)	Low (4D)

3.1.3.4 *Material Excavation*

The mechanical disturbance of material associated with excavation is a source of dust on-site, the rate of which is dependent on:

- Rate of excavation and loading – the amount of material excavated (related to the size of the excavator and the intensity at which it is utilised).
- Material physical properties – the potential for dust generation is increased for finer materials with greater silt content and lower moisture content. Coarser materials do not present a risk.
- Meteorological conditions – the moisture content of the material especially in the surface layers, can be affected by ambient temperature, humidity, wind, incident solar radiation and rainfall.

Without controls (e.g. adjusting the rates, properties or considering meteorological conditions) the primary dust risks associated with excavation and truck loading are presented below. Risk controls relevant to off-site dust generated by excavation and truck loading are discussed in Table 10.

Table 10: Primary and Residual Risk: Material Excavation

Site Location	Impact	Primary Risk			Controls	Residual Risk		
		L	C	R		L	C	R
Southern	Finer aggregates during excavation and loading causing dust that moves off-site	Likely (B)	Minor (4)	High (4B)	Forecast weather conditions are checked and deemed appropriate with respect to wind direction and speed (see Meteorological TARP) (QM); Excavators will preferentially work shielded from prevailing winds (QM, SP); Where this is not possible, the water cannon will be used (SP); Water cart and cannon will wet down areas prior to and post excavation if required (SP); Implement the actions associated with the TARP (QM).	Unlikely (D)	Minor (4)	Low (4D)
Eastern	Finer aggregates during excavation and loading causing dust that moves off-site	Likely (B)	Minor (4)	High (4B)	Excavators will preferentially work shielded from prevailing winds (QM, SP); Water cart and cannon will wet down areas prior to and post excavation if required (SP); Implement the actions associated with the TARP (QM).	Unlikely (D)	Minor (4)	Low (4D)

3.1.3.5 *Material Transfer Generating Dust*

The operation of conveyors and conveyor transfer points mechanically in the central crushing plant and northern section of the site can agitate the material being transferred and release dust into the air. The rate of emission is related to:

- Rate of transfer – the amount of material transferred.
- Distance of transfer – the length of the conveyor system.
- Number of conveyor transfer points.
- Number of conveyor drop points.
- Distance from drop point to ground/stockpile – a greater drop has an increased potential for disturbance and release of dust.
- Material physical properties – the potential for dust generation is increased for finer materials.
- Meteorological conditions – the moisture content of the material, can be affected by ambient temperature, humidity, wind, incident solar radiation and rainfall.

Agitated fines can also fall to the ground and collect below conveyors and conveyor transfer points only to be entrained by the wind or wheel traffic. The site employs a substantial network of elevated conveyors. In 2021 a mechanical sock was installed to minimise the distance from the conveyor to the stockpile, thereby reducing the potential for fines to be entrained by the wind. The likelihood of dust from material transfer leaving the site boundary and impacting nearby receptors are identified below. Risk controls relevant to off-site dust generated by conveyor transfer of material are discussed in Table 11.

Table 11: Primary and Residual Risk Rating: Material Transfer

Site Location	Impact	Primary Risk			Controls	Residual Risk		
		L	C	R		L	C	R
Central Crushing	Conveyor and conveyor transfer points actively moving aggregate within the central crushing area	Likely (B)	Moderate (3)	High (3B)	Conveyers to be located in the pit for passive screening or with additional engineered screening if this is not possible (OM, QM); Large shed enclosing the primary crusher (OM, QM); Strip rubber socks installed on all 5mm or less product drop points to reduce emissions (OM, QM); Material to be conveyed is wetted if dust is visible (QM, SP); Enclosure over the tertiary crusher surge bin (OM, QM); Enclosure over the diester secondary screens (OM, QM); Enclosure over the 500t secondary sand bin (OM, QM); Conveyor belt scraped beneath the drop/transfer point (SP); A foaming agent is used in accordance with application guidelines during crushing (QM); Fines collected under conveyors will be swept regularly with a skid steer (SP); Under plant sprinklers operational to suppress accumulated fines underneath the crushing plant (QM).	Unlikely (D)	Minor (4)	Low (4D)
Northern and Central Crushing	Fines accumulating under the conveyor infrastructure	Likely (B)	Moderate (3)	High (3B)	Material to be conveyed is wetted (QM, SP); Conveyor belt scraped beneath the drop/transfer point (SP); Strip rubber socks installed on all 5mm or less product drop points to reduce emissions (OM, QM); Fines collected under conveyors will be swept regularly with a skid steer (SP).	Unlikely (D)	Minor (4)	Low (4D)
Northern	Conveyor and conveyor transfer points actively moving aggregate within the sand plant only	Unlikely (D)	Moderate (3)	Moderate (3D)	Material to be conveyed is wetted (QM, SP); Conveyor belt scraped beneath the drop/transfer point (SP); Strip rubber socks installed on all 5mm or less product drop points to reduce emissions (OM, QM); Enclose conveyors and storage of material contained within sheds (QM); Tipping point contained within a shed (QM); Fines collected under conveyors will be swept regularly with a skid steer (SP).	Unlikely (D)	Minor (4)	Low (4D)

3.1.3.6 *Crushing and Screening*

Crushing and screening, which occurs in the central crushing and northern area of the site, has the potential to be a major source of dust. The crushing has the potential to produce fines while the agitation of the crushing and screening tends to release fines from the surface of rock and aggregate, all of which can be entrained into the air. The rate of emission is related to:

- Feed rate of the crusher.
- Levels of crushing and screening – e.g. primary, primary and secondary, primary, secondary and tertiary.
- Material physical properties – the potential for dust generation is increased for crushing material with lower moisture content.
- Meteorological conditions – the moisture content of the material, can be affected by ambient temperature, humidity, wind, incident solar radiation and rainfall.

Agitated fines can also fall to the ground and collect around the crusher and be entrained by the wind or wheel traffic. The likelihood of dust emitted from crushing and screening leaving the site boundary and impacting nearby receptors is considered below. Targeted measures have been implemented during activities start-up and shut-down procedures involving additional passive engineering controls to suppress dust. Risk controls relevant to off-site dust generated by crushing and screening activities are discussed in Table 12.

Table 12: Primary and Residual Risk Rating: Crushing and Screening

Site Location	Impact	Primary Risk			Controls	Residual Risk		
		L	C	R		L	C	R
Central Crushing	Crushing generating dust that is airborne and/or accumulates on the ground before becoming entrained in wind and leaving the site boundary	Likely (B)	Moderate (3)	High (3B)	Enclose screens, conveyor entry and exit points as required (OM, QM); Enclosure over the tertiary crusher surge bin (OM, QM); Enclosure over the diester secondary screens (OM, QM); Enclosure over the 500t secondary sand bin (OM, QM); Foaming agent used during crushing process to inhibit dust (QM); Water sprays used at the outputs of conveyors and transfer points (SP); Water cart deployed/water sprays used prior to plant start-up procedures in summer and/or windy and dry conditions (SP). Skid steer used under the entry and exit points of conveyors (SP) as required by Quarry Manager; Adjust the rate of crushing to respond to the meteorological conditions (TARP) (QM, SP).	Unlikely (D)	Minor (4)	Low (4D)
Northern	Crushing generating dust that is airborne and/or accumulates on the ground before becoming entrained in wind and leaving the site boundary	Likely (B)	Moderate (3)	High (3B)	Enclose screens, conveyor entry and exit points and as required (OM, QM); Water sprays used at the outputs of conveyors and transfer points (SP); Skid steer used under the entry and exit points of conveyors (SP) as required by Quarry Manager; Adjust the rate of crushing to respond to the meteorological conditions (TARP) (QM, SP).	Unlikely (D)	Minor (4)	Low (4D)

3.1.3.7 *Wind Erosion from Stockpiles and Exposed Areas*

Dust from the surface of stockpiles and exposed areas can potentially be entrained by the air (wind) passing over it. This source of dust is notable as it can occur at any time there is wind, whether there is site activity or not (including out of operational hours and shut-down periods). Entrainment can be accentuated by dust already in suspension which can aid the dislodgement of particulates on the surface. The rate of wind erosion related emission is related to:

- Area of surface exposed.
- Wind speed and direction – erosion is increased at higher wind speeds and can also be dependent on wind direction if, for example, the site and surrounding terrain is not flat and creates natural wind breaks and or increases turbulence.
- Surface physical properties – the potential for dust generation is increased for finer materials with greater silt content and lower moisture content.
- Other meteorological conditions – the moisture content of the surface can be affected by ambient temperature, humidity, wind, incident solar radiation and rainfall.

The likelihood of dust emitted from stockpiles and exposed areas leaving the site boundary and impacting nearby receptors is considered below. Risk controls relevant to off-site dust generated by stockpiling are discussed in Table 13.

Table 13: Primary and Residual Risk Rating: Wind Erosion from Stockpiles

Site Location	Impact	Primary Risk			Controls	Residual Risk		
		L	C	R		L	C	R
Central Crushing	Dust from the surface of stockpiles and other exposed areas leaving the site boundary through wind	Likely (B)	Moderate (3)	High (3B)	Locate stockpiles in shielded areas where possible (QM); Minimise stockpile drop heights (SM, SP); Timed switched sprinklers used at regular intervals in summer, during shut-down periods and/or dry and windy conditions (QM); Use of dust suppressants / sealants; Temporary covers (e.g. encrusting agent) to be placed on stockpiles that are not in use for 90 days (QM); Large shed enclosing the primary crusher (OM, QM); Enclosure over the tertiary crusher surge bin (OM, QM); Enclosure over the diester secondary screens (OM, QM); Enclosure over the 500t secondary sand bin (OM, QM); Implement the actions associated with the TARP (QM).	Possible (C)	Minor (4)	Moderate (4C)
Northern	Dust from the surface of stockpiles and other exposed areas leaving the site boundary through wind	Likely (B)	Moderate (3)	High (3B)	Locate stockpiles in shielded areas where possible (QM); Minimise stockpile drop heights (SM, SP); Timed switched sprinklers used at regular intervals in summer, during shut-down periods and/or dry and windy conditions (QM); Use of dust suppressants / sealants; Temporary covers (e.g. encrusting agent) to be placed on stockpiles that are not in use for 90 days (QM); Implement the actions associated with the TARP (QM);	Possible (C)	Minor (4)	Moderate (4C)
Western Mound	Dust from the surface of the western mound leaving the site boundary through wind	Likely (B)	Moderate (3)	High (3B)	Short tipping to limit dust during deposition and facilitate faster rehabilitation (OM); Self-sustaining vegetation planted as soon as practicable (OM, QM); Water cart and cannon used to suppress dust (SP); Consider daily forecasts to inform construction activities to limit dust generating activities (OM, QM). Use water line to assist with revegetation and moisture for dust suppression along the exposed area of the stockpile (QM).	Possible (C)	Minor (4)	Moderate (4C)

3.1.3.8 *Track-Out*

Highway trucks used to take product off-site have the potential to take material onto public paved roadways. Material can drop from tailgates, vehicle surfaces where material may have collected during loading, and from wheels. Similarly, materials from third-party sites might also be deposited. Light vehicles leaving site may contribute to track-out, although to a lesser degree, by dropping and spreading material from wheels. Fines from this material have the potential to be entrained in the air from the paved surface by the wind or vehicular traffic (including public vehicular traffic).

The likelihood of dust from track-out impacting nearby receptors is considered below. Risk controls relevant to off-site dust generated by track-out are discussed in Table 14.

Table 14: Primary and Residual Risk Rating: Track-Out

Site Location	Impact	Primary Risk			Controls	Residual Risk		
		L	C	R		L	C	R
Northern	Materials dropping through tailgates or collecting on the wheels of vehicles depositing on Main South Road and causing nuisance	Likely (B)	Moderate (3)	High (3B)	Tailgates to be locked (SC); Spillage from side trails, tail gates and drawbars are cleared (SC, SP); Check that loads are covered (SC); Rumble strips and wheel washes are used appropriately (QM); Entrance road cleaned with street sweeper at regular intervals (QM); Additional asphalt surface at the quarry entrance up to and around the weighbridge (OM).	Unlikely (D)	Minor (4)	Low (4D)

3.1.3.9 Control Performance Review

All engineering, administrative and management dust control measures applied at the site will be subject to an annual performance review by the Quarry Management team to evaluate their effectiveness and reliability in preventing dust from leaving the site. Effectiveness will be demonstrated by monitoring data and visual observations.

Where a control is found to be performing less than satisfactorily, improvements will be considered and implemented, e.g. a sprinkler system not providing enough coverage will be upgraded. Southern Quarries has engaged independent air quality scientists and blast management specialists to help inform the priorities in the Action Plan (Table 15).

Table 15: Action Plan

Control	Action	Date
Admin	Refine SMS notification for dust alerts so that the Operational Manager is notified earlier of increasing dust levels at the ADR locations.	Complete
Admin	Independently review blasting controls and revise the Blasting Management Plan.	Complete
Admin	Increase the calibration frequency of the ADR dust monitoring to improve availability.	Complete
Admin	Refine the community engagement strategy.	Complete
Admin	Host a community quarry tour – attended by approximately 70 people (advertised event).	Complete
Admin	Host a Community Open Day at the Sellicks Community Hall to discuss site activities and plans.	Complete
Admin	Establish communication channels through relevant Facebook groups (e.g. Sellick & Surrounds and Friends of Sellicks groups which combined have approximately 1,600 members).	Complete
Admin	Issue community notifications for visible blasting activities, explaining the time and wind conditions.	Ongoing
Admin	Improve transparency on website by making environmental information and operational control information available.	Complete
Admin	Independent review of the operational controls and changes incorporated into the Dust Management Plan.	Complete
Elim	Seeding of the mound to commence and topsoil dressing applied where practical.	Ongoing
Elim	Progressively rehabilitate exposed surfaces across the site, which include spreading and maintenance of approximately 4-5 tonnes of grass seeds and 1,500 native trees.	Ongoing on annual basis
Eng	Increase the frequency of the street sweeper to daily use.	Complete
Eng	Inspect the efficiency of existing on-site dust controls This has resulted in: <ul style="list-style-type: none"> ■ Enclosure of five transfer points in the Crushing Plant. ■ Maintenance of the underplant sprinkler systems. ■ Installed an additional polo citrus dust suppression unit in the Primary Crushing Plant. ■ Installed a remote view of the Crushing Plant PLC to increase supervision and enable real time dust response by applying water. This is now being considered for installation on mobile devices. ■ Improved the efficiency of the conveyer (head chute) sprinkler system. 	Complete
Eng	Provide additional water infrastructure including 20,000L tank and pump for the Western Mound to reduce dust and increase planting success using irrigation and timed sprinklers.	Complete
Eng	Install a 375,000L water tank and quickfill system for the on-site water trucks reducing the fill time to 10 mins (formerly 30 mins), enabling increased coverage and frequency of water truck use on-site.	Complete
Eng	Construct Western mound in accordance with engineering and geotechnical standards which enables shorter tipping distances.	Ongoing

Control	Action	Date
Eng	Install drainage and sediment erosion management measures on the Western Mound.	Complete
Eng	Verify the effectiveness of prewetting the quarry floor as a dust control measure during blasting events.	Complete
Eng	A supply agreement with Willunga Basin Waster Company (WBWC) has been established to use an additional 50ML of recycled water on-site. Chlorine dosing as secondary water treatment is being completed before the internal site tank is filled for use.	Complete
Eng	Installation of an enclosure over the Tertiary Crusher surge bin.	Complete
Eng	Installation of enclosures over the two Diester 20x8 Secondary Screens.	Complete
Eng	Installation of an overhead 500 tonne storage bin for the Secondary Sand Open Stockpile.	Complete
Admin	Independent review of dust controls by external consultant. Summary of key recommendations to be made and included in the October 2019 DMP update.	Complete
Eng	Installation of a self-bunded fuel tank and re-seal of the quarry entrance up to and around the weighbridge.	Complete
Eng	Installation to enclose the Primary Dump Chute to enclose trucks whilst tipping	Complete
Eng	Installation to enclose the Tertiary Sand Open stockpile (subject to internal approval).	Q4, 2023
Admin	Establishment of a camera system to monitor and record quarry activities and potential activities or conditions that may cause dust.	Complete
Admin	ADR data available in plant control rooms and available through website in real time.	Complete
Admin	Development and use of visual dust collages to be used as an internal quality control measure among quarry personnel.	Complete
Admin	Revise and optimise TARP levels to initiate prompt investigation. Hourly average trigger level revised from 60 $\mu\text{g}/\text{m}^3$ to 40 $\mu\text{g}/\text{m}^3$.	Complete
Admin	Adjust SMS notifications for trigger levels exceedances at ADR monitors.	Complete
Eng	Installation of mechanical rubber socks to the Tertiary Sand Open stockpile that move in response to the size of stockpiled material to eliminate drop height dust production.	Complete
Eng	Purchase of additional ADR monitor to help achieve minimum target availability.	Complete
Admin	Adelaide-based secondary supplier (ALS global) engaged to ensure the continuance of support and local resource for the calibration of dust monitoring equipment.	Complete
Eng/Admin	Installation of new control rooms at the primary and secondary enclosure areas. This will improve overall site safety by increasing visibility of plant operations and operator awareness of environmental conditions.	Complete
Eng	Upgrade infrastructure to support current wheel wash operation	Q4, 2022
Eng	Investigate secondary wheel wash options to aid in reduction of drag out	Q2, 2023
Eng	Conduct dust monitoring assessment and relocate ADR units accordingly	Q1, 2023
Eng	Investigate the necessity of a fourth ADR unit and possible location	Q4, 2023
Eng	Investigate enclosure options for main crushing plant VSI	Q4, 2023

4.0 MONITORING AND RESPONSE

4.1 Monitoring Stations and Data

4.1.1 Monitoring Stations

Continuous and real-time monitoring of ambient PM₁₀ concentration using dust monitors is being undertaken at three locations on the site boundary. The unit is designed for continuous unattended monitoring with continuous real-time data transmission.

Dust monitoring will be conducted with instruments sited in accordance with Australian Standard AS 3580.1.1 - 2015 "Methods for the Sampling and Analysis of Ambient Air – Guide to Siting Air Monitoring Equipment".

Each dust monitor has a co-located meteorological monitor. Meteorological monitoring will be conducted with an instrument in accordance with Australian Standard AS 3580.14 - 2014 "Methods for sampling and analysis of ambient air - Meteorological monitoring for ambient air quality monitoring applications".

The locations of the three dust monitors have been independently assessed (Groundworks, July 2022) with new more applicable locations proposed for ADR1 (down-wind) and ADR2 (back-ground). Details are provided in the Groundworks report. The current (in blue) and proposed (in green) ADR locations are included in Figure 3 below.



Figure 3: Current and Proposed ADR Locations

4.1.2 Forecasting

The Mount Lofty Ranges District meteorological three-day forecasts will be obtained daily from the Bureau of Meteorology website as representative of the conditions likely to be experienced at the site in the coming days.

The forecasting information will be used to:

- Assess potential impacts and evaluate risks both ahead of time and in conjunction with the real continuous monitoring data.
- Generate alerts for predicted air quality events e.g. high winds.
- Allow site personnel to pre-plan operations and implement additional management measures.

4.1.3 Data Collection and Analysis

Parameters that will be collected are described in Table 16. Data will be continuously generated in real time, web-hosted and relayed to the Quarry Manager and Operations Manager. Formal reporting will be undertaken by Southern Quarries (along with on-site wind speed and wind direction) such that compliance monitoring and reporting requirements are met.

Table 16: Measured Parameters at Southern Quarries

Parameter	Measurement Criteria
PM ₁₀	The total continuous PM ₁₀ dust concentration to be measured at three monitoring sites measured by a continuous unit (aiming to achieve 90% instrument and data availability) with co-located weather instruments. Trigger levels (see TARP) identified and measurement criteria are to be reviewed annually.
Meteorological	Wind speed and wind direction will also be measured at three monitoring sites measured by a continuous unit (aiming to achieve 90% instrument and data availability). It is noted that while Southern Quarries aims to achieve 90% data availability of the monitoring units, there may be technical faults that require the units to be sent interstate for repairs. Those repairs are outside the control of Southern Quarries.

To assist in managing nuisance dust, Southern Quarries continuously measures PM₁₀ at three monitoring stations (ADR units) as per agreement with EPA which have co-located meteorological stations. The data recorded are compared against the regulatory limit for PM₁₀ on a 24 hour average basis (midnight to midnight).

- Report PM₁₀ for the quarterly and monthly 24 hour average period.
 - Data and graphs will also be made available at 10 minute, 1 hour (clock hours) and 24 hours (midnight to midnight) discrete intervals.
- Prepare scatter plots for short term intervals (e.g. 10 minutes) and triangulation to determine localised sources of nuisance dust when a TARP Triggers and/or complaint. Should the analysis be inconclusive, or not valid due to localised differences in meteorological conditions, alternative analysis will be considered.
- Investigate, report and respond to those periods where the PM₁₀ 1-hr averages exceed 60µg/m³.
- Community complaints that relate to dust will be investigated by Southern Quarries to determine the source and/or activity.

In accordance with EPA criteria for managing public health, Southern Quarries will report PM₁₀ particles based on 24 hour and annual averages, for which graphs will be provided.

All data and interpretation will be made available through the quarterly reporting schedule as a condition of the EPA licence.

4.1.4 Monitoring Contingency

Southern Quarries is aiming to meet the industry performance standard with respect to the operation of instruments (i.e. 90% data availability).

In the event of monitoring interruption due to the failure of an instrument, repairs or a replacement instrument will be installed as soon as practicable. Consideration is also being given to developing a Contingency Plan, involving training staff, having spare equipment and, if required, changing equipment suppliers in order to avoid faults in monitoring equipment so that the minimum 90% data availability is achieved at the site.

Recent measures have been implemented as part of the monitoring contingency. These include the engagement of ALS Environmental as a local, secondary supplier to ensure continual support for maintenance and calibration of dust monitoring equipment. An additional ADR monitor will be available on-site in early 2022 in order to safeguard against possible equipment failure and to ensure the capture of minimum data availability at the site.

Calibrations, maintenance and/or servicing will be undertaken on a quarterly basis by an external provider.

4.2 Trigger Action Response Plan

A Trigger Action Response Plan (TARP) is designed to ensure that potential dust impacts from site activities are minimised by monitoring dust concentrations at the site boundary and implementing appropriate management measures as required. The TARP also includes consideration of meteorology forecasts and observations to enable appropriate management measures to be proactively taken, e.g. in preparation for adverse wind conditions. The TARP comprises:

- Meteorological forecasts, observations and visual inspections
- Site boundary real-time dust monitoring.

A series of *Triggers* are defined for each component (Table 17). In relation to wind speeds, the Beaufort Wind Scale has been adopted which measures wind speed according to its impact on the land and sea.

Table 17: Trigger Descriptions at Southern Quarries

Trigger	Description
Normal state	Reasonable conditions in day-to-day operations. <u>Winds:</u> Calm to Light (0-20 km/h).
Level 1	Change from normal indicating a potential risk; not of a serious nature, but acts as an alert and requires monitoring to detect further trends. <u>Winds:</u> Moderate (20-30 km/h).
Level 2	Moderate risk of dust related impacts occurring. Remedial action needs to be planned and executed. <u>Winds:</u> Fresh (30-40 km/h).
Level 3	High risk of dust related impacts occurring; a situation has occurred that poses an immediate risk and remedial action must be undertaken. <u>Winds:</u> Strong+ (40-50 km/h).

For each trigger, a corresponding response or series of responses is required, as described in Table 18.

At any time, a response is required to meet the highest trigger, be it visual, monitoring or meteorological.

Table 18 presents measures to be taken in the event that a specific site activity is identified as the source of a Level 1 Trigger and that the intensity of that activity may be temporarily reduced or altered.

Table 18: Temporary Activity Intensity Reduction and Control Measures

Activity	Temporary Intensity Reduction	Temporary Control
Drilling	<ul style="list-style-type: none"> ■ Cease drilling until more favourable conditions return 	<ul style="list-style-type: none"> ■ Cease drilling until more favourable conditions return
Vehicle movements (wheel generated dust)	<ul style="list-style-type: none"> ■ Reduce vehicle movements 	<ul style="list-style-type: none"> ■ Re-route vehicles from problem areas (e.g. near site boundary; route not serviced by sprinkler etc.) ■ Concentrate water cart and cannon on one route and limit vehicles to this route
Uncovered loads	<ul style="list-style-type: none"> ■ Reduce speeds 	<ul style="list-style-type: none"> ■ Increased watering using water sprays and/or water cannon to wet-down load where it is being loaded
Truck tipping on overburden mound	<ul style="list-style-type: none"> ■ Limit to one truck tipping at a time ■ Tip in a different area ■ Cease tipping until more favourable conditions return 	<ul style="list-style-type: none"> ■ Deploy water cannon to tipping area
Crushing and screening	<ul style="list-style-type: none"> ■ Cease crushing and screening until more favourable conditions return 	<ul style="list-style-type: none"> ■ Increase conveyor watering rate ■ Cease crushing and stockpiling material
Material transfer	<ul style="list-style-type: none"> ■ N/A 	<ul style="list-style-type: none"> ■ Increase conveyor watering rate
Wind erosion of unconsolidated stockpiles	<ul style="list-style-type: none"> ■ N/A 	<ul style="list-style-type: none"> ■ Increase sprinkler rate ■ Deploy water cannon

4.3 Roles and Responsibilities

Southern Quarries have a number of site personnel responsible for all quarry operations. The roles and responsibilities are generally divided as per the general tasks listed in Table 19.

Table 19: Roles and Responsibilities of Quarry Personnel

Role	Responsibilities
Southern Quarries Operational Management (OM)	<ul style="list-style-type: none"> ■ Provide training and inductions to all employees and site personnel to highlight the importance of dust control. ■ Plan site activities and site layout. ■ Communicate specific site activities to community when dust is likely to be visible (ie. blasting). ■ Instructional signage around quarry. ■ Engineer controls for dust suppression (storage sheds, covers, bins).
Quarry Manager (QM)	<ul style="list-style-type: none"> ■ Check environmental and meteorological conditions prior to start-up. ■ Consider daily forecasts to inform construction activities to limit dust generation. ■ Adjust and/or refrain from activities in adverse meteorological conditions. ■ Implement actions associated with the TARP. ■ Deploy water cart and sprinklers as necessary to wet surfaces and suppress dust as part of regular operations and in increased use in response to environmental conditions. ■ Use of chemical suppressants where required (ie. foaming agents, vital bon matte encrusting agent, magnesium chloride). ■ Ensure speed of vehicles is safe and minimised to suppress dust at all times. ■ Assess road conditions and requirement for road dust suppressants. Re-route vehicles from problem areas where necessary. ■ Maintain wheel wash and rumble grid in good order. ■ Ensure water reticulation on boundary stockpiles for dust suppression and irrigation of vegetation. ■ Ensure engineering controls in daily activities are being adhered to, i.e. locating stockpiles in shielded areas where possible, temporary covers and use of storage bins. ■ Maintain entry and exit point of quarry using a street sweeper at regular intervals.
Site personnel (SP) and subcontractors (SC)	<ul style="list-style-type: none"> ■ Site activities undertaken by trained contractors in accordance with Australian Standards. ■ Communication of site conditions and environmental and dust mitigation controls required in real time. ■ Sprinklers and water cart/s deployed prior to site start-up to pre-wet areas in summer and/or windy and dry conditions. ■ Maintain roads and area beneath material transfer equipment using skid steer or grader to remove accumulating material. ■ Ensure trucks are not overloaded and material loads sufficiently wetted. ■ Implement practical dust minimisation measures (ie. excavators will preferentially work shielded from prevailing wind).

Table 20: Trigger Action Response Plan

Trigger	Trigger Description	Response
Normal State	<p><u>DAILY WEATHER FORECAST</u></p> <ul style="list-style-type: none"> ■ Calm to light winds (less than 20 km/h). <p><u>REAL TIME ACTIVITIES</u></p> <p>Site Observation:</p> <ul style="list-style-type: none"> ■ Wind felt on face and leaves rustle; ■ No dust leaving the site. <p>Any ADR reading 1 hour average less than: 40 µg /m³ PM₁₀</p>	<ul style="list-style-type: none"> ■ Note forecast and observed conditions and address in prestart meetings ■ Maintain dust suppression activities
Level 1	<p><u>DAILY WEATHER FORECAST</u></p> <ul style="list-style-type: none"> ■ Moderate winds (20 to 30 km/h); ■ Less than 50% chance of rain. <p><u>REAL TIME ACTIVITIES</u></p> <p>Site Observation:</p> <ul style="list-style-type: none"> ■ Wind raises dust and loose paper; ■ No rain in past 6 hrs; ■ Dust has the potential to leave the site. <p>Any ADR reading 1 hour average of: 40 µg /m³ PM₁₀</p>	<p><u>DAILY WEATHER FORECAST</u> Communicate change of observed conditions across site operations</p> <p><u>REAL TIME ACTIVITIES</u></p> <ul style="list-style-type: none"> ■ SMS alert/ web-hosted data to be reviewed and correlated with weather conditions ■ Out-of-hours alerts to be investigated as soon as practicable to do so ■ Quarry Manager to identify the activity(s) and/or area(s) acting as the source of the dust and implement or delegate appropriate control strategies: <ul style="list-style-type: none"> ■ Deploy the water cart to these areas and/or increase the watering rate ■ Reduce intensity of identified activity(s) ■ Increase intensity of available controls for identified activity(s) ■ Quarry Manager to determine if additional longer term controls are required at source ■ Continue to implement control strategies such that conditions return to <i>Normal State</i>
Level 2	<p><u>DAILY WEATHER FORECAST</u></p> <ul style="list-style-type: none"> ■ Fresh winds (30 to 40 km/h); ■ Less than 90% chance of rain. <p><u>REAL TIME ACTIVITIES</u></p> <p>Site Observation:</p> <ul style="list-style-type: none"> ■ Wind causes small tree branches to move; ■ No rain in past 12 hrs; ■ Dust has the potential to leave site. <p>Any ADR reading Two consecutive hourly averages of: >40 µg /m³ PM₁₀</p>	<p><u>DAILY WEATHER FORECAST</u> Review daily activities Modify dust-generating non-essential activities</p> <p><u>REAL TIME ACTIVITIES</u> Site personnel to confirm dust is leaving site Continue to implement control strategies such that conditions return to <i>Normal State</i> Quarry Manager to determine if additional longer term controls are required at source</p>
Level 3	<p><u>DAILY WEATHER FORECAST</u></p> <ul style="list-style-type: none"> ■ Strong+ winds (40 to 50 km/h); ■ Less than 90% chance of rain. <p><u>REAL TIME ACTIVITIES</u></p> <p>Site Observations:</p> <ul style="list-style-type: none"> ■ Wind causes large trees branches to move; ■ No rain in past 24 hrs; ■ Dust is leaving the site. <p>Any ADR reading Three consecutive hourly averages of: >40 µg /m³ PM₁₀</p>	<p><u>DAILY WEATHER FORECAST</u> Review daily activities Eliminate non-essential dust-generating activities (e.g. crushing may be able to cease)</p> <p><u>REAL TIME ACTIVITIES</u></p> <p>STOP identified activity(s) until such time that wind conditions change or ADR monitoring levels reduce</p> <p>Do not recommence identified source activity(s) until such time that wind conditions change or it is deemed that sufficient dust suppression controls have been applied to the identified source activity(s)</p> <p>Cintellate report filed if 24 hour average levels exceed 50 µg /m³</p>

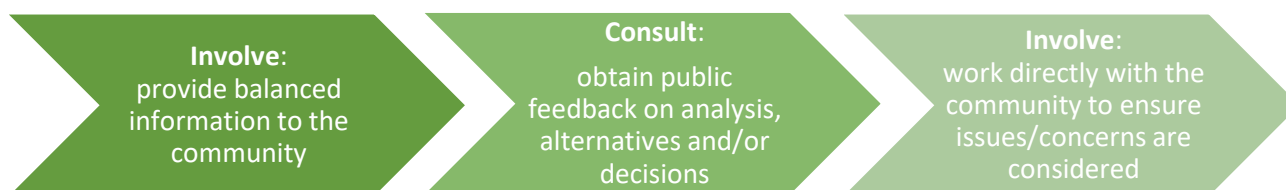
5.0 COMMUNITY ENGAGEMENT

Southern Quarries has a long history of engaging directly with members of the community, community groups, regulators, local councils, members of parliament and other community stakeholders and this is something that will continue.

The Southern Quarries Community Engagement Plan (see Appendix A), in addition to the Mine Operation Plan (MOP) has the following objectives:

- Provide relevant, timely and balanced information so people can contribute in a meaningful way.
- Provide a contact point for people to have their say and to speak honestly.
- Consider the needs and interests of all the stakeholders in decision-making processes.
- Collaborate with peak bodies and other levels of Government to achieve common goals for the future.
- Advance notice of visible blasts will be given via Facebook, and/or other preferred contact methods (specified in letter box survey).
- The EPA-accepted Quarterly Compliance report will be made publicly available via the Southern Quarries website.
- Effectively communicate strategies being used to minimise environmental impacts at the site on sensitive receptors.
- Communication and implementation of Covid-19 site safety plan for site visitors.
- Engage directly with members of the community or community groups.
- Attempt to minimise the number complaints received from the local community.

Different engagement levels may be appropriate in different situations. The following levels of engagement are relevant to Southern Quarries planned engagement activities, and these have been outlined in the Community Engagement Plan. Any community complaints will be logged in the Cintellate system and will be addressed by the Operational Management Team.

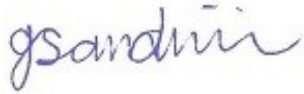


6.0 REPORTING ARRANGEMENTS

Reporting will be conducted in accordance with EPA licence conditions.

Signature Page

Golder Associates Pty Ltd



Ella Sandrini
Environmental Engineer



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APPENDIX A

Community Engagement Plan



REPORT

Community Engagement Plan

Southern Quarries

Submitted to:

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1529035-007-R-Rev6

January 2022



Distribution List

1 e-copy: Southern Quarries

1 e-copy: Golder Associates

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1.0 PURPOSE OF THE PLAN

This Community Engagement Plan (CEP) supports Southern Quarries' commitment to continue to meaningfully engage and communicate with surrounding communities and other interested parties in relation to its operations at Sellicks Beach.

The objective of this CEP is to outline a community engagement strategy to ensure effective engagement including allocation of management responsibilities and provision of an appropriate and responsive mechanism for community feedback.

The engagement strategy acknowledges the desire of Southern Quarries to share information and experiences with the community to be able to co-exist effectively and in harmony, while addressing the obligations under Section 5 of the Southern Quarries Dust Management Plan (Golder Associates, October 2019), and EPA Licence 2052, condition 1.1.2.

2.0 SOUTHERN QUARRIES- SELICKS BEACH

Southern Quarries (the Quarry) is situated approximately 50 km south of the Adelaide CBD, on the edge of the Urban Growth boundary, as defined by the South Australian Government.

The Quarry was established in 1971 and has been quarried continuously over the past 50 years. The carbonate rock is of a very high grade and is suitable for use in high strength, low shrink concrete, as well as asphalt grade aggregates and high-quality road base material.

The three distinct rock seams that are quarried at this site are:

- 1) Fork Tree Hill Limestone: predominately used for concrete aggregates as well as other products such as rail ballast and armour rock.
- 2) Sellicks Hill Limestone: predominantly used to produce asphalt grade aggregates but can also be used to produce concrete aggregates.
- 3) Heatherdale Shale: used to produce a range of road base materials.

The Quarry is able to operate continuously under the Mining Act 1971. However, plant operating hours are generally from 6.00am to midnight Monday to Friday and 6.00am to 12.00pm on Saturday. These times do not include pre-start checks, maintenance of plant and equipment or development works which vary due to demand. Loading and distribution of materials occurs 24 hours per day.

The Quarry has been identified by the Department for Energy and Mines (DEM) as a strategic extractive quarry for South Australia within a Strategic Resource Area (SRA) in the Greater Adelaide region.

The SRA (Greater Adelaide region) is an area of key economic value to South Australia due to the quantity and quality of construction materials and mineral resources that are extracted or contained within that area. This SRA is also an area currently experiencing urban encroachment or incompatible development interface issues or is likely to experience such issues in the near future. The South Australian Government is working with local governments and industry members to ensure the long-term future of the resource is enhanced and protected. This will provide security for the extractives sector while supporting housing and construction affordability for urban development.

To achieve these outcomes, one of the key strategies employed by Southern Quarries in recent years is to secure a buffer zone between the Quarry and sensitive receptors located approximately 1.3 km west and south-west of the quarry site. The company has been proactive in securing large parcels of land around the quarry for this purpose.

3.0 THE ENGAGEMENT STRATEGY

3.1 Purpose and Objective

The purpose of the engagement strategy is to develop trust and confidence with the local community to engender a long-term relationship and commitment to a shared future.

The objectives of the engagement strategy are to:

- Effectively communicate strategies being used to minimise environmental impacts at the site on sensitive receptors.
- Ensure community views are understood, considered and, where possible, acted upon.
- Effectively address community concerns and establish an appropriate mechanism for responsive communication.
- Ensure the community is regularly informed and consulted regarding the quarry activities and other issues that may affect them.

3.2 Key Stakeholders

The following key stakeholders have been identified, however this list will be built upon through implementation of the engagement strategy:

- Site neighbours.
- Sellicks Beach and Sellicks Hill residents.
- Sellicks Beach businesses and community groups.
- Social media groups.
- City of Onkaparinga, District Council of Yankalilla and Alexandrina Council.
- State Government Departments.

3.3 Engagement Principles

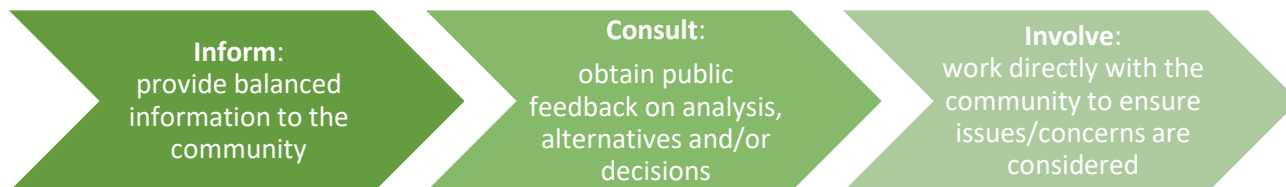
Southern Quarries has a history of engaging directly with members of the community, State and local government, members of parliament and other community stakeholders.

Southern Quarries adopts the following principles when engaging with the community:

- Provide relevant, timely and balanced information so people can contribute in a meaningful way.
- Provide a contact point for people to have their say and to speak honestly.
- Implement and communicate a Covid-safe plan to protect the health of all workers and visitors to the site.
- Consider the needs and interests of all stakeholders in decision-making processes.
- Collaborate with peak bodies and other levels of Government to achieve common goals for the future.

3.4 Engagement Activities

Different engagement levels may be appropriate in different situations. The following levels of engagement may be considered during the quarry life:



To achieve the engagement strategy objectives, the engagement activities detailed in Table 1 will be implemented.

Table 1: Stakeholder engagement strategy

Activity	Level of Engagement	Detail	Occurrence
Website updates	Inform	Southern Quarries will make environmental reports, community days and other relevant information available on a revised company website with clear links to allow interested parties to review environmental performance and provide feedback.	Ongoing
Letter box survey	Consult	A survey will be sent to local residents and businesses for response with a preferred contact method for site and operational updates. This will ensure the engagement strategy is targeted, effective and stakeholders have been adequately identified. A list of registered email addresses has been established for communication. All interactions are recorded and shared in quarterly compliance reports.	Ongoing
Provision of the Quarterly Compliance report	Inform	The EPA-accepted Quarterly Compliance report will be made publicly available via the Southern Quarries website.	Quarterly
One-on-one meetings	Consult and involve	One-on-one meetings will be held regularly with important stakeholders such as the FoS group, closest neighbours and local and State Government.	As required
“Drop in Days”	Inform, consult and involve	“Drop in Days” will be held periodically to provide site updates, news and an opportunity for the community to learn about the operations, give informal feedback and voice concerns.	As required

Activity	Level of Engagement	Detail	Occurrence
Direct communication line	Consult and involve	A dedicated email address will be maintained to allow the community to communicate directly with Southern Quarries. The email inbox will be regularly monitored, and emails will be responded to within 2 business days.	Ongoing
Site tours	Inform and consult	An annual site tour will be offered and undertaken (subject to minimum numbers being met). Residents who express an interest will be taken on a site tour of the facility. The invitation for site tours will be advertised at planned engagement activities and in other updates.	Annually, or as per community demand
Advance notice of visible blasts	Inform	Advance notice of planned blasts with a high likelihood of visual dust will be provided via Facebook, and/or other preferred contact methods (specified in letter box survey).	Ongoing
Local community groups	Inform	Updates will be provided to local community groups to include on their webpages and/or Facebook pages.	Ongoing

3.5 Community Sponsorships

In addition to the engagement activities listed above, sponsorships will be provided to community groups/causes. Community sponsorships are to be determined and arranged in accordance with Adbri Limited (Southern Quarries) Corporate Guidelines.

4.0 RESPONSIBILITIES

Southern Quarries management has responsibility for ensuring engagement strategies outlined in this document are implemented, as summarised in Table 2. Management will delegate activities appropriately and will remain accountable for the quality of their delivery.

Table 2: Management responsibilities

Role	Responsibility
General Manager / Group Corporate Affairs Adviser	<ul style="list-style-type: none"> ▪ Providing overall direction to management ▪ Overall responsibility for the engagement strategy and ensuring activities are properly undertaken ▪ Contact face with the media ▪ Meet with community representatives as required.
Operations Manager	<ul style="list-style-type: none"> ▪ Overall environmental management for the site ▪ Communication with the community ▪ Identifying and addressing site improvements ▪ Taking appropriate action in response to any complaints ▪ Ensuring all complaints are closed off in a timely manner ▪ Maintenance of the Complaints and Incident Register.
Quarry Manager / Assistant Quarry Manager	<ul style="list-style-type: none"> ▪ Daily management duties at the site ▪ Ensure approved environmental strategies are implemented ▪ Communication with the community ▪ Maintenance of the Complaints and Incident Register ▪ Ensure site personnel receive appropriate environmental training ▪ Report environmental incidents and corrective action to management.

5.0 FEEDBACK MANAGEMENT

Feedback/complaints should be directed to the Quarry Operations Manager and/or the Quarry Manager via the community feedback email address (communityfeedback@southernquarries.com.au) as follows:

Ryan Low
Quarry Operations Manager
Telephone: 08 8334 4704
Mobile: 0448 952 752
Email:

Trevor Smith
Quarry Manager
Telephone: 08 8556 3007
Mobile: 0414 332 413
Email: tsmith@southernquarries.com.au

The following procedure will be followed on receipt of any feedback/complaint:

- *Register* – The feedback/complaint will be entered onto the Complaints and Incident register by either the Operations Manager or the Quarry Manager. It will also be registered on the company's internal online management system.
- *Preliminary investigation* – Once the details are entered into the Complaints and Incident Register a decision is reached to determine if the complaint is bona-fide. The complainant will be contacted directly to clarify their concerns as soon as possible and no longer than 1-2 working days.
- *Assigned actions* – Actions will be assigned in the Complaints and Incidents Register in order to respond to the specific complaint.
- *Proposed action* – Communication with the complainant to discuss the proposed action will be organised. Once the actions are completed satisfactorily the complaint will be closed off and recorded in the Register.
- *Failure to resolve a complaint* – There may be circumstances where the complaint is unable to be resolved. The complainant will then be notified, and the case will remain open and be reviewed at regular intervals (management meetings).

6.0 CLOSURE

The CEP will be reviewed regularly in response to the success of engagement activities, changing operational activities and changing stakeholder interests to ensure the strategy remains current and effective in meeting Southern Quarries engagement objectives.

Signature Page

Golder Associates Pty Ltd

Ella Sandrini
Environmental Engineer

Naomi Cooper
Senior Environmental Toxicologist

LO/DF/np

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Attachment 5

Noise Measurement Report

Selicks Hill Quarry

Noise measurement report



Sellicks Hill Quarry

Noise measurement report

Client: Groundwork Plus

ABN: 08 829 145 906

Prepared by

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Quality Information

Document Sellicks Hill Quarry

Ref 60428930

Date 11-Oct-2017

Prepared by Adam Cook

Reviewed by Simon Moore

Revision History


Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
0	18-Jul-2016	Initial issue	Simon Moore Principal Engineer - Acoustics	
1	11-Oct-2017	Update for additional measurements	Alex Dundon Principal Engineer - Acoustics	

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Glossary

'A' Weighting	Frequency filter applied to measured noise levels to represent how humans hear sounds.
dB(A)	'A' Weighted overall sound pressure level.
$L_{eq T}$	Equivalent (energy averaged) noise level measured over a time period T. This noise descriptor is used within the <i>Environment Protection (Noise) Policy</i> for assessment of environmental noise levels against noise criteria.

1.0 Introduction

AECOM was engaged by Groundwork Plus to undertake measurements of operational noise levels from Sellicks Hill Quarry (the Site) which is operated by Southern Quarries.

Attended noise measurements were undertaken on 7 July 2016 and 14 July 2016. On the days of the measurements, we understand quarry operations were typical of normal weekday activity, with the exception of the operation of the Primary Crusher, which was undergoing repairs.

Measurements at the nearest noise-sensitive receivers were repeated in October 2017 to capture noise levels with all site plant operational.

This report presents the results of the measurements, and provides comparison to relevant noise criteria for the Site.

2.0 Noise criteria

The South Australian Environment Protection Authority (EPA) provides noise criteria for noise sources in order to satisfy the General Environmental Duty, as defined under the South Australian *Environment Protection Act 1993*. The noise criteria are set by the *Environment Protection (Noise) Policy 2007* (Noise EPP).

Under the Noise EPP, noise criteria are determined based on the land uses for the noise source and receiver, as promoted by the relevant Development Plan. An aerial image overlaid with the Site boundary and location of the nearest noise-sensitive receivers is shown in Figure 1.

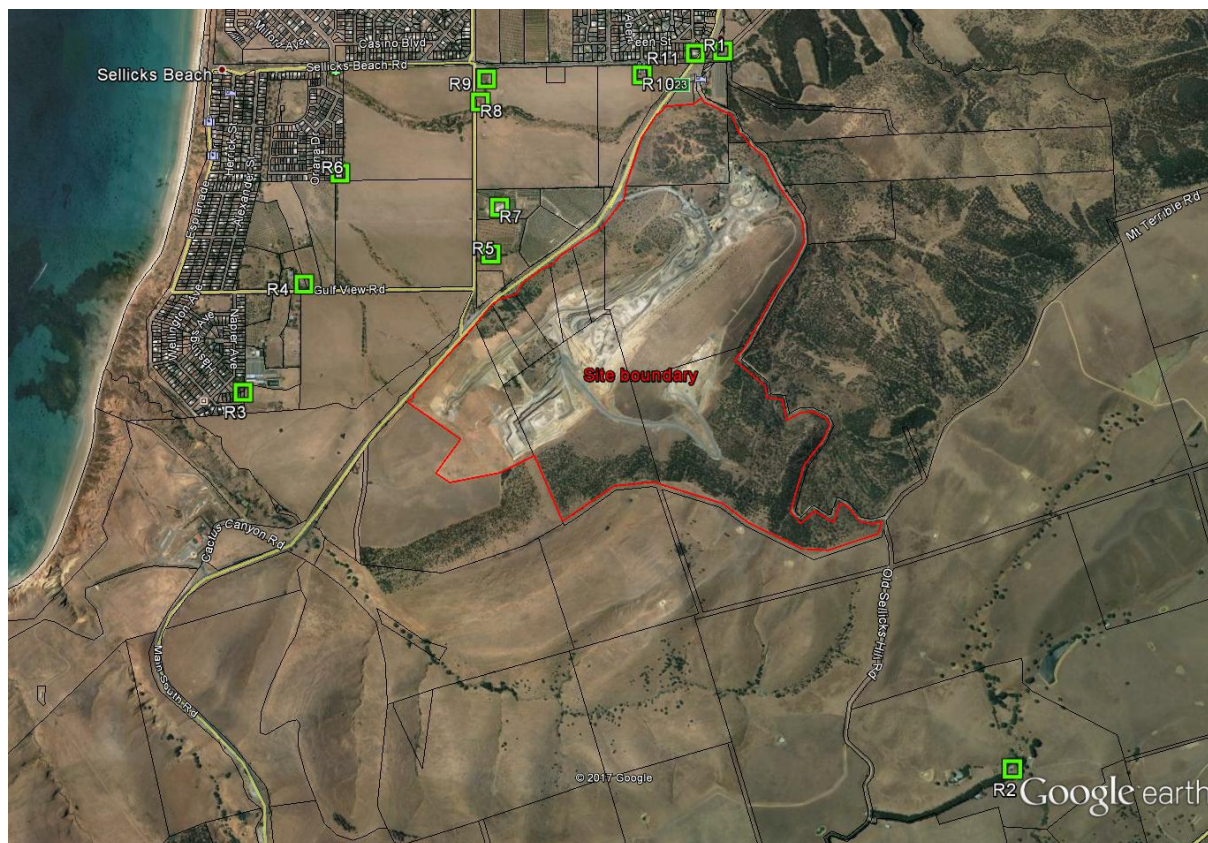


Figure 1 Sellicks Hill property and nearest noise-sensitive receivers

Noise criteria for the noise-sensitive receiver locations surrounding the Site are summarised below:

Location	Noise criteria [dB(A)]	
	Day	Night
R1, R2, R4, R5, R7, R8, R9, R10	55	48
R3, R6, R11	52	45

In accordance with the Noise EPP, measured noise levels must be adjusted by the following amounts if the noise source contains modulation, tonal, impulsive or low-frequency characteristics:

- noise source contains 1 characteristic, add 5 dB(A)
- noise source contains 2 characteristics, add 8 dB(A)
- noise source contains 3 or 4 characteristics, add 10 dB(A)

Further details on the derivation of noise criteria are provided in Appendix A.

3.0 Assessment

3.1 Site operations

We understand that crushing operations at the Sellicks Hill Quarry occur between 06:00 and 16:00 on weekdays. Work outside of these hours is undertaken on an “as-needed” basis, depending on demand for materials produced by the quarry. Screenings Transport currently operate 2 shifts on weekdays, and after 16:00 drivers self-load trucks. Night shift is not operated on weekends.

Southern Quarries advised that the following noise-generating items of plant are operational on the site:

Mobile plant

- 1x Hitachi EX1200 excavator
- 3x CAT 775 Dump Trucks (2x 775F, 1x 775E)
- 4x Volvo A40F Articulated dump trucks (2 owned by Southern Quarries, 2 Contractor owned vehicles)
- 1x CAT 988H Front End Loader
- 1x CAT 980H Front End Loader
- 1x CAT 972H Front End Loader
- 1x Volvo L180G Front End Loader
- 1x Hitachi 47 Tonne Excavator
- 1x Clark 553 Bobcat
- 1x Ingersoll Rand 660 Drill

Fixed plant

- MGO Primary Crush Plant
- MGO Secondary / Tertiary Plant
 - 4x Crusher
 - 6x screens
 - Feeders, conveyors
- #2 Plant (Roadbase)
 - 2x crushers
 - 2x screens
 - 1x pugmill
 - Conveyors
- Sand Plant
 - 1x crusher
 - 1x Air classifier
 - 1x Screen
 - Conveyors
- Direct mix concrete plant

3.2 Instrumentation

Noise measurements were undertaken using a Brüel & Kjær Type 2250 hand-held sound level meter. Type 2250 is a Class 1 integrating-averaging Sound Level Meter as defined under IEC 61672-1:2002, and is suitable for field and laboratory use.

For the measurements taken in 2016, the calibration of the sound level meter was checked prior to, and at the completion of, the noise measurements with a Rion NC-73 portable sound level calibrator. For 2017 measurements a Brüel & Kjær Type 4231 portable calibrator was used.

Each of these items of equipment carry a current certificate of calibration from a NATA certified laboratory. The details of the equipment are provided in Table 1.

Table 1 Instrumentation details

Name	Serial Number	Description	Calibration due date
2016 measurements			
Brüel & Kjær Type 2250	3009287	Hand held sound level meter, Class 1	09/03/2018
Rion NC-73	10196889	Sound level calibrator, Class 2	25/08/2016
2017 measurements			
Brüel & Kjær Type 2250	3009287	Hand held sound level meter, Class 1	09/03/2018
Brüel & Kjær Type 4231	2242325	Sound level calibrator, Class 1	20/07/2018

Copies of current equipment calibration certificates are provided in Appendix B.

3.3 2016 Measurements

Noise measurements were undertaken at the ten locations shown in Figure 2 in order to quantify noise emissions from the Site, and assess the noise contribution at the nearest noise-sensitive receivers. Due to the proximity of the Site to Main South Road (which generates significant road traffic noise), measurements were taken on Site as well as at nearby noise sensitive receiver locations.

Four measurements were taken at locations surrounding the Site boundary, three within the Site boundary, and three were taken at locations representative of the nearest noise-sensitive receivers. A background noise measurement was taken at an additional location approximately 1.3 km from the closest operations on Site, where noise from the Site was not audible.

On the day of the 2016 measurements Southern Quarries staff advised that the MGO Primary Crush plant was not operating due to a breakdown.



Figure 2 Measurement locations - 2016

Measured noise levels and observations are provided in Table 2, note that measurements at Locations 8-10 were taken in early morning to minimise the influence of traffic noise from Main South Road whilst measuring within the operating hours of the site.

Table 2 Noise measurement results and observations - 2016

Location	Date / Time	Duration	Observations	L _{Aeq}
1	07/07/2016 10:58	00:15:02	Low frequency hum from Sand Plant audible during lulls in traffic noise from Main South Road.	44
2	07/07/2016 13:18	00:15:02	Steady low frequency hum from Sand Plant, occasional noise of truck or mobile plant.	38
3	07/07/2016 12:56	00:15:02	Drill audible in bursts. Faint steady hum of other plant or drill engine when drill not audible.	42
4	07/07/2016 12:17	00:15:02	Occasional burst of noise from drilling. Quarry otherwise inaudible.	34
5	07/07/2016 11:27	00:15:02	Quarry only faintly audible when traffic noise from Main South Road not present. Otherwise controlled by traffic noise.	42
6	07/07/2016 09:49	00:15:02	Mobile plant accessing Fulton Hogan stockpiles, excavators undertaking works on haul road junction, and mobile plant on main East-West haul road. Occasional burst of noise from drill. Heavy vehicle traffic on Main South Road occasionally audible.	49

Location	Date / Time	Duration	Observations	L _{Aeq}
7	07/07/2016 10:24	00:15:06	Constant steady noise from Secondary and Tertiary crushing plant. Front end loaders and articulated dump truck movements around stockpiles.	66
8	14/07/2016 06:03	00:05:02	Quarry inaudible. Measurement controlled by traffic on Main South Road.	45
9	14/07/2016 06:18	00:05:10	Quarry inaudible. Noise from distant traffic on Main South Road, birds and nearby livestock, and steady tidal noise from beach.	44
10	14/07/2016 06:34	00:15:02	Low frequency hum occasionally audible from visible mobile plant operating on Southwestern extent of quarry site. Hum not audible when traffic passing on Main South Road. Some noise from birds and steady tidal noise from beach.	44
Background	07/07/2016 12:41	00:05:00	Breeze through crops, occasional noise from livestock.	27

3.4 2017 Measurements

Measurements were repeated in 2017 to capture noise from the fully-operational site. Southern Quarries staff advised that all plant was running, including the MGO Primary Crush plant. The 2017 noise measurements locations are shown in Figure 3. These locations corresponded to the closest residential receivers to the site which have the most stringent noise criteria, and are also where measured levels in 2016 were closest to criteria. Location 11 was added as representative of noise at the residential zone at the Southern-most end of Sellicks Beach.



Figure 3 Measurement locations - 2017

Measurements were taken in early morning to minimise the influence of traffic noise from Main South Road whilst measuring within the operating hours of the site. Quarry staff advised that on the morning of the measurements site plant would be fully operational after 06:15.

Measured noise levels and observations from the 2017 measurements are provided in Figure 3.

Table 3 Noise measurement results and observations - 2017

Location	Date / Time	Duration	Observations	L _{Aeq}
8 ⁽¹⁾ (Background)	9/10/2017 05:51	00:05:04	Traffic noise from vehicles on Main South Road. Birds in nearby trees.	51
8	9/10/2017 06:15	00:07:40	Quarry inaudible. Measurement controlled by traffic on Main South Road.	53
9	9/10/2017 06:37	00:05:07	Quarry inaudible. Distant traffic audible on Main South Road, birds in nearby foliage, and some tidal noise from Sellicks Beach.	43
10	9/10/2017 06:51	00:05:03	Quarry inaudible. Distant traffic audible on Main South Road, some noise from sheep in paddock adjacent to measurement location and birds in nearby trees.	42
11	9/10/2017 07:07	00:05:02	Quarry inaudible. Distant traffic audible on Main South Road. Some noise from residential properties nearby. Birds audible in nearby foliage.	44

Notes:

(1) A background noise measurement was taken at Location 8 prior to site start-up.

Quarry noise was inaudible at Locations 8-11, and therefore it was deemed unnecessary to repeat measurements at Locations 1-7. These locations are further from the site and subject to a less stringent criterion, or are located within the site boundary and therefore not assessed against Noise EPP criteria.

3.5 Discussion

3.5.1 Site boundary results

Measured noise levels from Table 2 were corrected for background noise and are shown in Table 4.

Table 4 Background-corrected noise levels within site boundary

Location	Background corrected noise level [L _{Aeq}]
1	44
2	38
3	42
4	33
5	42
6	49
7	66

Measured noise levels reported in Table 4 are not directly comparable with the Noise EPP criteria. Although the Noise EPP criteria is only applicable at noise sensitive receivers, it follows that if noise levels at a location close to the source comply with the noise criteria, it is highly likely that compliance will be achieved at the receiver locations in question, given the setback distances involved.

These results show that noise levels at the Eastern and Southern boundaries of the site (Locations 1-4) satisfy the most stringent of the Noise EPP criteria. The closest receivers to the site on the Eastern and Southern sides are dwellings located at least 1200 metres from the site boundary. These dwellings are surrounded by farming land.

Noise levels at Location 5 were also lower than the most stringent Noise EPP criterion, noting that Location 5 is between receivers and the site boundary.

The noise levels measured at Locations 6 and 7 were expected given the close proximity of these measurement locations to quarry plant.

3.5.2 Results at noise sensitive locations

Three measurements were undertaken in 2016 at locations representative of the closest noise sensitive receivers on the Western side of the site.

Table 5 Measured noise levels at noise sensitive receiver locations

Location	Measured noise level [L _{Aeq}]	Noise criteria for closest receiver	
		Day	Night
8	45	52	45
9	44	55	48
10	44	55	48

None of the measured noise levels exceeded the noise criteria.

The 2017 noise monitoring results are presented on Table 6.

Table 6 Measured noise levels, noise sensitive receiver locations

Location	Measured noise level [L _{Aeq}]	Noise criteria for closest receiver	
		Day	Night
8	53	52	45
9	43	55	48
10	42	55	48
11	44	52	45

As mentioned in Section 3.4, measured noise levels at Location 8 were controlled by steady traffic on Main South Road. The Site was not audible during short lulls in traffic flow. An increase in measured noise level between the 2016 and 2017 measurements was attributed to increased traffic flow on the day of measurement in 2017 compared to 2016, and higher levels of bird noise near the measurement location in the 2017 measurement. Based upon observations on site and measured noise levels at the other 2017 measurement locations, we are of the opinion that noise levels from the Site at Location 8 would have satisfied both the day and night time noise criteria.

As such, we are of the opinion that the full Sellicks Hill Quarry site is compliant with the most stringent applicable noise criteria.

4.0 Conclusion

AECOM has undertaken an assessment of operational noise from the Sellicks Hill Quarry which is operated by Southern Quarries.

Noise measurements at locations within and surrounding the site boundary were undertaken during a site visit on 7 July 2016. Three additional noise measurements were undertaken at nearby noise sensitive receivers on the morning of 14 July 2016. We were advised that the primary crusher was not operational during these measurements due to breakdown.

Measurements at locations representative of the closest noise-sensitive receivers were repeated in 2017 for the site in full operation, as advised by Site management.

In all cases, measured noise levels from current Site operations were found to satisfy the relevant noise criteria for day and night time assessment periods.

Appendix A

Noise criteria derivation

Appendix A Noise criteria derivation

Clause 25 of the *Environment Protection Act 1993* provides the following general environmental duty:

“A person must not undertake an activity that pollutes, or might pollute, the environment unless the person takes all reasonable and practicable measures to prevent or minimise any resulting environmental harm.”

The *Environment Protection (Noise) Policy 2007* sets noise goals that compliance with will satisfy the general environmental duty. These noise goals are based on the uses principally promoted by the relevant Development Plan(s) (Onkaparinga Council Development Plan and Yankalilla (DC) Development Plan).

The indicative noise factors from the Noise EPP for determining noise goals are presented in Noise EPP Table 1 and Table 2. Indicative noise factors are selected from Table 1 when both the noise source and noise-affected premises fall within one of the two specified industrial land uses, otherwise Table 2 is used. The day period refers to the time between 7am and 10pm, and the night period from 10pm to 7am.

Noise EPP Table 1 (Clause 5, subclause (9)(1a))

Land use category	Indicative noise factor – dB(A)	
	Day	Night
General Industry	65	65
Special Industry	70	70

Noise EPP Table 2 (Clause 5, subclause (9)(1b)) from the Noise EPP

Land use category	Indicative noise factor – dB(A)	
	Day	Night
Rural living	47	40
Residential	52	45
Rural Industry	57	50
Light Industry	57	50
Commercial	62	55
General Industry	65	55
Special Industry	70	60

Figure 4 shows the zoning of the areas surrounding the Site, as adopted from the Onkaparinga Council Development Plan and Yankalilla (DC) Development Plan.

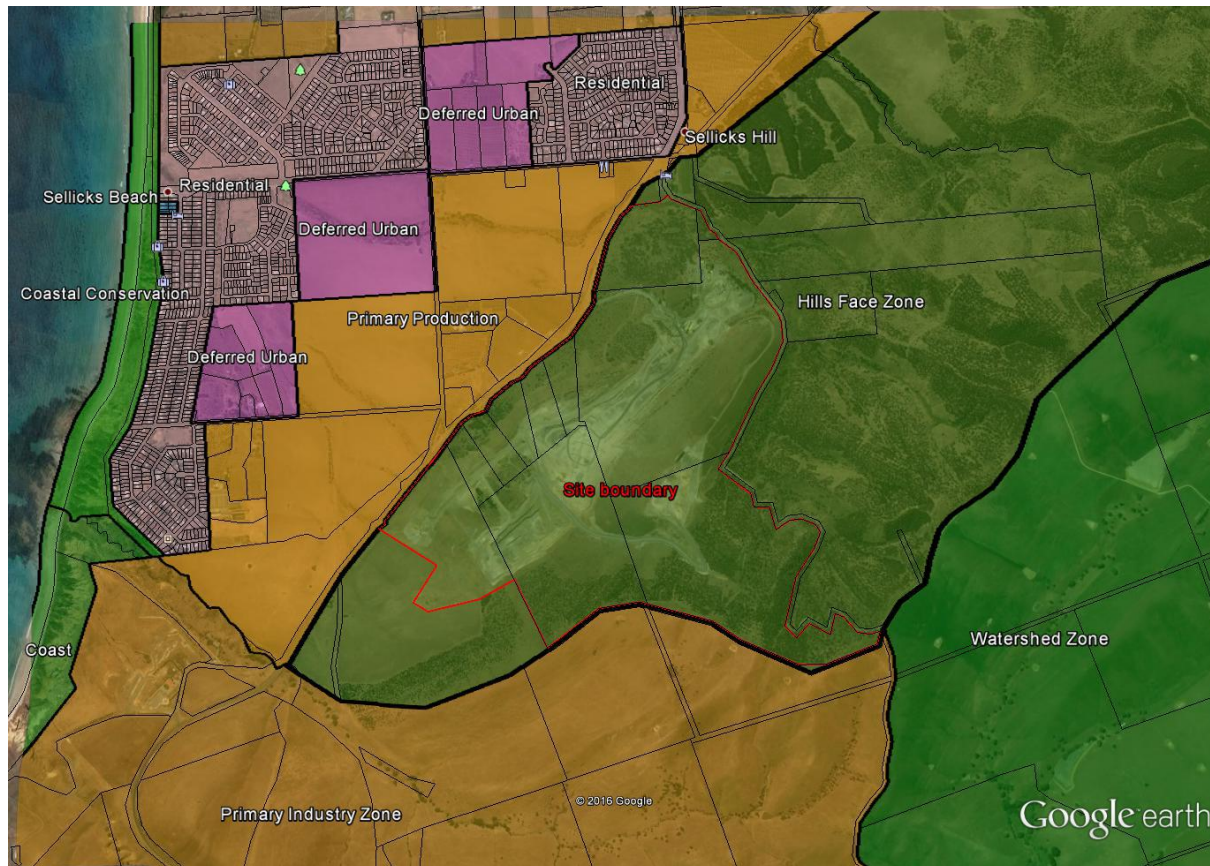


Figure 4 Zoning of the Sellicks Hill site and surrounding receivers

The Site is located within a Hills Face Zone. The nearest noise-sensitive receivers are located in Residential, Deferred Urban, Watershed, and Primary Production Zones.

The following is an extract from the Onkaparinga Council Development Plan which provides the objectives and principles of development control for the Hills Face, Residential (Policy Area 45), Deferred Urban, and Primary Production Zones.

Hills Face Zone

Objective 1: A zone in which the natural character is preserved and enhanced or re-established in order to:

- a. provide a natural backdrop to the Adelaide Plain and a contrast to the urban area
- b. preserve biodiversity and restore locally indigenous vegetation and fauna habitats close to metropolitan Adelaide
- c. provide for passive recreation in an area of natural character close to the metropolitan area
- d. provide a part of the buffer area between metropolitan districts and prevent the urban area extending into the western slopes of the Mount Lofty Ranges
- e. ensure that the community is not required to bear the cost of providing services to and within the zone.

Objective 2: A zone accommodating low intensity agricultural activities and public/private open space and one where structures are sited and designed in such a way as to:

- a. preserve and enhance the natural character or assist in the re-establishment of a natural character in the zone

- b. *limit the visual intrusion of development in the zone, particularly when viewed from roads within the zone or from the Adelaide Plain*
- c. *not create, either in themselves, or in association with other developments, a potential demand for the provision of services at a cost to the community*
- d. *prevent the loss of life and property resulting from bushfires.*

Objective 3: *Development that contributes to the desired character of the zone*

Desired character

The western slopes of the South Mount Lofty Ranges in Metropolitan Adelaide are an important natural asset to both the population of the urban area and the tourism industry. Development which is undertaken in this zone should not only preserve but should also enhance the natural character of the zone or assist in the re-establishment of a natural character. The term 'natural character' refers to the natural topography, native vegetation and colours, such as greens and browns of non-reflective earthen tones, normally associated with a natural landscape. Additionally, natural character refers to the open character of the land in those areas of the zone where open grazing currently predominates.

In those parts of the zone where, prior to 1975, concentrations of smaller than average allotments were created, special attention needs to be paid to the scale, design and landscaping of development because there are fewer siting options for development on these allotments.

The extent of native vegetation and open grassland, the steep slopes and the difficulty of access combine to make this zone a high fire risk area. It is important that developments incorporate fire protection measures to minimize the fire risk. While vegetation management is an important part of minimizing the fire risk, the destruction of existing native vegetation and failure to provide landscaping as to screen buildings and improve the amenity of the zone are not considered acceptable fire protection measures.

The zone is not a residential zone and so services provided in an urban area will not be provided in this zone. Accordingly, development should not be undertaken if it is likely, in itself or in association with other development, to create a potential demand for such services. Activities and projects by State and local agencies which are considered necessary in this zone should be located, sited, constructed and maintained to promote the objectives for the zone and complement the principles of development control relating to this zone. Tourist facilities are appropriate provided they are of a low-scale and are sited unobtrusively.

Principals of Development Control

Land Use

- 1 *Development should not be undertaken unless it is associated with a low intensity agricultural activity, a public open space area or a private use of an open character, or is a detached single storey dwelling, including outbuildings and structures normally associated with such dwellings, on a single allotment.*
- 2 *Development listed as non-complying is generally inappropriate and not acceptable unless it can be demonstrated that it does not undermine the objectives and principles of the Development Plan.*
- 3 *The excavation and/or filling of land outside townships and urban areas should:*
 - a. *be kept to a minimum and be limited to a maximum depth or height no greater than 1.5 metres so as to preserve the natural form of the land and the native vegetation*
 - b. *only be undertaken in order to reduce the visual impact of buildings, including structures, or in order to construct water storage facilities for use on the allotment*
 - c. *only be undertaken if the resultant slope can be stabilised to prevent erosion, and result in stable scree slopes which are covered with top soil and landscaped so as to preserve and enhance the natural character or assist in the re-establishment of the natural character of the area.*
- 4 *New mines and quarries should not be developed within the zone.*

- 5 *Extensions to existing mines and quarries should only be undertaken within the zone where:*
- a. *the overall benefit to the community from the minerals produced together with the planned after-use of the site outweighs any loss of amenity or other resources resulting from the extractive operations*
 - b. *the site contains minerals of the necessary quality and, for reasons of location, quality or other factors, no practical alternative source is available*
 - c. *the proposed operation would maximize the utilisation of the resource but minimize the adverse impacts of extraction*
 - d. *the proposed workings cannot be seen from any part of the Adelaide Plain; from any arterial road, scenic road or other substantial traffic route*
 - e. *an effective buffer of land and native trees exists around the site to protect adjoining land users from effects of the operation*
 - f. *the operation is to be conducted in accordance with a staged development and rehabilitation scheme which:*
 - i. *ensures that danger and unreasonable damage or nuisance does not arise from workings or any operations associated with them*
 - ii. *provides for progressive rehabilitation of disturbed areas and for landscaping with locally indigenous plant species in order to produce a site which assists in the re-establishment of a natural character*
 - iii. *provides for the removal of buildings, plant, equipment and rubbish when operations are completed*
 - iv. *provides scope for suitable after-uses.*
- 6 *Landfill operations should not be developed within the Mount Lofty Ranges Watershed.*
- 7 *Landfill operations should not be developed outside the Mount Lofty Ranges Watershed, unless the site meets at least one of the following criteria:*
- a. *is a disused quarry*
 - b. *has ground slopes no greater than 10 per cent and has adequate separation distances from any above ground and underground water resource and from any potentially incompatible land uses and activities.*
- 8 *Outside the Mount Lofty Ranges Watershed, small-scale transfer stations may be appropriate in unobtrusive locations.*
- 9 *Horticultural activities should:*
- a. *be located a minimum distance of 50 metres from the edge of stands of significant native vegetation, including native grasses*
 - b. *be located no closer than 50 metres of a lake, watercourse or wetland.*
- 10 *Horticultural activities located within 300 metres of a dwelling, tourist accommodation facility or any other sensitive receptor should incorporate a suitably sized vegetated buffer area/strip to minimise any adverse impacts from the horticultural activity (including noise, chemical spray drift and run-off) on the sensitive receptor.*

Residential Zone (Policy Area 45)

Objective 1: *A residential coastal settlement that caters for a small permanent and seasonal holiday population*

Objective 2: *Development that contributes to the desired character of the policy area.*

Desired character

It is envisaged that the policy area will continue to be developed as a settlement with coastal-rural residential character. Low intensity development, characterised by very large allotment sizes, deep set backs and large separation distances between dwellings, is indicative of development constraints associated with the limited capacity of physical and social infrastructure available to the area. The physical limits of the settlement will be defined by substantial landscaping designed to minimise the impacts of adjacent agricultural activity upon residential areas.

The policy area does not have access to mains sewer. Accordingly, development will not be undertaken if it is likely, in itself or in association with other development, to create potential demand for such services. Therefore residential development will be restricted to a single dwelling on an allotment.

It is envisaged that building design will incorporate significant articulation and variation in materials to create visual relief and architectural interest in the way buildings address the street.

The retention of public open space in the form of linear networks positioned along natural drainage lines will assist with stormwater management and provide off-road pedestrian and bicycle links that add to the system connecting throughout the settlement and through to the coast. New buildings and additions will be positioned to define the edges of, and face onto, public parks and accessible open spaces in order to provide passive surveillance and encourage the safe use of these spaces by the public.

Principals of Development Control

Land Use

1 The following forms of development are envisaged in the policy area:

- *bed and breakfast*
- *detached dwelling*
- *domestic outbuilding in association with a dwelling*
- *domestic structure*
- *dwelling addition*
- *small scale tourist accommodation*
- *supported accommodation*

Deferred Urban Zone

Objective 1: *A zone accommodating a restricted range of rural uses that are not prejudicial to development of the land for urban purposes and maintain the rural appearance of the zone.*

Objective 2: *A zone comprising land to be used primarily for broad-acre cropping and grazing purposes until required for future urban expansion.*

Objective 3: *Prevention of development likely to be incompatible with long-term urban development, or likely to be detrimental to the orderly and efficient servicing and conversion of the land for urban use.*

Objective 4: *The provision of interfaces along transport corridors and adjacent rural uses to manage potential sources of impact and accommodate stormwater and wastewater management practices.*

Objective 5: *The protection of the Aldinga Scrub Conservation Park from the adverse impacts of development.*

Objective 6: *Retention of land at Reynella for agricultural purposes, until such time as required for use as a transportation corridor.*

Objective 7: *The provision of essential infrastructure and community services in Aldinga, Aldinga Beach and Sellicks Beach that:*

1. *is located and designed to enable integration with existing and/or future residential development*
2. *is accessible to existing and proposed residential areas*
3. *is in accordance with the centres hierarchy as described in the General Section provisions*
4. *facilitates the economic connection to infrastructure and services as required*
5. *does not detrimentally impact on the environmental water requirements of the Aldinga Scrub Conservation Park.*

Objective 8: *Development that contributes to the desired character of the zone*

Desired character

The zone primarily comprises land for future urban expansion. While the zoning is to be regarded as a holding measure with its ultimate use not yet determined, development within the zone will generally comprise low-scale agricultural uses that do not prejudice the orderly conversion of the land for residential purposes.

It is envisaged that development will only occur following the rezoning of the land and the completion of detailed structure planning to ensure an orderly extension of existing urban areas and to prevent the creation of isolated communities that are remote from infrastructure and services.

Principals of Development Control

Land Use

- 1 *The following forms of development are envisaged in the zone:*
 - *Broad-acre cropping*
 - *Grazing.*
- 2 *Development listed as non-complying is generally inappropriate*
- 3 *Development should not be undertaken if it will be prejudicial to the orderly and economic development of future urban land uses within the zone.*
- 4 *Dwellings should not be located within Reynella.*
- 5 *Urban development should not be undertaken until detailed structure planning has been prepared and implemented for the zone.*
- 6 *Development should not be undertaken in the vicinity of known mineral deposits where any of the following applies:*
 - a. *the full extent and significance of such deposits has not been determined*
 - b. *the development would be incompatible with mining operation*
 - c. *the development would add to the cost of extracting the resource.*

Primary Production Zone

Objective 1: *The long term continuation of primary production where natural resources are not jeopardised.*

Objective 2: *Economically productive, efficient and environmentally sustainable primary production.*

Objective 3: *Allotments of a size and configuration that promote the efficient use of land for primary production.*

Objective 4: Protection of primary production from encroachment by incompatible land uses and protection of scenic qualities of rural landscapes.

Objective 5: The extension of the economic base of the region in an environmentally sensitive and sustainable manner.

Objective 6: The enhancement of the rural character, key scenic routes, scenic surrounds to townships, amenity and prominent landscape for the enjoyment of residents and visitors.

Objective 7: The development of a sustainable tourism industry with accommodation, attractions and facilities which relate to and interpret the natural and cultural resources of the region, and increase the opportunities for visitors to stay overnight.

Objective 8: Encouragement of the establishment of appropriately scaled 'value added' commercial activities to utilise local rural production, including the establishment of niche market products, within suitable areas and resulting in minimal landscape intrusion and environmental impact.

Objective 9: The maintenance and enhancement of the natural resources of the zone.

Objective 10: Establishment of flora and fauna corridors to preserve rural character and improve biodiversity.

Objective 11: Development that contributes to the desired character of the zone

Desired character

The zone is found generally in the eastern half of Council's land area and is characterised by a combination of landscape, soils and climate which imparts, throughout the region, a highly distinctive and rural 'sense of place'. This is of value to visitors attracted by the hills, wineries and associated vineyards, orchards, scenery and nearby beaches.

Demand for the division of rural land in the area is likely, if unimpeded, to accelerate because of relatively convenient travel times for residents working in the city and suburbs of Adelaide. Further conversion of existing productive land for purposes which do not complement efficient rural production is not envisaged in the zone.

Much of the area is suitable for a range of agricultural production, notably vines, grazing, cropping, almonds, strawberries and other similar foods including niche market products. Accommodation of associated 'value added' industries in appropriate locations is envisaged, along with appropriately scaled tourism infrastructure.

Wineries and small scale, low impact agricultural and home based industries are encouraged where they expand the economic base of the zone. Industries will be based upon the processing of agricultural produce primarily from the region. Home based industries will be based on rural, arts, crafts, tourist, cultural or heritage activities appropriate to the region.

Development will complement the zone's character and enhance tourist or heritage activities and be compatible with local areas. Larger scale industries and related activities are more suited to designated industrial or commercial zones within townships or other urban areas.

It is a zone which requires its primary production to be undertaken using environmentally sustainable practices, while maintaining the existing rural character in the long term. It is important that native vegetation, water resources and of riverine corridors through both private and public stewardship are protected to enhance biodiversity.

Principals of Development Control

Land Use

- 1 The following forms of development are envisaged in the zone:
 - a. bulk handling and storage facility
 - b. commercial forestry
 - c. dairy farming

- d. *farming*
 - e. *horticulture*
 - f. *intensive animal keeping*
 - g. *small scale industry in association with farming*
 - h. *tourist accommodation (including the diversification of existing farming activities and conversion of farm buildings)*
 - i. *winery*
- 2 *Development listed as non-complying is generally inappropriate.*
 - 3 *Development involving the expansion of existing uses which are not in accord with objectives for the zone should not be undertaken.*
 - 4 *Development within the zone should be compatible with its use as a water catchment and storage area, and with its values as an area of agricultural production and scenic quality.*
 - 5 *Development should ensure that genuine agricultural activities are not prejudiced.*
 - 6 *Development which would remove productive land from agriculture or diminish its overall productivity for primary production should not be undertaken unless the land is required for essential public purposes.*
 - 7 *Primary production should be carried out having regard to water conservation, the preservation of bushland remnants and landscape beauty.*
 - 8 *Activities which produce strong organic, chemical, or other intractable wastes should not be established in the zone (other than wineries, where the risk to water supply is negligible with appropriate management, design and siting).*
 - 9 *A shop should be:*
 - a. *ancillary to primary production or processing uses or tourist accommodation or other tourist development*
 - b. *located on the same site as the primary use.*
 - 10 *Buildings should not impair the character of rural areas by reason of their scale or siting.*

The following is an extract from the Yankalilla District Council Development Plan which provides the objectives and principles of development control for the Watershed Zone.

Watershed Zone

General

Objective 1: *Maintenance and enhancement of the natural resources of the zone.*

Objective 2: *Enhancement of the Myponga Reservoir watershed catchment as a source of high quality water.*

Objective 3: *Long term sustainability of rural production.*

Objective 4: *Preservation and restoration of remnant native vegetation, including native vegetation associated with swamps, bogs, wetlands and watercourses.*

Objective 5: *Enhancement of the amenity and landscape for the enjoyment of residents and visitors.*

Watershed Control

Objective 6: *The protection of the Myponga Reservoir Watershed against pollution and contamination.*

Objective 7: *The prevention of development which could lead to a deterioration in the quality of surface or underground waters within the Myponga Reservoir Watershed.*

The zone includes land within the watershed of the Mount Lofty Ranges which contains the catchment areas for existing and proposed reservoirs serving metropolitan Adelaide and adjacent areas. The quality of water within the existing reservoirs is deteriorating at an alarming rate. Special control of development in the watershed is necessary to ensure a continued economic supply of safe drinking water. In particular there should be no additional allotments created since these are likely to give rise to additional development and activities. It is also important that no development which increases the level of pollution within the watersheds takes place.

Principals of Development Control

Land Use

- 1 *The following forms of development are envisaged in the zone:*
 - a. *bulk handling and storage facility*
 - b. *commercial forestry*
 - c. *dairy farming*
 - d. *farming*
 - e. *horticulture*
 - f. *intensive animal keeping*
 - g. *small scale industry in association with farming*
 - h. *tourist accommodation (including the diversification of existing farming activities and conversion of farm buildings)*
 - i. *winery*
- 2 *Development listed as non-complying is generally inappropriate.*
- 3 *Development involving the expansion of existing uses which are not in accord with objectives for the zone should not be undertaken.*
- 4 *Development within the zone should be compatible with its use as a water catchment and storage area, and with its values as an area of agricultural production and scenic quality.*
- 5 *Development should ensure that genuine agricultural activities are not prejudiced.*
- 6 *Development which would remove productive land from agriculture or diminish its overall productivity for primary production should not be undertaken unless the land is required for essential public purposes.*
- 7 *Primary production should be carried out having regard to water conservation, the preservation of bushland remnants and landscape beauty.*
- 8 *Activities which produce strong organic, chemical, or other intractable wastes should not be established in the zone (other than wineries, where the risk to water supply is negligible with appropriate management, design and siting).*
- 9 *A shop should be:*
 - a. *ancillary to primary production or processing uses or tourist accommodation or other tourist development*
 - b. *located on the same site as the primary use.*

Buildings should not impair the character of rural areas by reason of their scale or siting.

Based on the land uses principally promoted by the Development Plans, we believe that the Noise EPP Land Use Categories shown in the table below are applicable to the zones:

Table 7 Land Use Categories for Development Plan Zones

Zone	Land Use Category
Hills Face Zone	Residential
Residential Zone	Residential
Watershed Zone	Rural industry
Deferred Urban Zone	Rural industry
Primary Production Zone	Rural Industry

The Noise EPP in Clause 5 states:

- “(4) If the land uses principally promoted by the relevant Development Plan provisions for the noise source and those principally promoted by the relevant Development Plan provisions for the noise-affected premises all fall within a single land use category, the indicative noise level for the noise source is the indicative noise factor for that land use category.*
- (5) Subject to subclause (6), if the land uses principally promoted by the relevant Development Plan provisions for the noise source and those principally promoted by the relevant Development Plan provisions for the noise-affected premises do not all fall within a single land use category, the indicative noise level is the average of the indicative noise factors for the land use categories within which those land uses fall.*
- (6) Subclause (5) does not apply if the locality in which the noise source is situated is separated from the locality in which the noise-affected premises are situated by another locality that is (on an imaginary straight line joining the noise source and the noise-affected premises) at least 100 metres wide, but instead subclause (4) applies as if the land uses principally promoted by the relevant Development Plan provisions for the noise source were the same as those principally promoted by the relevant Development Plan provisions for the noise-affected premises.”*

Noise criteria for receivers around the Site, derived in accordance with Subclauses (4) (5) and (6) are shown in the Table below.

Location	Receiver location zoning as defined in the relevant Development Plan	Applicable Noise EPP Land Use Category for receiver	Noise criteria day / night [dB(A)]
R1, R2, R5, R7, R8, R9, R10	Primary Production Zone	Rural industry	55/48
R3, R6, R11	Residential Zone	Residential	52/45
R4	Deferred Urban Zone	Rural industry	55/48

Appendix B

Equipment calibration
certificates

CERTIFICATE OF CALIBRATION

Certificate No: CAU1600212

Page 1 of 10

CALIBRATION OF:

Sound Level Meter:	Brüel & Kjær	2250	No: 3009287
Microphone:	Brüel & Kjær	4189	No: 3005475
Preamplifier:	Brüel & Kjær	ZC-0032	No: 23848
Supplied Calibrator:	N/A	N/A	No: N/A
Software version:	BZ7222 Version 4.5.2	Pattern Approval:	Pending
Instruction manual:	BE1712-22	Identification:	N/A

CUSTOMER:

AECOM
Level 28
91 King William Street
Adelaide SA 5000

CALIBRATION CONDITIONS:

Preconditioning: 4 hours at 23 °C
Environment conditions: *see actual values in Environmental conditions sections*

SPECIFICATIONS:

The Sound Level Meter has been calibrated in accordance with the requirements as specified in IEC61672-3:2006 class 1. Procedures from IEC 61672-3:2006 were used to perform the periodic tests.

PROCEDURE:

The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System B&K 3630 with application software type 7763 (version 6.0 - DB: 6.00) and test procedure 2250-4189.

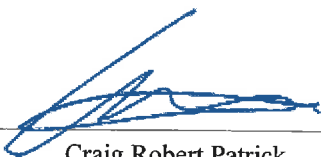
RESULTS:

X	Initial calibration		Calibration prior to repair/adjustment
	Calibration without repair/adjustment		Calibration after repair/adjustment

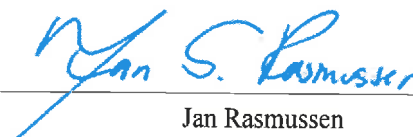
The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-4/02 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device under calibration.

Date of Calibration: 09/03/2016

Certificate issued: 10/03/2016



Craig Robert Patrick
Calibration Technician



Jan Rasmussen
Approved signatory

CERTIFICATE OF CALIBRATION

CERTIFICATE NO: 17777

EQUIPMENT TESTED: Sound Level Calibrator

Manufacturer: Rion
Type No: NC-73 **Serial No:** 10196889
Owner: AECOM Australia Pty Ltd
Level 28, 91 King William Street
Adelaide SA 5000

Tests Performed: Measured output pressure level was found to be:

Parameter	Pre-Adj	Adj Y/N	Output: (db re 20 µPa)	Frequency: (Hz)	THD&N (%)
Level 1:	NA	N	93.89	992.60	2.51
Level 2:	NA	N	NA	NA	NA
Uncertainty:			±0.11 dB	±0.05 Hz	±0.2 %
Uncertainty (at 95% c.l.) k=2					

CONDITION OF TEST:

Ambient Pressure: 1000 hPa ±1.5 hPa **Relative Humidity:** 49% ±5%
Temperature: 23 °C ±2° C
Date of Calibration: 25/08/2015 **Issue Date:** 25/08/2015
Acu-Vib Test Procedure: AVP02 (Calibrators)
Test Method: AS IEC 60942 - 2004

CHECKED BY: *[Signature]* **AUTHORISED SIGNATURE:**

[Signature]
Jack Klett

Accredited for compliance with ISO/IEC 17025

The results of the tests, calibration and/or measurements included in this document are traceable to Australian/national standards.



Accredited Lab. 9262
Acoustic and Vibration
Measurements



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Mobile: 0413 809806
Web site: www.acu-vib.com.au

CERTIFICATE OF CALIBRATION

No.: CAU1700607

CALIBRATION OF:

Calibrator: Brüel & Kjær 4231 No: 2242325
Description: Acoustical Calibrator
Identification: N/A
IEC Class: 1

CUSTOMER:

AECOM
Level 28
91 King William Street
Adelaide SA 5000

CALIBRATION CONDITIONS:

Preconditioning: 4 hours at 23 °C
Environment conditions: Air temperature: 22.7 °C
Air pressure: 100.6 kPa
Relative Humidity: 31.6 %RH

SPECIFICATIONS:

The acoustic calibrator has been calibrated in accordance with the requirements as specified in IEC60942.

PROCEDURE:

The measurements have been performed with the assistance of Brüel & Kjær acoustic calibrator calibration application software Type 7794 using calibration procedure 4231 Complete

RESULTS:

- | | |
|---|---|
| <input type="checkbox"/> Initial Calibration | <input type="checkbox"/> Calibration before repair/adjustment |
| <input checked="" type="checkbox"/> Recalibration without repair/adjustment | <input type="checkbox"/> Calibration after repair/adjustment |

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with EA-4/02 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the calibrator under calibration.

Date of Calibration: 20/07/2017

Certificate issued: 20/07/2017


Jan Rasmussen
Approved Signatory

Attachment 6

Confidential – Aboriginal Affairs and Reconciliation Report

Attachment 7

Stakeholder Engagement Letter

Dear Stakeholder,

1 May 2023

Southern Quarries Pty Ltd (Southern Quarries) operates Sellick's Hill Quarry, located on Main South Road, Sellick's Beach, overlain by a series of mining tenures that include:

- Extractive Mineral Lease (EML) 5440
- Private Mine (PM) 167 and 237
- Mineral Claim (MC) 4414

Groundwork Plus (SA) Pty Ltd (Groundwork Plus) are assisting Southern Quarries in applying for a Miscellaneous Purposes Licence Application (MPLA) for the southern section of Private Mine (PM) 237 to be utilised for overburden stockpiling, refer to **Drawing No. 1741.DRG.149 – Site Location Plan** for a visual understanding of the land parcel in question.

As a result of the stakeholder engagement process for the MC on the east of the Quarry and the delivery of the combined Mine Operations Plan / Program for Environmental Protection (MOP PEPR) in 2018, stakeholders voiced the importance of visual screening of the Quarry to external receptors using Main South Road and from the Sellick's Beach township. Subsequent to this feedback, initial concept designs were presented and supported throughout the Community Open Days that followed. The Quarry then has undertaken further conceptual overburden and pit designs to continue along the currently approved area to further screen the Quarry in the mid to long term from road users travelling south to north along Main South Road.

The Context

The visual aspect of looking into the Quarry when travelling south along Main South Road was considered by the company in context of views and external receptors and therefore, additional land has been procured (road reserve) to enable the extension of the Western Screening Mound (WSM) that is currently viewed alongside Main South Road. The WSM is performing well as a visual mitigation measure to residents to the Sellick's Beach direction and the intent is for the extension of the WSM to the south to provide a similar visual relief for motorists in the mid to long-term travelling south to north along Main South Road.

Within the application, there will be no Mining Operations including drilling and blasting and/or crushing and screening within the southern aspect of the WSM. Operations will be limited to hauling of overburden material, placement of overburden material, shaping of the area and rehabilitation (short term with soil stabilisation (rye grass planting)) followed by tree planting after stabilisation is suffice to withstand planting of tubestocks.

The quarry generates overburden, which is generally lower grade material that is near to the surface, this material can generally only meet fill-based markets and therefore in the quarrying industry considered 'overburden' and placed in different areas of a site unlikely to be sold.

In the currently approved MOP PEPR, **Drawing No. 1741.DRG.047R2 – Quarry Development Plan – Long Term** highlights the currently approved pit shell and overburden design, note the overburden design or WSM ceases to the north of the road reserve on PM 237.

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120 Spencer Street, Melbourne
Vic 3000

GEOTECHNICAL LABORATORY

Unit 78/109 Leitchs Road
Brendale Qld 4500

Phone: 0417 615 217

The Legislative Pathway

PM 237 is currently divided by a road reserve. Recently, Southern Quarries have purchased the road reserve from the Onkaparinga Council in which the land parcel is subject of the MPLA (the Site) under the Part 8 of the *Mining Act 1971* and Part 9 of the *Mining Regulations 2020*. Under the legislation, an MPLA is a *mineral tenement that is granted for ancillary operations*. The MPLA land cannot be extracted alike the adjacent tenure of a PM or EML. For instance, an MPLA is usually subject to tenure to approve activities such as the building of offices, weighbridges and for the development of overburden storage locations on a quarry site. Southern Quarries are currently undertaking an application for the subject land of which will be submitted to the Department for Energy and Mining (DEM) for assessment against all the operational, social and environmental subject matter. DEM can then send the proposal out to other coregulatory bodies (Department for Environment and Water (DEW), Environment Protection Authority (EPA) etc. All relevant environmental impacts must be addressed in the proposal alike the adjacent approvals process. Once the document is submitted, a statutory consultation process will follow allowing stakeholders to deliver feedback on the proposal.

For transparency, the link below provides guidance on the relevant Terms of Reference (TOR) that are to be adhered to when developing an application to DEM. TOR 003 – Extractive Mineral Quarry Lease / Licence Applications is the guidance document that Southern Quarries are developing the application in accordance with.

Link to Terms of Reference 003:

<https://sarigbasis.pir.sa.gov.au/WebtopEw/ws/samref/sarig1/image/DDD/MD003.pdf>

Conceptual Designs

The overburden landform will be constructed in accordance and with the same design parameters with the adjacent WSM at the Quarry, refer to the draft design **Drawing No. 1741.DRG.147R1 – Overburden Stormwater Management Plan**.

The design is tiered and constructed from the bottom up to ensure compaction will reduce the potential for geotechnical risks occurring. Once each layer is completed, it will be initially seeded with rye grass (or similar) to achieve soil stabilisation as what is demonstrated to the north within the adjacent Quarry. The progressive development of this land will increase surface stability and reduce the risks associated with geotechnical failures occurring and the potential for offsite discharges of sediment laden surface water.

Naturally, surface water run-off occurs in a westerly direction towards Cactus Canyon. Cactus Canyon is a steep-sided canyon that reaches the coastline approximately 500 metres south of Sellick's Beach. In consistency with the existing WSM to the north of the MPL area, a diversion drain will be constructed parallel to Main South Road that feeds into a Sediment Basin, implemented to collect and treat surface water prior to discharging into the environment.

Consultation

Southern Quarries highly values your input over the many years of quarrying that has been undertaken onsite. It has to date been a lengthy process in acquiring this land parcel and starting to develop the MPLA document. At the stage of writing this letter Southern Quarries are just awaiting the final Certificate of Title to be issued from the Onkaparinga Council then the administrative process is finalised.

A key objective of this project is to consider and deliver on a dual benefit outcome from initial feedback we heard from the local community that started some five (5) years ago. We value your ongoing feedback and would like to provide you this opportunity to provide feedback on the acquisition of the road reserve, preliminary design of the WSM and any potential concerns that you may have with our design.

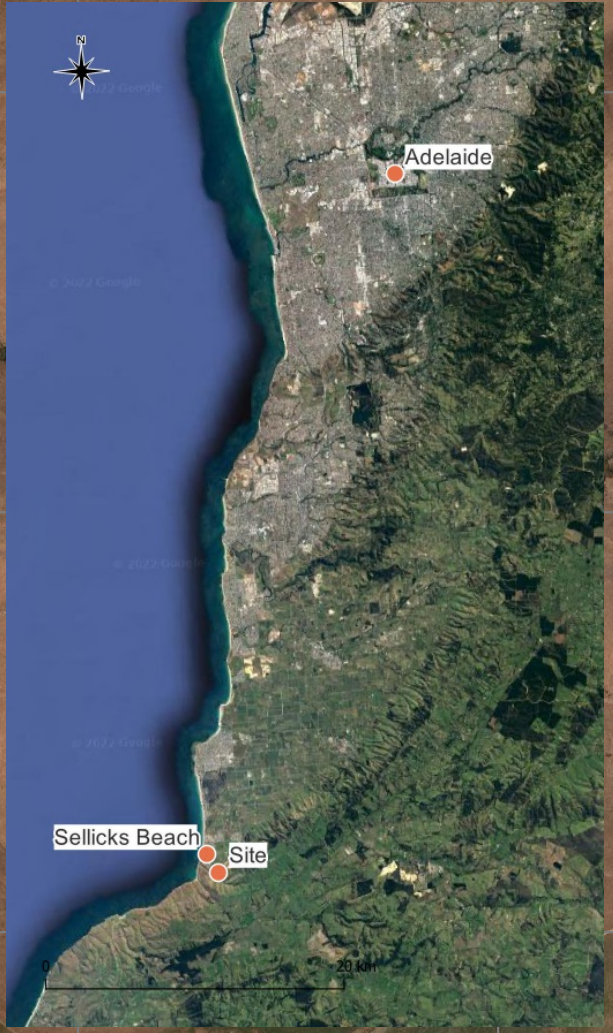
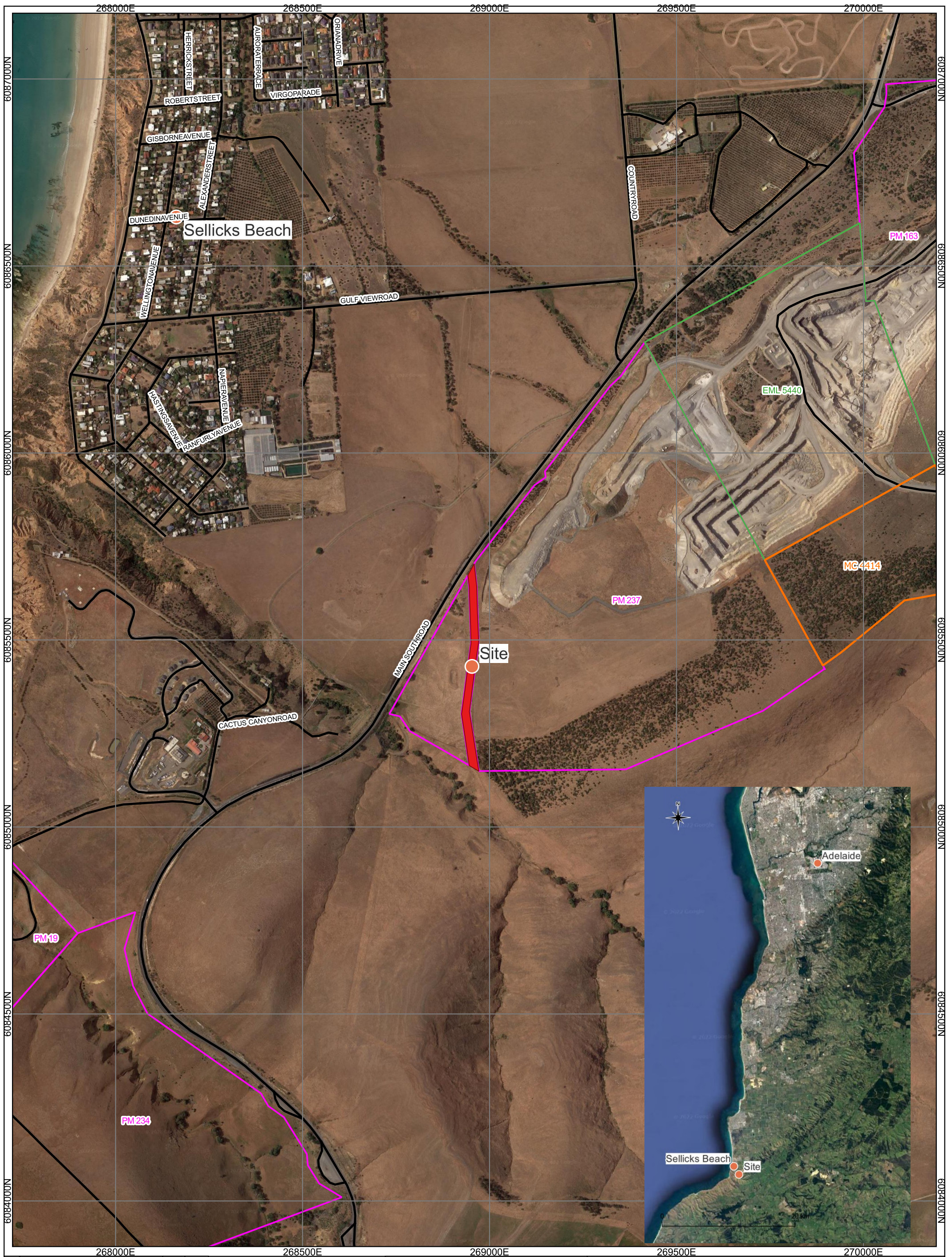
Please provide feedback by 30th May 2023 via the communityfeedback@southernquarries.com.au address for consideration.

Yours faithfully,

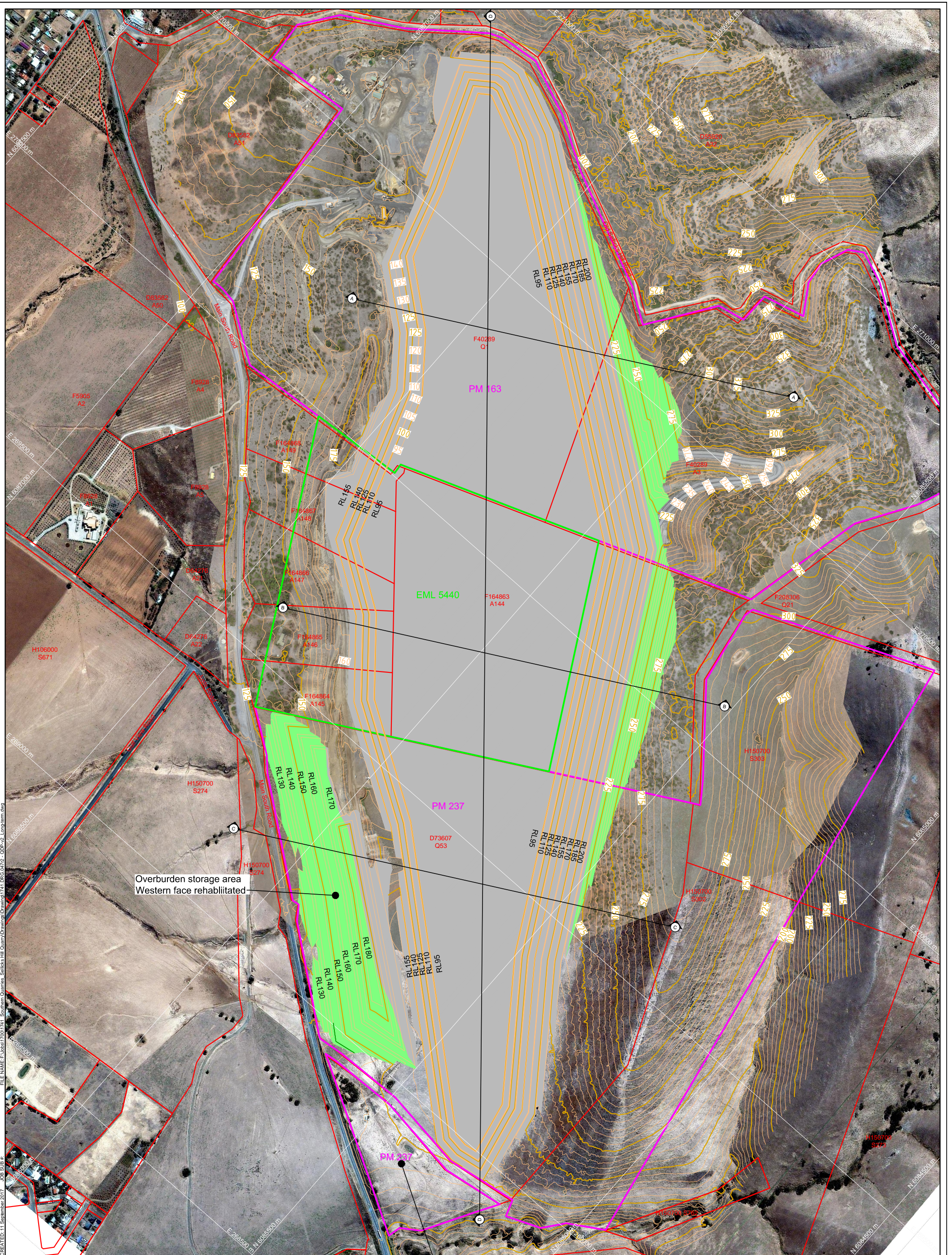


James Rowe
Director
Groundwork Plus (SA) Pty Ltd

drawings



REV	DESCRIPTION	DATE	BY	Legend: Site South Area Mineral Claims Extractive Mineral Leases Private Mines All Road Linework	PROJECT: Sellicks Hill Quarry CLIENT: Southern Quarries Pty Ltd	TITLE: Site Location Plan	SCALE: 1:9,000 When Printed On A3 	DRAWING NUMBER: 1741.DRG.149	REVISION:
Data Sources: Photography: Cadastre: Data.sa.gov.au. Boundaries shown are indicative only. Elevation: Other: SARIG, 2022									
					GROUNDWORK plus PH +61 3871 0411 WWW.GROUNDWORK.COM.AU	DATE: 01 November 2022 PRINTED: 01 November 2022	DRAWN: MS CHECKED:	DATUM: HORIZONTAL / VERTICAL / ZONE MGA / AHD / 54	EPSG:7854



REV	DESCRIPTION	DATE	BY
R1	Removed Mineral Claim Application area	19-06-17	DP
Z	Sections added	12-09-17	GR

Data Sources:
 Photography: Aerial Survey 2016-04-06
 Topography: Aerial Survey 2016-04-06
 Cadastre: 2015-04-06
 Ecosystem: Other

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Legend:

- Cadastral Boundary
- Private Mine Boundary
- Exclusive Mineral Lease
- A B C Cross Section Location

PROJECT: **Sellicks Hill Quarry**

CLIENT: **Southern Quarries Pty Ltd**

TITLE: **Quarry Development Plan - Long Term**

SCALE: 1:7,500

DATE: 12 September 2017

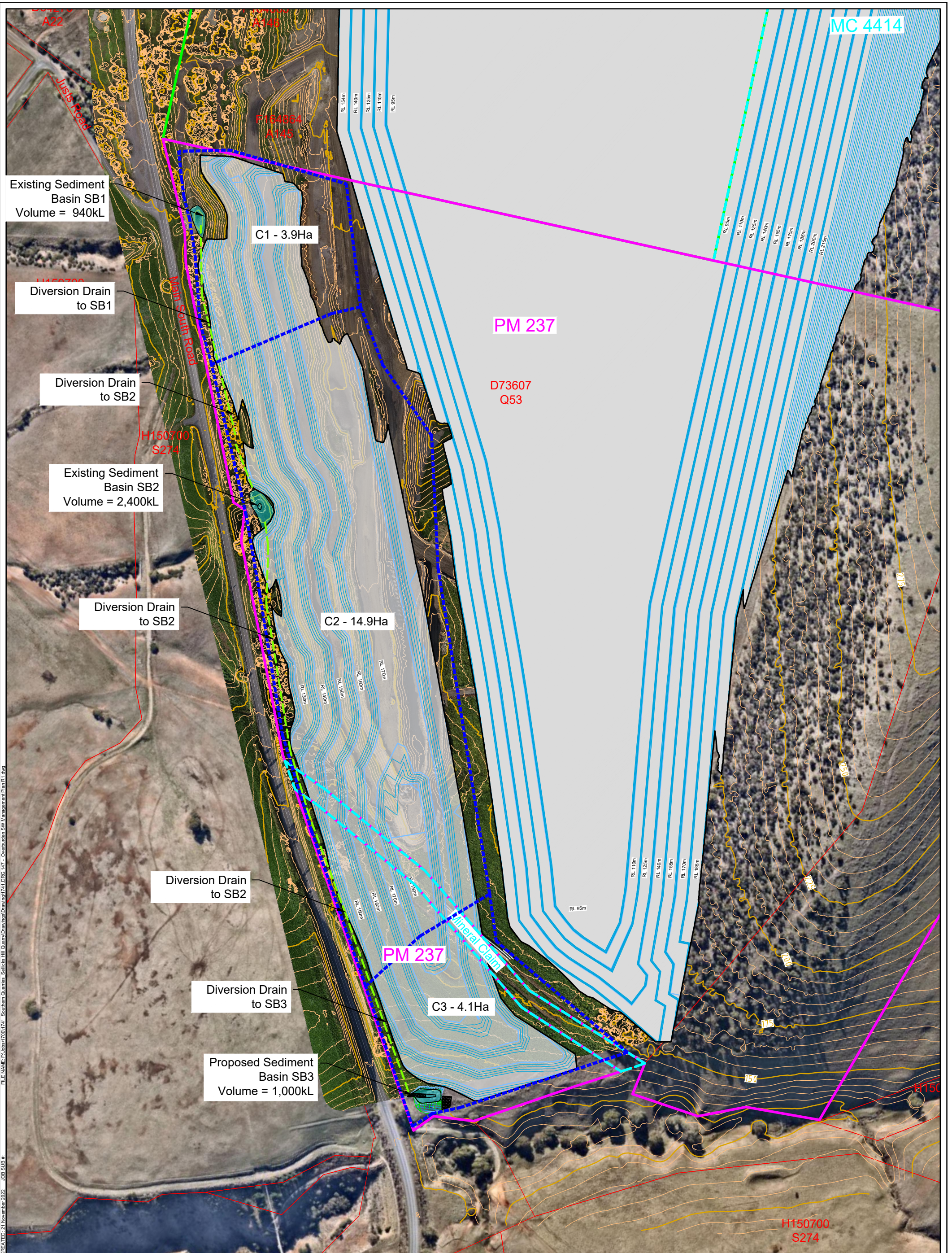
PRINTED: 1 December 2017

DRAWING NUMBER: 1741.DRG.047

REVISION: 2

DATUM: HORIZONTAL / VERTICAL / ZONE

MGA / AHD / 54



REV	DESCRIPTION	DATE	BY

Legend: Cadastral Boundary Private Mine Boundary Extractive Minerals Lease Mineral Claim	PROJECT: Sellicks Hill Quarry CLIENT: Southern Quarries Pty Ltd	TITLE: Overburden Stormwater Management Plan SCALE: 1:7,500 DATE: 21 November 2022 PRINTED: 25 November 2022	DRAWING NUMBER: 1741.DRG.147 REVISION: 1 DATUM: HORIZONTAL / VERTICAL / ZONE GDA94 / MGA / AHD / 54
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FILE NAME: F:\Jobs\1741\1741_Southern Quarries_Sellicks Hill Quarry\Drawings\Drawings\1741.DRG.147 - Overburden SW Management Plan R1.dwg
 CREATED: 21 November 2022
 JOB SUB #

Data Sources:
 Photography: © Groundwork Plus Pty Ltd RPA Survey, Captured 2022-04-21
 Topography: © Groundwork Plus Pty Ltd RPA Survey, Captured 2022-04-21, DSM 1m
 Cadastre: © The Government of South Australia (DIT) 2021
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Attachment 8

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