



## **Program for Environment Protection and Rehabilitation**

Date:	19.10.2020
Name of Tenement Holder(s):	Southern Contracting Group PTY LTD
Name of Operation:	Sherlock Pit
Tenement No:	EML6516
Size (Ha):	24.64
Contact Details	<p>Name: Matthew Ramke</p> <p>Phone: 0437 597 365</p> <p>Email: matt@scg.net.au</p>

## Section 1: Mining Operations

This section specifies proposed mining operations as per Section 70B(2)(a) of the *Mining Act 1971*.

1. Mining Operations	
1.1 Resource description, production and mine life.	<p>Following is a geological description of the resource:</p> <p>This site consists of Limestone surface outcropping to a depth of approx. 2 meters. Currently the land is vacant with scattered trees and will be fenced for from property.</p>
	<p>The resource/commodity being mined is:</p> <p>Limestone &amp; Calcrete</p>
	<p>The estimated quantity of resource is: <u>363,880</u> tonnes, based on the following calculation:</p> <p>Stage 1- 8.39 HA - 70% usage 5.87 HA ;            Stage 2 2.46 HA, 50% usage, 1.23 HA;            Stage 3, 2.94 HA, 40% usage 1.17 HA            Total HA= 8.27 HA            8.27 HA x 10,000 tonne p/HA = 82,700 x 2 meters deep= 165,400 x 2.2 compacted institute= 363,880 tonne            363,880 tonne Estimated Quantity</p>
	<p>The mined resource will be used for the following products/end use:</p> <p>Limestone will be crushed and made into Road base.            Crushing Campaigns will consist of 100m x 50m x 2m deep= 10,000 compacted institute            10,000 x 2.2= 22,000 tonne</p>
<p>The estimated annual production is <u>22,000</u> tonnes per annum.</p>	

	The mine is estimated to have a life of __17__ years.
1.2 Mine equipment	<p>The following equipment will be used to mine the site:</p> <p>2014 Finlay I-130RS Impact Crusher, track mounted with magnet band, vibrating feeder and interchangeable screen with return oversize conveyor.  Anaconda TR7542 Tracked conveyor to stock pile material from crusher  Cat 345D (45 tonne Machine) with ripper tyne &amp; 1.2 m3 bucket to raise material  Loader with load rite scales and 4.5 m3 bucket to feed material into crusher  Utes</p>
1.3 Supporting Infrastructure	<p>The estimated size of haulage trucks are:</p> <p>40 tonne pay load-B Double side tippers  29 tonne pay load Truck and Dogs  Haulage trucks will travel in both directions of the Mallee Highway depending on demand</p> <hr/> <p>The estimated truck movements per operational day.....5 per week.....</p> <p>Mine trucks will access the site via the following route:</p> <p>All light and heavy vehicles will enter off the Mallee Highway B12 onto a private track that leads into the quarry site.</p> <hr/>
1.4 Water Use	<p>The amount of water required for mine operations (including water use in dust suppression) is estimated at:</p> <p>__5,000__ Litres per day.</p> <p>Water will be sourced from:</p> <p>Water will be sourced from off site and carted to location with Southern Contracting Group's water truck. Water will be used for dust control on haul roads only if required</p> <hr/>

1.5 Use of explosives	<p>If explosives are used, a description of the following items must be included:</p> <p>Type of explosives used on the site_____N/A_____</p>
	<p>Proposed frequency of blasting_____</p>

## 1.6 Mining and Rehabilitation Description

A Mining Plan showing how mining and progressive rehabilitation will occur over the life of the mine has been included as **Attachments Appendix 1,2,3,4,7,8,9 &10** \_\_\_\_.

Following is a description of this plan:

The proposed final depth of mining below the surrounding ground level is \_\_\_\_2\_\_ metres;  
or

Height of sand dune or surface outcrop above surrounding land: \_\_\_\_0\_\_ Metres.

Mining will commence in a \_Northerly\_\_\_\_ direction consisting of \_3\_\_ stages.

Rehabilitation will occur progressively to ensure that less than \_3\_\_ hectares of land is uncovered at any one time.

Further detail on each **mining** stage is provided below:

Southern Contracting Group limestone pit will be constructed in 3 stages. Stage 1 will commence on the eastern side of the mineral claim working in a northerly direction opening up 50m x 100m sections at one time. Stage 2 and 3 will be in a westerly direction.

Before machinery is moved it will be cleaned down thoroughly before mobilising machinery to site. Upon arrival, the dozer will strip the topsoil to a depth of approx. 200mm storing in piles for rehabilitation to an area of 50m x 100m to extract the required limestone. The dozer/excavator will rip the product to a maximum depth of 2m, then begin pushing product up to a stockpile ready for crushing. The impact crusher will then be put into place to crush & screen materials to desired size. Once product is crushed and screened in will be placed into stockpiles ready for sale.

A buffer zone of a minimum of 5 from the canopy drip line of trees will be maintained during all campaigns.

After the product has been removed, the dozer will return the topsoil and overburn to the open site, and level out with 5 in 1 batter to rejuvenate previous natural grasses before beginning next area.

Mining will be conducted chasing rubble seams, accessing as much rubble as possible through out each stage. Indicating that each stage will not be even.

Further detail on the process of progressive **rehabilitation** is provided below:

Stage one will commence on the eastern side of the mineral claim on the southern end working in a northerly direction.

Once each campaign has been completed the site will be rehabilitated before the next cut is opened. These cuts will consist of 100m x 50m x 2m deep. Rehabilitation will consist of the top soil and overburden being placed over quarry area for rejuvenation

---

---

---

---

Further detail on the **proposed final landform** is provided below:

Mining is proposed to a final batter of 1 vertical in \_\_3\_\_ horizontal.

Final landform will be rehabilitated with previous top soil to let previous grasses regenerate. Site will remain vacant and fenced off from other part of property.

---

---

---

---

---

---

### 1.7 Hours of operation

☐ Periodical

Mining will occur regularly with the following operating hours:

Monday – Friday: .....

Saturday:.....

Sunday:.....

Public Holidays:.....

☒ Campaign

Mining will occur on a campaign basis with the following operating hours during campaigns:

Monday – Friday: .....7am till 6pm.....

Saturday:.....None.....

Sunday:.....None.....

Public Holidays:.....None.....

## Section 2: Consultation

The following additional consultation occurred post lease grant:

**Landowner:**...John & Rosemary Peter

**Date of consultation:**.....11.5.2020.....

*Issue(s) raised:*

Discussing held on proposed location, exempt land, method of mining, duration of mining operations, Operating hours, staging of mining, communications, rehabilitation including final landform and land use, Access to tenement, timing and nature of significant agricultural programs in relation to mining, infrastructure construction and maintenance during and post mining, Weeds & Pest, protection of infrastructure and sensitive areas within the tenement, use of landowner services & impact on visual amenity. No issues raised

---

---

---

*Resolution(s) proposed:*

---

---

---

**Adjacent landowner:**.....Mark Batten.....

**Date of consultation:**.....11.5.2020.....

*Issue(s) raised:*

Discussion held with adjacent landowners regarding proposed location, method of mining, exempt land and waivers, duration of mining operations, operating hours, staging and rehabilitation of mining, Communication plan, rehabilitation outcomes including conceptual final landform and land use, access to tenement, timing and nature of signification agricultural program in relation to mining plan, infrastructure construction or maintenance, Weeds and pest management, protection of infrastructure of sensitive areas within tenement, use of landowner services, impact on visual amenity, No issues raised

---

---

---



*Resolution(s) proposed:*

---

---

---

**Local Council:**.....N/A.....

**Date of consultation:**.....

*Issue(s) raised:*

---

---

---

*Resolution(s) proposed:*

---

---

---

**Stakeholder Name:**.....NRM Board- Steve Baltussen.....

**Date of consultation:**.....9<sup>th</sup> December  
2019.....

*Issue(s) raised:*

Steve has been out to site and assessed, please find attached letter with recommendations

---

---

---

*Resolution(s) proposed:*

---

## Section 3: Management of Environmental Impacts

This section sets out the environmental outcomes, measurement criteria and strategies as per Section 65(2) of the *Mining regulations 2011*.

3.1 Heritage	
<b>Outcome</b> No damage, disturbance or interference to Aboriginal or Non-Aboriginal heritage sites, objects or remains as a result of mining operations unless it is authorised under the relevant legislation.	<b>Measurement Criteria</b> Production records and Mine Logbook will demonstrate that upon discovery within the tenement of any possible Aboriginal or Non-Aboriginal: <ul style="list-style-type: none"><li>- sites of significance;</li><li>- objects;</li><li>- remains;</li></ul> that work ceased until the relevant authorities were notified and work recommenced only once authorisation was received.
<b>Control and Management Strategies</b> <ol style="list-style-type: none"><li>1. All contractors and employees operating within the tenement will understand their obligations in regard to the <i>Aboriginal Heritage Act 1988</i> with regards to the discovery of Aboriginal sites, objects or remains and the <i>Heritage Places Act 1993</i> with regards to the discovery of places or objects of significance.</li><li>2. Southern Contracting Group is accredited by the Civil Contractor Federation Scheme, Client ID102601. This accreditation is audited annually by Global Mark and covers Australian Standards AS4801, AS 9001 &amp; AS14001.</li><li>3. Southern Contracting Group will follow its Policies and Procedures as per accreditation.</li></ol>	

## 3.2 Traffic

### Outcome

No traffic accidents involving members of the public and mine related traffic that could have been reasonably prevented by the Tenement Holder.

### Measurement Criteria

All traffic accidents involving the public at mine access points are recorded in Mine Logbook. All accidents will be investigated by a suitably qualified independent third party within one calendar month (or other time as agreed with Mining Regulator) and the results of the investigation show that the accident could not have been reasonably prevented by the Tenement Holder.

### Control and Management Strategies

1. **All operators will be made aware of the dangers of mine machinery and mine vehicles entering public roads during the site induction.**
2. **Road signs will be displayed at mine entry and exit points, warning the public of the dangers of large trucks entering and exiting the tenement.**
3. **Vehicles and machinery will be parked inside the tenement, not along road verges.**
4. **Signage will be displayed at the entry of the mine site to warn the public of dangers of the site.**
5. **Nobody is to enter this site until contact has been made with operator, this will be displayed on front entrance gate.**
6. **Trucks entering and exiting signs to be placed on Mallee Highway to warn public.**
7. **All operators will be in contact with UHF**

### 3.3 Public Safety (Construction and Operation of the Mine)

**Outcome**

No public injuries and/or deaths resulting from unauthorised entry to the Land that could have been reasonably prevented.

**Measurement Criteria**

All public injuries and/or deaths resulting from unauthorised access to the mine site are recorded in Mine Logbook and investigated by a suitably qualified independent third party within one calendar month (or other time as agreed with Mining Regulator) and the results of the investigation show that the incident could not have been reasonably prevented by the Tenement Holder.

**Control and Management Strategies (Construction and Operation Phase)**

1. **Access to the Tenement will be controlled through fencing and gates will be locked when not operational.**
2. **All fences and gates will be inspected regularly.**
3. **Site is sign posted making the public aware of hazards associated with the mine.**
4. **Signage to be displayed on site warning of the hazards**

### 3.3a Public Safety (Post Mine Completion)

**Outcome**

The risks to the health and safety of the public so far as it may be affected by mining operations are as low as reasonably practicable.

**Measurement Criteria**

Following final rehabilitation work an appropriate person will inspect the site and verify in a report (to be stored in the Mining Logbook) that final rehabilitation has been undertaken in accordance with the Mining Plan.

**Control and Management Strategies (Post Mine Completion)**

1. Mining operations will be progressively rehabilitated as per Mining Plan
2. All slopes will be battered to a slope ratio of at least 1:3 (18.4 Degrees).
3. Mining area will be returned to vacant land and fenced off from the rest of the property.

### 3.4 Weeds and Pests

**Outcome**

No introduction of new species of weeds, or pests (including feral animals), nor increase in abundance of existing weed or pest species in the Land.

**Measurement Criteria**

Mine Logbook records of annual inspections (in Spring) by the Tenement Holder will demonstrate no introduction of new weeds or pests and no increased abundance of existing weeds and/or pests.

**Control and Management Strategies**

1. All machinery is to be cleaned and wash down before entering the EML, as per Southern Contracting Group's Policy.
2. Annual weed spraying will be conducted by an experienced person.
3. All overburden from site is moved away from the area and kept on site to minimise the change of weed seeds blowing and contaminating limestone, as recommended by NRM
4. All top soil in the area to be scraped off and stockpiled to minimise the spread of weed seeds, this includes loading zones and machinery parking, as recommended by NRM
5. Carry out regular visual inspections of the mining/crushing/stockpiling as well as machinery to make sure that weeds seeds have not been blown or been brought into area, as per recommended by NRM

### 3.5 Soil

**Outcome**

The existing (pre-mining) soil quality and quantity is maintained.

**Measurement Criteria**

Annual inspection records in the Mine Logbook of all soil stockpiles will demonstrate that all stockpiles are less than 2 metres high and are maintained at the height when established.

**Control and Management Strategies**

1. Soil stockpiled to a maximum of 2m in height to preserve seed stock and micro-organism function.
2. Soil stockpiles vegetated to prevent erosion and retain soil quality.
3. Prior to mining the amount of soil required for successful rehabilitation will be calculated.
4. Machinery will only be refuelled in a bunded area in accordance with EPA requirements
5. Stock piled over burden will be put aside and used for rehabilitation post quarrying.

### 3.6 Waste

**Outcome**

All commercial, industrial and domestic waste is disposed of in accordance with relevant legislation.

**Measurement Criteria**

Waste disposal receipts demonstrate that all commercial, industrial (including contaminated soil) and domestic waste within the tenement was disposed of offsite in accordance with *Environment Protection Act 1993* requirements.

**Control and Management Strategies**

1. Any general rubbish brought onto the tenement by workers or contractors will be removed on a daily basis or will be stored in rubbish bins and disposed of offsite at an EPA licensed waste facility.
2. Southern Contracting Group to remove all waste from site daily and recycled where possible
3. NO waste materials to be bought onto site



### 3.7 Noise

**Outcome**

No public nuisance impacts from noise as a result of mining operations.

**Measurement Criteria**

Records from Mine Logbook will demonstrate that any noise complaints received were resolved with the complainant within 48 hours (or other time as agreed with Mining Regulator).

If complaints are not resolved the Tenement Holder will conduct noise monitoring at the sensitive receptor to demonstrate noise emissions comply with the *Environment Protection (Noise) Policy 2007*.

**Control and Management Strategies**

1. Mine operation will only be in campaign crushes and completed from Monday to Friday 7am till 6pm
2. Trucks will be advised to avoid using air brakes in built up areas
3. Any complaints will be logged at Southern Contracting Group office & attended to by management as per Southern Contracting Group Procedures.

### 3.8 Air Quality

#### Outcome

No public health and/or nuisance impacts from dust generated by mining operations.

#### Measurement Criteria

Records from Mine Logbook will demonstrate that any dust complaints received were acknowledged within 48 hours and resolved with the complainant within 7 days (or other time as agreed with Mining Regulator).

If complaints are not resolved to the satisfaction of the Mining Regulation, air quality monitoring is to occur at locations, and using methods, as agreed with the Mining Regulator, to demonstrate:

- PM10\* concentrations leaving the tenement are less than 50 µg/m<sup>3</sup>, when measured over a 24-hour period (midnight to midnight) as specified in the *Environment Protection (Air Quality) Policy 2016*, **and/or**
- dust deposition leaving the tenement does not exceed 4g/m<sup>2</sup>/month, when monitored in accordance with Australian Standard AS 3580.10.1 Methods for sampling and analysis of ambient air – Determination of particulates – Deposited matter – Gravimetric method

\*Particulate matter with an aerodynamic diameter of ten micrometres or less

#### Control and Management Strategies

1. Rehabilitation will occur progressively in accordance with the Mining Plan
2. All trucks leaving the tenement will be covered
3. Haul roads will be watered when required to control dust
4. Mining will not occur during extreme wind days (i.e. dry conditions and wind speeds over 50km/hr)
5. Dust will be controlled by spray bars on crushing machinery as required.
6. Mining will not occur on extreme day as per the harvest codes of practice.
7. Stock piles will be watered to control dust if required.

### 3.9 Groundwater

**Outcome**

No adverse impact to groundwater caused by mining operations.

**Measurement Criteria**

Annual inspection or survey (as agreed with Mining Regulator) of the pit floor recorded in the Mine Logbook will demonstrate that mining operations do not exceed the mine depth levels stated in the Mining Plan.

**Control and Management Strategies**

1. No mining is undertaken within 2 metres of the estimated highest seasonal groundwater level
2. Refuelling from portable tanks only
3. Water to be transported to the site for dust suppression

### 3.10 Surface Water

**Outcome**

No adverse impact to surface water quality and water dependent ecosystems on or off the Land as a result of contamination and sedimentation caused by mining operations.

**Measurement Criteria**

Photographic records in the Mine Logbook, following rainfall events resulting in run-off will demonstrate that surface water coming into contact with mining operations is retained within the tenement.

**Control and Management Strategies**

1. All water impacted by mining operations is retained within the Tenement and does not leave the Land.
2. Mining operations will be progressively rehabilitated as per the Mining Plan.
3. A sump will be created to capture and hold storm water within the working pit. Bund wall/s will be constructed and maintained to divert stormwater runoff into the working pit.
4. Mine site will be constructed to allow water runoff from area in proposed site

### 3.11 Visual Amenity

**Outcome**

The form, contrasting aspects and reflective aspects of mining operations are visually softened to blend in with the surrounding landscape.

**Measurement Criteria**

Annual site inspection records in the Mine Logbook demonstrate that:

- the area of land disturbed by mining operations does not exceed \_\_3\_ hectares; and
- Progressive and final rehabilitation has been completed in accordance with the approved Mining Plan.

**Control and Management Strategies**

1. Mining operations will be progressively rehabilitated as per Mining Plan
2. The maximum land disturbed by mining operations is 3 hectares.

### 3.12 Post Mining Land Use

**Outcome**

All land disturbed by mining operations is rehabilitated to achieve the post mining land use.

**Measurement Criteria**

Following final rehabilitation work an appropriate person will inspect the site and verify in a report (to be stored in the Mine Logbook) that final rehabilitation has been undertaken in accordance with the Mining Plan to achieve the approved post mining land use.

**Control and Management Strategies**

1. Mining operations will be progressively rehabilitated as per Mining Plan.
2. The land will be revegetated with topsoil and overburn, levelled out with 5 in 1 batter to rejuvenate previous natural grasses.
3. As agreed with the landowner, land will be fenced off and will be left as rehabilitated vacant land

### 3.13 Native Vegetation

Native vegetation is located within the Tenement

#### Outcome

No loss of abundance or diversity of native vegetation on or off the land through;

- clearance,
- dust/contaminant deposition,
- fire,
- other damage,

unless a significant environmental benefit (SEB) has been approved in accordance with the relevant legislation.

#### Measurement Criteria

Native vegetation is retained:

Annual site survey/photographic evidence (stored in the Mine Logbook) will show no clearance of native vegetation identified and shown in the Mining Plan.

AND

Native vegetation to be cleared:

Clearance will be undertaken in accordance with the attached Native Vegetation Management Plan.

#### Control and Management Strategies

1. Native vegetation is retained:

A buffer zone of a minimum 5m from the canopy drip line of native vegetation will be maintained and flagged during operations, where no excavation, stockpiling or other earthworks will be undertaken within this buffer zone.

AND

Native vegetation to be cleared:

Native vegetation areas of clearance will be identified and flagged as per the Native Vegetation Management Plan (NVMP) and all operators will be made aware of areas for clearance based on the NVMP prior to commencement of mining.

### 3.14 Protection of Third party Property, Infrastructure and Adjacent Land Use

Mining operations will be undertaken on exempt land.

AND/OR

Potential impacts from mining on third party property and Infrastructure, including adjacent land use, were identified as a concern during stakeholder consultation.

#### Outcome

No unauthorised damage (including that caused by fire) to adjacent public or private property, infrastructure and adjacent land use.

#### Measurement Criteria

Any complaints of unauthorised damage to adjacent public or private property, infrastructure or impact to adjacent land use from mining operations will be recorded in the Mine Logbook at time of complaint and investigated within 7 days (or other time as agreed with Mining Regulator) to show that the mine operator did not cause the damage or impact through mining operations.

#### Control and Management Strategies

- Machinery will not be operated on the tenement during total fire ban days
- A buffer of 5 metres will be observed around any third party infrastructure within the Mineral Tenement
- SA Power networks to have unrestricted access to the site 24/7
- SA Power Networks NICC404 must be adhered to and the Connection Central team must be contacted prior to any destructive digging or work being conducted in close proximity to SA Power Networks assets
- All operations will follow the Electricity (General) Regulations 2012 when working near powerlines and power poles.



--

## Section 4: Records

Records related to measurement criteria will be kept in a Mine Logbook. All records will be kept for the duration of the lease.

## Section 5: Lease Conditions

The following outlines how specific lease conditions, which are not outcomes, will be addressed

Lease Condition	How will the lease condition be addressed:
N/A	

## Section 6 Operator Capability

I, the Tenement Holder, have the following appropriate experience, processes and procedures in place to be able to operate the tenement to meet the environmental outcomes:

Southern Contracting Group has had 15 years experience and is accredited through the Civil Contractors Federation, we operate in accordance with our Integrated Management System. This is a comprehensive set of documents describing how we perform all our activities.

It is based on:

- AS/NZS ISO 9001:2016 Quality Management
- AS/NZS 4801:2001 OH&S Management System
- AS/NZS ISO 14001:2016 Environmental Management System
- ISO 45001:2018 OH&S Management System
- Civil Construction Management Code 2018 Version 10

---

---

---

---

---

---

---

---

---

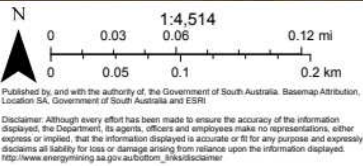
---

Section 7: Maps and Plans

EML 6516- Appendix 1 Stage 1



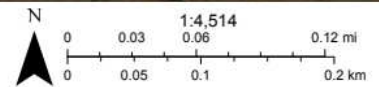
October 20, 2020



## EML 6516- Appendix 2 Stage 2



October 20, 2020



Published by and with the authority of, the Government of South Australia. Basemap Attribution: Location SA, Government of South Australia and ESRI

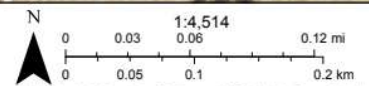
Disclaimer: Although every effort has been made to ensure the accuracy of the information displayed, the Department, its agents, officers and employees make no representations, either express or implied, that the information displayed is accurate or fit for any purpose and expressly disclaims all liability for loss or damage arising from reliance upon the information displayed. [http://www.energymining.sa.gov.au/bottom\\_line/disclaimer](http://www.energymining.sa.gov.au/bottom_line/disclaimer)



# EML 6516- Appendix 3 Stage 3



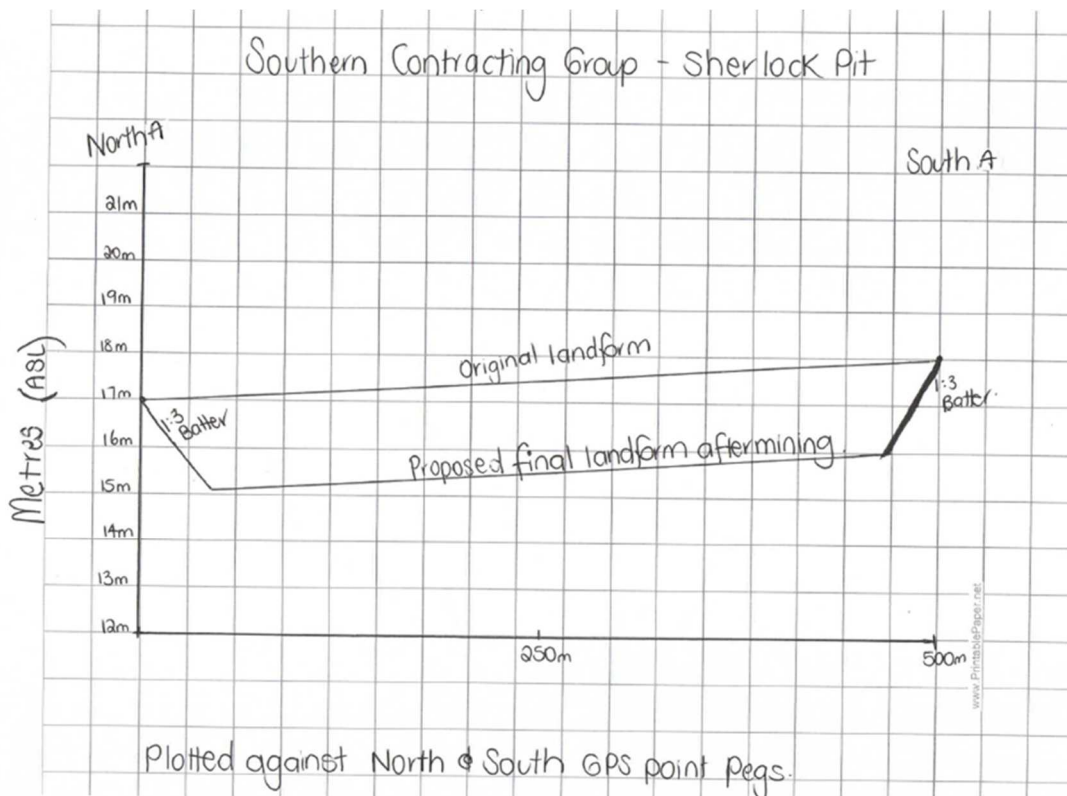
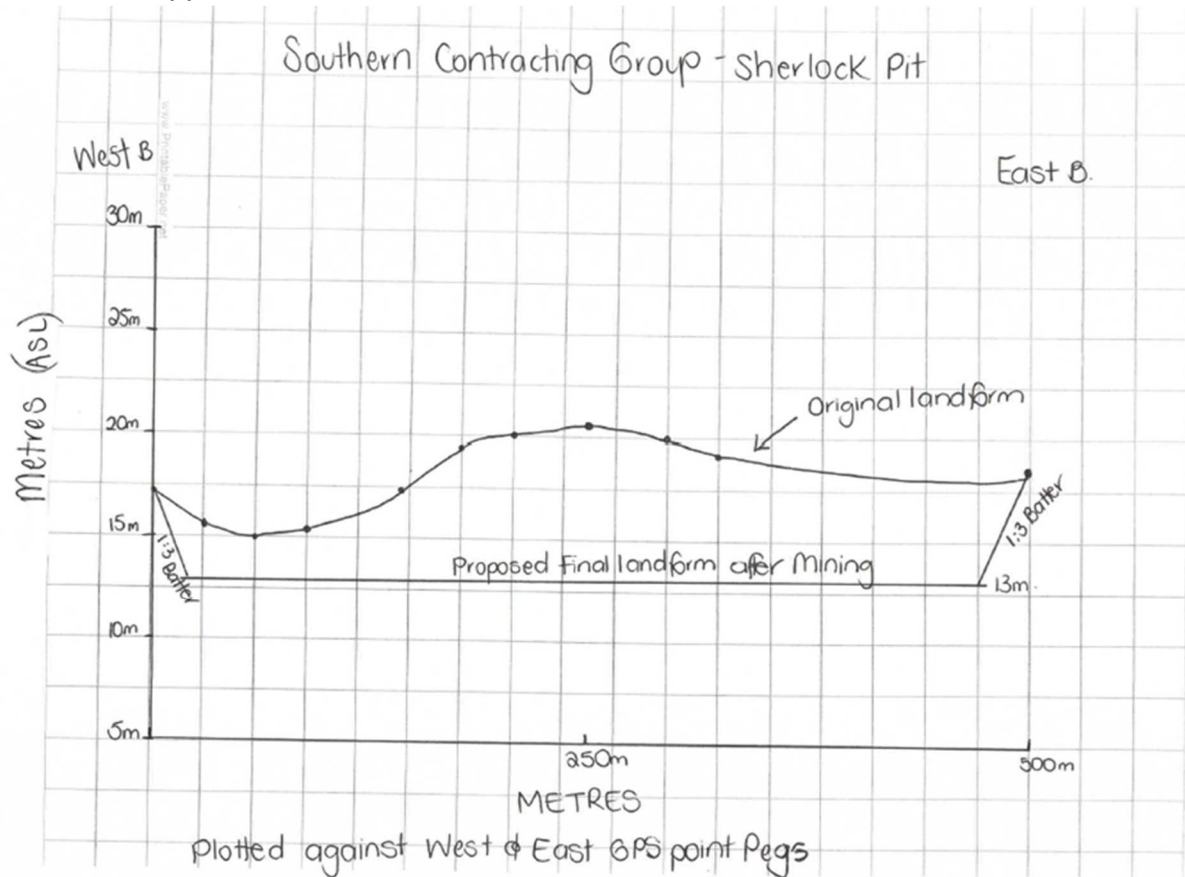
October 20, 2020



Published by, and with the authority of, the Government of South Australia. Basemap Attribution, Location SA, Government of South Australia and ESRI.  
 Disclaimer: Although every effort has been made to ensure the accuracy of the information displayed, the Department, its agents, officers and employees make no representations, either express or implied, that the information displayed is accurate or fit for any purpose and expressly disclaims all liability for loss or damage arising from reliance upon the information displayed.  
[http://www.energythinging.sa.gov.au/footer\\_links/disclaimer](http://www.energythinging.sa.gov.au/footer_links/disclaimer)



# EML6516- Appendix 5





EML6516- Appendix 6







EML6516- Appendix 8

Stage 2 Area's



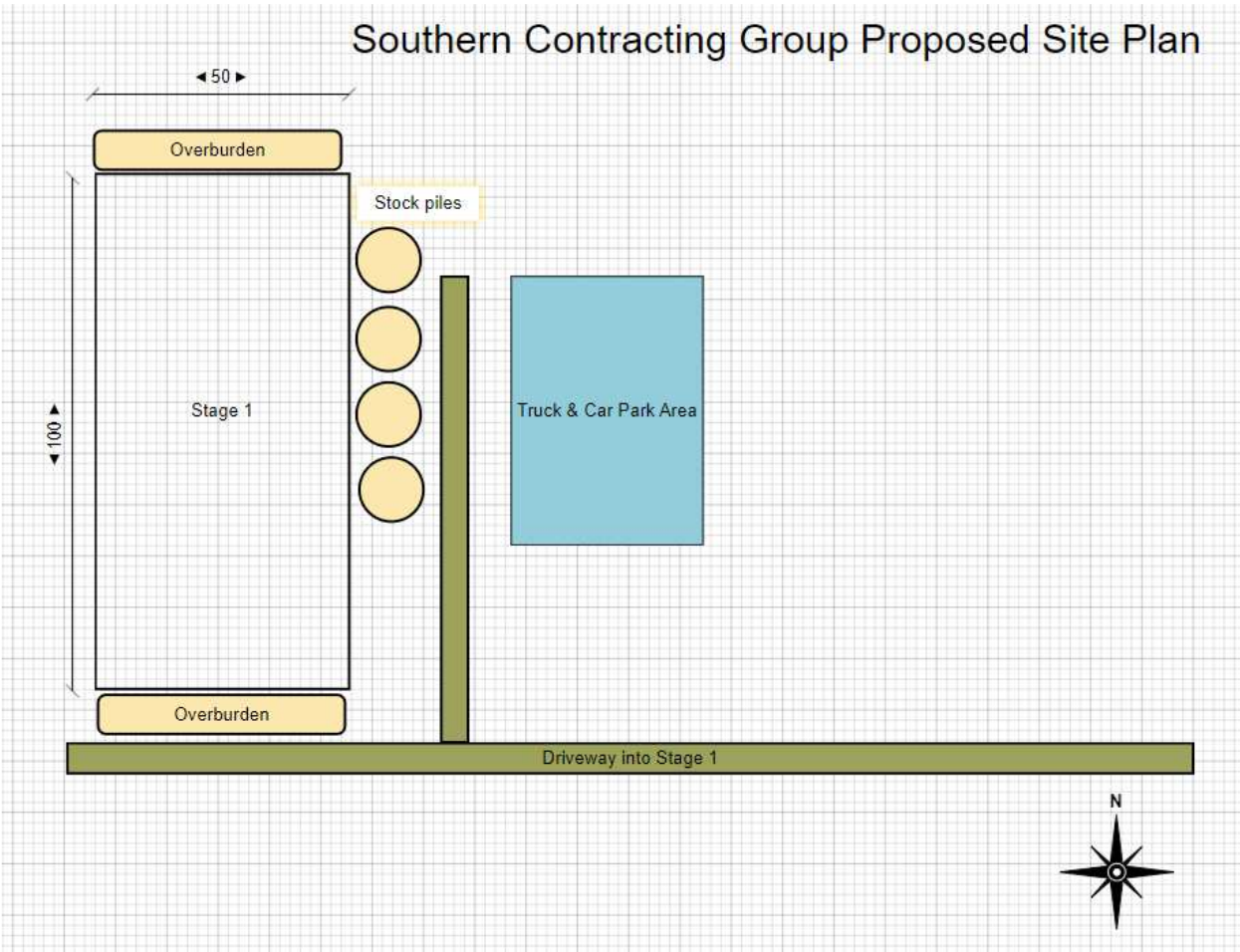
DATE:	20/08/2016	PROJECT:	20/08/2016	CLIENT:	20/08/2016	PROJECT:	20/08/2016
TIME:	10:00	DATE:	20/08/2016	CLIENT:	20/08/2016	PROJECT:	20/08/2016

EML 6516- Appendix 9

Stage 3 Area









**Natural Resources Centre  
Murray Bridge**

110A Mannum Road

Murray Bridge SA 5253

Tel 08 8532 9100

Fax 08 8531 1843

[samdbenquiries@sa.gov.au](mailto:samdbenquiries@sa.gov.au)

[www.naturalresources.sa.gov.au/samurraydarlingbasin](http://www.naturalresources.sa.gov.au/samurraydarlingbasin)

|

Dear Emma,

As per our phone conversation on 9<sup>th</sup> December 2019 regarding the proposed Mineral Claim 4477 located at F215747 Lot 96 Hundred of Sherlock, please find our recommendations below to minimise Horehound (*Marrubium vulgare*) weed seed contamination.

- Remove top soil (overburden) from the area which is to be mined and move away (but kept on-site) from the area so as to minimise the chance of weed seeds (Horehound) blowing in and contaminating the limestone prior to crushing.
- Scrape off the top soil (but store on-site) of all areas where crushed rubble is to be stockpiled as well as any loading areas/machinery parking areas and vehicle access tracks, so as to minimise the chance of seeds blowing in or being brought in to the area by vehicles.
- Carry out regular visual inspections of the mining / crushing / stockpiling areas as well as the machinery to make sure that Horehound plants or seed have not been blown or been brought into the area.
- Carry out machinery Hygiene (wash down with high pressure) before moving any machinery involved with the extraction or crushing of the limestone from the site.

With the removal of the top soil in combination with regular inspections of the area and machinery. This should minimise the risk of weeds (Horehound) contaminating any crushed rubble taken from the site.

Kind Regards

Steve Baltussen

Senior District Officer – Mallee & Coorong Region

Natural Resources SA Murray-Darling Basin

Department for Environment and Water

P (08) 8532 9100 – M 0427 808 205

110A Mannum Road, Murray Bridge, 5253

PO Box 2343, Murray Bridge, 5253

**[Steve.baltussen@sa.gov.au](mailto:Steve.baltussen@sa.gov.au)**

## Section 8: Tenement Holder Declaration

This declaration must be signed by all tenement holders.



We/ I have taken reasonable steps to review the information to ensure its accuracy and all statements made and information given in this application is true and correct.

Signature:



Print name:

Matthew Ramke

Date:

19.10.2020

Position:

Director

Signature:

Print name:

Date:

Position:

Signature:

Print name:

Date:

Position:

## **Appendix 1 – Native Vegetation Assessment and Native Vegetation Management Plan**

If native vegetation will be cleared, please provide the native vegetation assessment undertaken by a Native Vegetation Council Accredited Consultant.

If the Significant Environmental Benefit (SEB) will be met via provided an on ground off-set, please provide a Native Vegetation Management Plan

**Please find attached native vegetation documentation.**

MINERAL CLAIM 4477

Native Vegetation Clearance Proposal  
Clearance under Regulation 12 (28)  
of the *Native Vegetation Regulations 2017*

Prepared for:  
Southern Contracting Group Pty Ltd

Date:  
March 2020

File Ref:  
2463.620.001



## Document Control

### Project / Report Details

<b>Document Title:</b>	Mineral Claim 4477 - Native Vegetation Clearance Proposal
<b>Principal Author:</b>	Jackie Ayre
<b>Client:</b>	Southern Contracting Group Pty Ltd
<b>Ref. No.</b>	2463.610.001

### Document Status

<b>Issue</b>	<b>Description</b>	<b>Date</b>	<b>Author</b>	<b>Reviewer</b>
VO	Mineral Claim 4477	February 2020	Jackie Ayre	Matthew Jones

### Distribution Record

<b>Recipient</b>	
Southern Contracting Group Pty Ltd	Electronic Copy

#### Groundwork Plus ABN: 13 609 422 791

Queensland  
6 Maymeview Street, Milton Qld 4064  
PO Box 1779, Milton BC, Qld 4064  
P: +61 7 3871 0411  
F: +61 7 3367 3317

E: [info@groundwork.com.au](mailto:info@groundwork.com.au)

South Australia  
Shops 2 & 3, 16 Second Street,  
Nuriootpa SA 5355  
PO Box 854, Nuriootpa SA 5355  
P: +61 8 8562 4158

#### Copyright ©

These materials or parts of them may not be reproduced in any form, by any method, for any purpose except with written permission from Groundwork Plus.

## Table of Contents

<b>1. Applicant Information .....</b>	<b>1</b>
<b>2. Background .....</b>	<b>2</b>
2.1. Purpose of the proposal .....	2
2.2. Background .....	2
2.3. Approvals Required or Obtained Under Other Legislation (including past clearance approvals) .....	2
<b>3. Method .....</b>	<b>3</b>
3.1. Flora assessment .....	3
3.2. Fauna Assessment .....	3
<b>4. Assessment Outcomes .....</b>	<b>4</b>
4.1. Vegetation Assessment .....	4
4.2. Requirements of the Regulation .....	7
4.3. Mitigation Hierarchy .....	9
<b>5. Significant Environmental Benefit .....</b>	<b>10</b>
 <b>TABLES</b>	
Table 1 – Staged Vegetation Clearance .....	4
 <b>FIGURES</b>	
Figure 1. Original Stage 1 intended area of clearance in yellow .....	9
 <b>DRAWINGS</b>	
Site Location Plan .....	(Drawing No. 2463.DRG.001)
Staged Vegetation Clearance .....	(Drawing No. 2463.DRG.002)
 <b>ATTACHMENTS</b>	
Attachment 1 .....	Plant Species Recorded (Native and Introduced)
Attachment 2 .....	Threatened or Introduced Animal Species Recorded or Observed (Native and Introduced)
Attachment 3 .....	Bushland Assessment Scoresheets

## 1. Applicant Information

Applicant:	Southern Contracting Group Pty Ltd		
Key contact:	Ron Valentine, General Manager, Southern Contracting Group Pty Ltd		
Landowner: <i>(if the applicant is not the landowner, you must attach written permission)</i>	TBC		
Site Address:	Mallee Highway, Sherlock, SA		
Local Government Area:	Coorong District Council	Hundred:	Sherlock
Certificate of Title:	CT/5815/4	Section/Allotment:	F215747 A96
<b>Summary of Application</b>			
Proposed clearance area:	0.26ha of <i>Eucalyptus socialis</i> / <i>Eucalyptus gracilis</i> / <i>Eucalyptus dumosa</i> Open Mallee Woodland		
Applicable regulation and purpose of the clearance	Regulation 12 (28) Mining Operations		
Level of risk	Level 3		
Proposed SEB offset:	Combined staged payment of \$19,472.40 including Native Vegetation Council (NVC) administration costs into the Native Vegetation Fund (NVF)		

## 2. Background

---

### 2.1. Purpose of the proposal

Southern Contracting Group Pty Ltd (Southern Contracting Group) currently hold Mineral Claim (MC) 4477 located approximately 25 kilometres (km) east from Tailem Bend on the Mallee Highway (the Site) refer to **Drawing No. 2463.DRG.001 – Site Location Plan**. A Mining Lease Proposal (MLP) is currently being assessed for the Site of which a Native Vegetation Assessment is required to inform the presence of Native Vegetation within the Site and inform the associated Significant Environmental Benefit (SEB) for the proposed quarry operations.

### 2.2. Background

On the 21 June 2019, MC 4477 was granted to Southern Contracting Group over a portion of Certificate of Title 5815/4 Folio 215747 Allotment 96 approximately 50 Hectares (ha) in size, located on the southern side of the Mallee Highway within the Murray Mallee Region. The Site is comprised of a mix of cropping and grazing land, with approximately 50 percent (%) of the area containing vegetation protected under the *Native Vegetation Act 1991*. The Surrounding land use is primarily cropping, grazing, with a road and rail reserve located adjacent the northern boundary of the Site and Heritage Agreement (HA) (HA No. 797) located immediately adjacent the southern boundary of the Site.

A Joint Site inspection was undertaken with Matthew Ramke (Director Southern Contracting Group) and Jackie Ayre (Native Vegetation Accredited Consultant) to assess the extent of vegetation that is proposed to be impacted by the proposed quarry operations within the Site as outlined within **Drawing No. 2463.DRG.002 – Staged Vegetation Clearance**.

### 2.3. Approvals Required or Obtained Under Other Legislation (including past clearance approvals)

This report is in part fulfilment of requirements under the *Native Vegetation Act 1991*

There are no Scattered Tree or Area clearance applications within 18 km of the Site.

One (1) Department for Planning Transport and Infrastructure (DPTI) Roadside Significant Site (RSSD) occurs on the Mallee Highway adjacent the block, numbered Site 209.

Two (2) Railside Significant Sites (RSS) occur in the rail corridor to the north of the Site, these are numbered five (5) and six (6).

No other legislative approvals are deemed to be required at this stage.

---

## 3. Method

---

### 3.1 Flora assessment

Following review of background information, an assessment of the Site was undertaken on 28 January 2020, by Jackie Ayre (Native Vegetation Accredited Consultant) and Matthew Ramke (Director Southern Contracting Group). The assessment involved a general survey of the Site, vegetation potentially impacted by works, and identification of habitat for species of conservation significance in the vicinity. Photographs of the Site are presented in **Section 4.1 – Vegetation Assessment**.

An online search was undertaken for the *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* Matters of Environmental Significance (MNES) and an interrogation of the Department for Environment and Water (DEW) and other databases to establish flora species known to occur at the Site.

Two (2) State listed flora species were recorded for this area, however, no species were recorded at a Federal level. A list of the rare and endangered flora species identified from the search is provided in **Attachment 1 – Plant Species Recorded (Native and Introduced)**.

### 3.2 Fauna Assessment

A listed fauna search was undertaken prior to the Site assessment via the Biological Databases of South Australia (BDBSA), Atlas of Living Australia (AoLA) and *EPBC Act 1999* Protected Matters Search Tool, for threatened fauna species, as observations 'occurring within a five (5) km radius of the Site within the past 20 years', or as having 'species or species habitat known to occur within area'.

One (1) fauna species was listed at Federal level, and seven (7) at State level within five (5) km of the Site within the past 20 years, refer **Attachment 2 - Threatened or Introduced Animal Species Recorded or Observed (Native and Introduced)**.

During the field survey, opportunistic sightings were recorded as they occurred, followed by a dedicated fauna survey, noting actual occurrence, or evidence of fauna species presence, across the Site.



## 4. Assessment Outcomes

### 4.1 Vegetation Assessment

The vegetation association at the Site is described as *Eucalyptus socialis* / *Eucalyptus. Gracilis* / *Eucalyptus. dumosa* Open Mallee with *Melaleuca acuminata* ssp. *acuminata* and *M. lanceolata*, over native and introduced grasses and forbs, refer Photos one (1) - four (4) below.

Individual mallee specimens tended to be semi-mature with very few likely to have formed hollows (none were observed). It is suspected that much of the Site is maturing regrowth which was, until fairly recently, grazed, discouraging regeneration. In the absence of sheep, rabbits and kangaroos probably exert pressure on any regeneration.

Large areas of *Avena* sp. (wild oats) dominate the block and split the vegetation in a north south orientation, dividing the remnant into two (2) patches linked by roadside vegetation. An existing quarry lies to the south of the vegetation assessed.

The Site lies within the Coorong District Council jurisdiction; the Murray Darling Depression IBRA region; and the Moorlands IBRA Association. Rainfall is 363 millimetres (mm) (average annual) and the closest soil characterisation Site, approximately 3.5 km south west, (Naturemaps, MM155), describes soils as 'highly calcareous grey loam with significant gypsum accumulation. The landform is a very gently undulating to level plain. Land use in the surrounding area is mainly grazing and cropping.

Interrogation of databases identified two (2) threatened plant species as potentially occurring at the Site; *Bothriocloa macra* and *Austrostipa pilata*. *Austrostipa* spp. were present amongst more open patches of the woodland but insufficient floral features were available for positive identification. *Bothriocloa macra* was not observed.

The total area of the block subject to the assessment is 26.25 ha, however much of the area impacted is exotic grassland dominated by *Avena* sp. The proposed quarry development has been designed as a series of stages to enable the progressive extraction within the Site as outlined in **Drawing No. 2463.DRG.002 – Staged Vegetation Clearance**. The figures area associated with each stage are as provided in **Table 1 – Staged Vegetation Clearance**.

Table 1 – Staged Vegetation Clearance

Stage	Total area	Area of native vegetation	Area to be cleared
1.	8.5ha	4.9ha	0.26ha
2.	2.76ha	0.73ha	0.33ha
3.	3.38ha	1.92ha	0.95ha
Total	14.64ha	7.55ha	1.54ha

Full details of the vegetation attributes and condition scores are provided within **Attachment 3 - Bushland Assessment Scoresheets**.



Photo 1: General view of the Site looking south from within the block nearest the eastern boundary GPS 385994/6091922



Photo 2: General view of the Site looking south east into the vegetation at the northernmost part of the block GPS 384995/6092073





**Photo 3:** General view of the Site looking south west from near the northern boundary, across exotic grassland to vegetation on the south western portion of the block GPS 384960/6092099



**Photo 4:** General view of the Site looking south west from near the north western boundary, to vegetation on the north western portion of the block GPS 384781/6092104



## 4.2 Requirements of the Regulation

The application meets the following criteria under Division 5:

12(1) Subject to this Division, native vegetation may be cleared in any of the circumstances set out in Schedule 1, Part 4, 5 or 6. Part 5 is relevant to this proposal.

The proposed clearance fits under *Regulation 12 (28) Mining Operations* and meets the requirements under this regulation:

(1) Clearance of vegetation –

a) incidental to operations authorized under a Mining Act or the Petroleum and Geothermal Energy Act 2000

### Risk Assessment

The proposal constitutes a Level 3 Clearance;

- it is in the agricultural area
- the total biodiversity score is  $\leq 250$  (54.15)
- it is not seriously at variance with the Principles of Clearance

### Principles of Clearance

*Principle (b) it has significance as a habitat for wildlife:* interrogation of databases identified eight (8) species of conservation significance recorded within five (5) km of the Site.

Fauna Type	Name	Conservation status*		Preferred Habitat Description & Comments	Likely Occurrence
		EPBC	NPWA		
		R = Rare; V = Vulnerable; E = Endangered			
BIRD	<i>Corcorax melanorhamphos</i> White-winged Chough	-	R	Dry woodlands near permanent water, such as streams or dams.	Observed during the Site assessment.
BIRD	<i>Hylacola cautus cautus</i> Shy Heathwren	-	SP	Mallee woodland with relatively dense shrub and heath understorey	Recorded 3.5 km south, south east. May be present in the more intact Heritage Area to the immediate south west of the Site, but unlikely in the patch assessed due to lack of dense understorey.
BIRD	<i>Lichenostomus cratitus occidentalis</i> Purple-gaped Honeyeater (mainland SA)	-	R	Mallee woodland and heathland	Recorded four (4) km south east of the Site. Similar species noted onsite but not confirmed.
BIRD	<i>Melanodryas cucullata cucullata</i> Hooded Robin	-	ssp	Eucalypt woodland and Mallee, and Acacia shrubland.	Recorded four (4) km south east of the Site. Key habitat components include open areas, (young Eucalypts) or

Fauna Type	Name	Conservation status*		Preferred Habitat Description & Comments	Likely Occurrence
		EPBC	NPA		
		R = Rare; V = Vulnerable; E = Endangered			
					shrubs, and suitable perches. All three (3) components occur in the vegetation assessed.
BIRD	<i>Manorina flavigula</i> Yellow-throated Miner	ssp	ssp	Wide range of dry forest and woodland habitats, especially mallee	Believed to refer to the Black-eared Miner subspecies, which does not occur in this area. One record within five (5) km of the Site but not noted as ssp.
BIRD	<i>Myiagra inquieta</i> Restless Flycatcher	-	R	Open forests, woodland; farmland	Observed onsite during the assessment.
BIRD	<i>Northiella haematogaster</i> (NC) Bluebonnet	-	ssp	Arid and semi-arid open woodlands, open plains with trees bordering watercourses, mallee	Recorded four (4) km south east of the Site. Potential habitat available.
BIRD	<i>Leipoa ocellate</i> Mallee Fowl	VU	V	Mainly semi-arid mallee, often with a spinifex understorey, sometimes in Eucalypt woodlands with dense understorey	Closest record is 18 km away. Suitable habitat may exist in the HA to the south west of the Site. Unlikely to be present in the Site assessed

Of the eight (8) species listed as threatened and potentially present, two (2) were observed, and three (3) are considered likely to find suitable habitat at the assessment Site. However, the impact is restricted to several scattered individual shrubs or small groups of very exposed vegetation amongst the open non-native areas, or on the fringes of the larger patches, not likely to be critical habitat for any of the species noted. All observations of fauna onsite was confined to the more intact vegetation in the larger patches, or to the vegetation within, or contiguous with, the wider road reserve vegetation. Therefore, clearance is considered not at variance with Principle (b).

**Principle (c) it includes plants of a rare, vulnerable or endangered species:**

None of the species recorded during the field assessment are rated Rare, Vulnerable or Endangered. Available records indicate the potential presence of two (2) listed species - *Austrostipa pilata* (SA V) and *Bothriochloa macra* (SA R) and whilst neither of these were noted, *Austrostipa pilata* has been recorded less than three (3) km to the south east of the Site. Small and infrequent patches of *Austrostipa* spp. were observed amongst small open areas in the Mallee, but specimens lacked the critical features to enable positive identification. Although its presence cannot be discounted, clearance will be confined to small areas of very degraded Mallee and individual shrubs at the edges of the vegetation, where species diversity was low and understorey almost entirely exotic. Therefore, clearance is not at variance with Principle (c).

**Principle (d) the vegetation comprises the whole, or a part, of a plant community that is Rare, Vulnerable or Endangered:**

The vegetation assessed is not part of a listed community. Therefore, clearance is not considered to be at variance with Principle (d).

### 4.3 Mitigation Hierarchy

- a) Avoidance – outline measures taken to avoid clearance of native vegetation such as making adjustments to the location, design, size or scale of the activity in order to reduce the impact.**

Southern Contracting Group originally intended to open a large section of the Site to the south west of the block for Stage 1 (see Figure 1 below), which would result in a larger clearance area for that stage, but has reduced the scale of works to potentially impact small groups and individual trees / shrubs in the more open areas, or at the very edge of the remnant patches assessed. Drawing No. 2463.DRG.002 – Staged Vegetation Clearance outlines the proposed clearance throughout all stages of quarry development which have been designed to restrict native vegetation clearance to the more degraded sections of the remnant vegetation.



Figure 1. Original Stage 1 intended area of clearance in yellow

- b) Minimization – if clearance cannot be avoided, outline measures taken to minimize the extent, duration and intensity of impacts of the clearance on biodiversity to the fullest possible extent.**

In the operation of the new extraction areas, the client intends to keep to existing tracks and avoid creating new, or widening current ones near remnant vegetation.

- c) Rehabilitation or restoration – outline measures taken to rehabilitate ecosystems that have been degraded, and to restore ecosystems that have been degraded, or destroyed by the impact of clearance that cannot be avoided or further minimized, such as allowing for the re-establishment of the vegetation.**

This is not an option for this Site; however, the appropriate SEB offset payment will be made.

- d) Offset – any adverse impact on native vegetation that cannot be avoided or further minimized should be offset by the achievement of a significant environmental benefit that outweighs that impact.**

The total combined staged SEB offset payment of **\$19,472.40** into the Native Vegetation Fund will be made. SEB payment for each respective area will be made prior to the clearance of native vegetation occurring for that stage.



## 5 Significant Environmental Benefit

### DETERMINATION OF THE SEB OBLIGATION

*Vegetation Association 1. Eucalyptus socialis / Eucalyptus Gracilis / Eucalyptus dumosa* Open Mallee over native and introduced grasses and forbs

#### Clearance Area

Vegetation Site	Native Vegetation Clearance Area (ha)	Unit Biodiversity Score	Total Biodiversity Score	SEB Points Required	SEB (ha)	SEB NVF Payment (\$) Inclusive of Administration Costs
Stage 1	0.26	34.55	8.98	9.43	1.18	3,287.55
Stage 2	0.33	34.55	11.40	11.97	1.50	4,172.65
Stage 3	0.95	34.55	32.82	34.46	4.31	12,012.20
Total	1.54	-	53.20	55.86	6.99	19,472.40

### ACHIEVING AN SEB

Indicate how the SEB will be achieved by ticking the appropriate box:

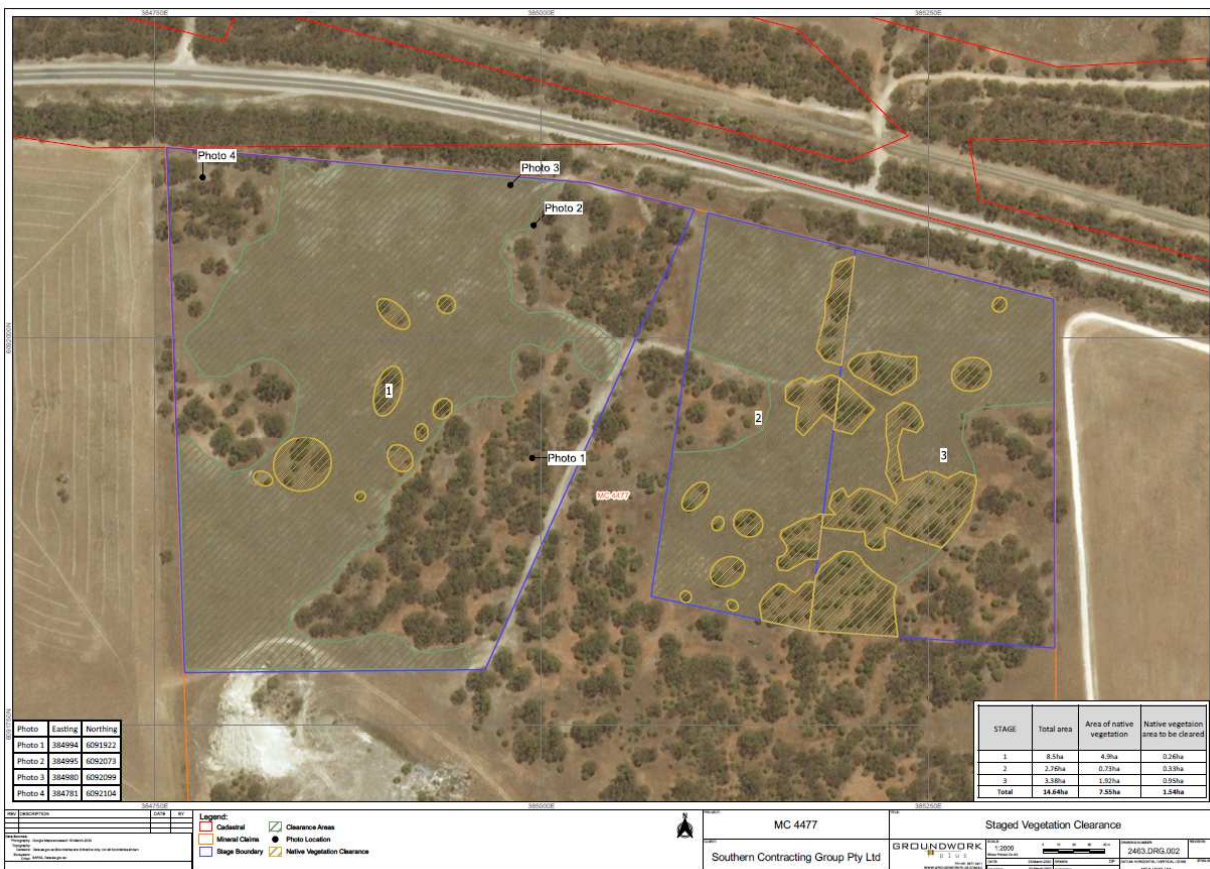
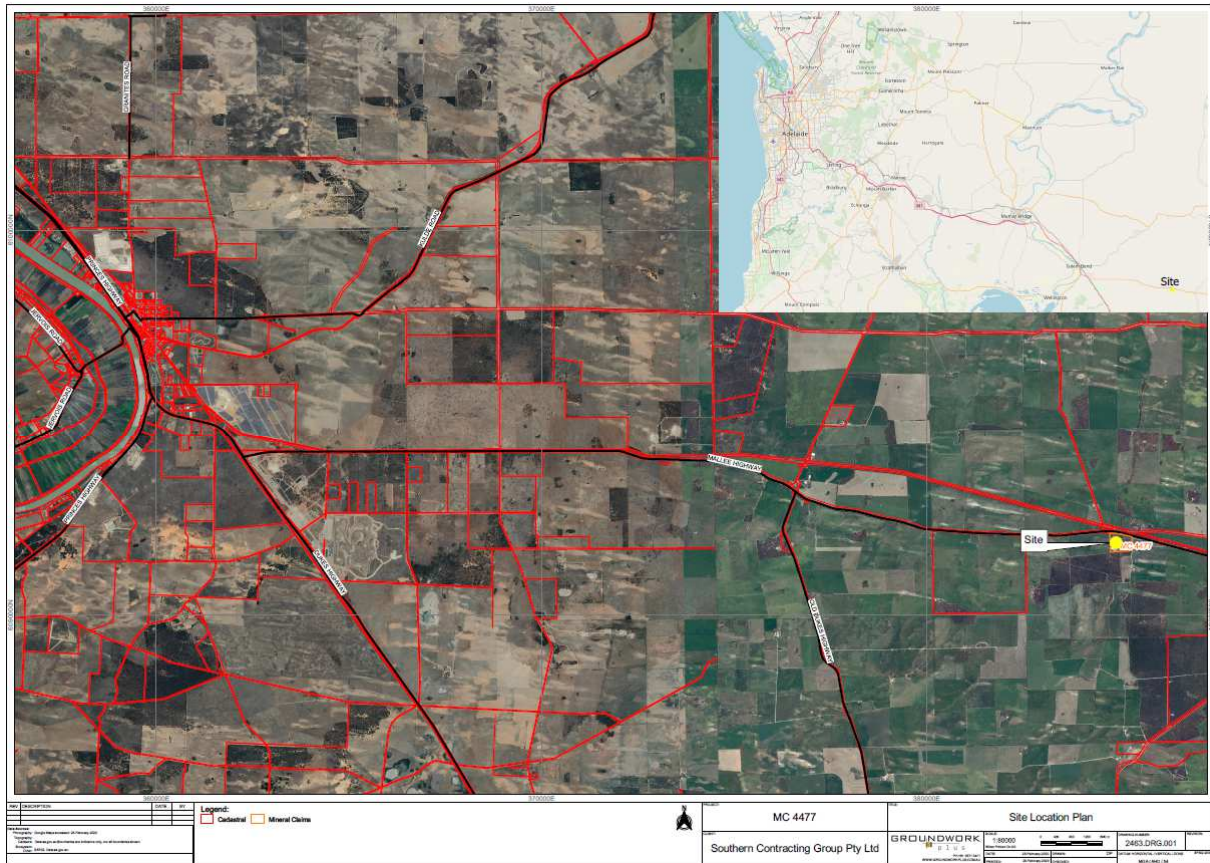
- ☐ Establish a new SEB Area on land owned by the proponent.
- ☐ Use SEB Credit that the proponent has established. Provide the SEB Credit Ref. No. \_\_\_\_\_
- ☐ Apply to have SEB Credit assigned from another person or body. The [application form](#) needs to be submitted with this Data Report.
- ☐ Apply to have an SEB to be delivered by a Third Party. The [application form](#) needs to be submitted with this Data Report.
- ☒ Pay into the Native Vegetation Fund

### FOR A PAYMENT SEB

Summary information on the amount required to be paid:

- Rainfall factor – 0.363
- Economies of scale – 0.35
- Payment amount required (including admin. fee) **\$19,472.40**

**drawings**



# attachments

# Attachment 1

---

Plant Species Recorded (Native and Introduced)





## Attachment 2

---

Threatened or Introduced Animal Species Recorded or Observed (Native and Introduced)



# Attachment 3

---

Bushland Assessment Scoresheets

# Bushland Assessment Scoresheets

(Version - 1 July 2019)

Block	A
Size of Block (Ha)	4.900
NRM Region	SA Murray Darling Basin
BCM Region	Murray Darling Basin
IBRA Association	Moorlands

ASSESSOR(S)	Jackie Ayre
DATE OF ASSESSMENT	28/1/20

## Map of the Block (Including the Sites)



## Landscape Context Scores

		% native veg. remaining in IBRA Assoc.	5
		0-5% = 0.1 pts; >5-10% = 0.08 pts; >10-20% = 0.06 pts; >20-40% = 0.04 pts; >40-80% = 0.02 pt; >80% = 0 pts	
		Score	0.1
Percent Vegetation Cover (5km radius) (%)	12		
		0-5% = 0 pts; >5-10% = 0.01 pts; >10-25% = 0.02 pts; >25-50% = 0.03 pts; >50-75% = 0.01 pt; >75-100% = 0 pts	
		Score	0.02
		% native veg. protected IBRA Assoc.	26
		0-5% = 0.03 pts; >5-10% = 0.02 pts; >10-25% = 0.01 pt; >25% = 0	
		Score	0
Block Shape Cleared perimeter:Area (km/km2)			
Cleared Perimeter (m) =	1306		
Cleared Perimeter to area ratio	26.65		
		<8 = 0.03 pts; 8 to <12 = 0.02 pts; 12 to <18 = 0.01 pt	
		Score	0
		Wetland or Riparian Habitat present	
		Riparian zone present (Yes/No) = 0.02 pt	No
		Swamp/wetland present (Yes/No) = 0.03 pts	No
		(Swamp/wetland may be +/- riparian zone)	
		Score	0
Note: Blocks will score a minimum Landscape Context Score of 1		LANDSCAPE CONTEXT SCORE (max 1.25)	1.12



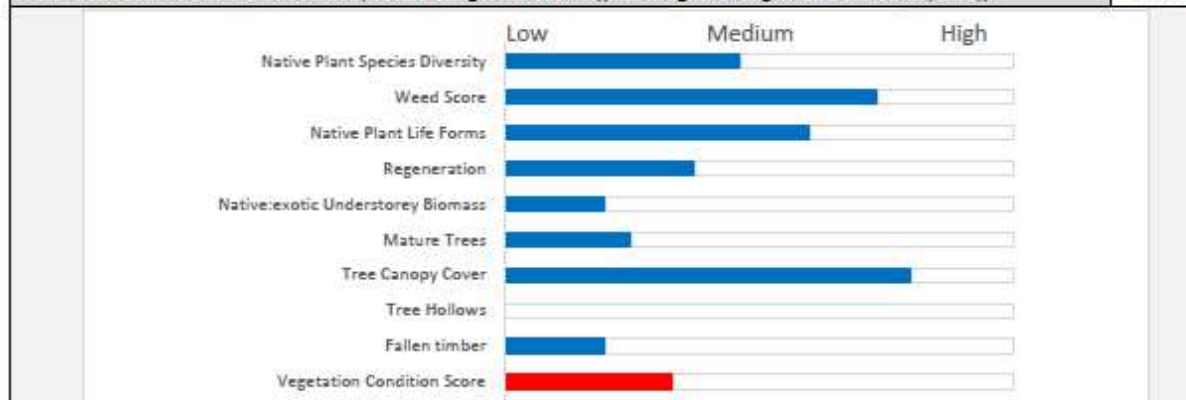
## Vegetation Condition Scores

SITE:	A1 - Stage 1
BCM COMMUNITY	MDBSA 6.1 Open Mallee with Mid dense Shrub/Tussock Understorey on Limestone Soils
VEGETATION ASSOCIATION DESCRIPTION	<i>Eucalyptus socialis</i> / <i>E. gracilis</i> / <i>E. dumosa</i> Open Mallee
SIZE OF SITE (Ha)	0.26

Benchmarked attributes (Scores determined by comparing to a Benchmark community)				Native Plant Life Forms	Cover rating
Number of Native Species (Minus herbaceous annuals for spring Surveys)		15		Trees > 15m	
Native Plant Species Diversity Score (max 30) from benchmark score weighted by a factor of 2		14.0		Trees 5 - 15 m	
				Trees < 5m	
Number of regenerating native species		2		Mallee > 5m	3
Regeneration Score (max 12) from benchmark community weighted by a factor of 1.5		4.5		Mallee < 5m	1
				Shrubs > 2m	
				Shrubs 0.5 - 2m	2
				Shrubs < 0.5	1
				Forbs	1
Weed species (Top 5 Cover x Invasiveness)		Cover (max 6)	Weed Threat Rating (max 5)	C x I	Mat Plants
Marrubium vulgare		2	3	6	Grasses > 0.2m
Echium plantagineum		2	2	4	Grasses < 0.2m
				0	Sedges > 1m
				0	Sedges < 1m
				0	Hummock grasses
				0	Vines, scramblers
				10	Mistletoe
Weed Score (max 15) from benchmark community		11		Ferns	
				Grass-tree	
				Total	11
Native Plant Life Forms (max 20) from benchmark score weighted by a factor of 2					12.0

Non-Benchmarked Attributes (Scores determined from direct field observations)		Is the community naturally treeless?	
Native:exotic Understorey biomass Score (max 5)		1	
			Fallen Timber/Debris (max 5)
			Hollow-bearing trees Score (max 5)
			Mature Tree Score (max 8)
			Tree Canopy Cover Score (max 5)


Vegetation Condition Score calculation	
Positive Vegetation Attributes Score = Native species diversity + Regeneration + Native Plant Life Forms Fallen timber/debris + Hollow-bearing trees - If the community Score is Not Benchmarked (SNB) for regeneration this score is multiplied 1.24 - If the community is naturally treeless this score is multiplied by 1.29	
	33.50
Negative Vegetation Attributes Score = (15 - Weeds) + ((10 - Biomass score - Tree Canopy Cover Score)exp2/2)	16.50
VEGETATION CONDITION SCORE (Positive veg attributes x ((80 - Negative vegetation attributes) / 80))	26.59



## Conservation Significance Score

Is the vegetation association considered a Threatened Ecological community or Ecosystem?	Yes/No
State (Provisional List of Threatened Ecosystems of SA) Rare community (0.1 pt)	<input type="checkbox"/>
State (Provisional List of Threatened Ecosystems of SA) Vulnerable community (0.2 pts)	<input type="checkbox"/>
State (Provisional List of Threatened Ecosystems of SA) Endangered community (0.3 pts)	<input type="checkbox"/>
Nationally (EPBC Act) Vulnerable community (0.35 pts)	<input type="checkbox"/>
Nationally (EPBC Act) Endangered or Critically Endangered community (0.4 pts)	<input type="checkbox"/>
Note: all sites will score a minimum Conservation Significance Score of 1	Score 1
Number of Threatened Plant Species recorded for the site (within the site)	Number
*If a species has both a State (NP&W Act) and National (EPBC Act) rating, it's only recorded for its National rating.	
State Rare species recorded (1 pt each)	1
State Vulnerable species recorded (2.5 pt each)	1
State Endangered recorded (5 pts each)	0
Nationally Vulnerable species recorded (10 pts each)	0
Nationally Endangered or Critically endangered species recorded (20 pts each)	0
0 = 0 pts; <2 = 0.04 pts; 2 - <5 = 0.08 pts; 5 - <10 = 0.12 pts; 10 - <20 = 0.16 pts; 20 or > = 0.2 pts	3.5
Score	0.08
Potential habitat for Threatened Animal Species (number observed or previously recorded)	Number
*If a species has both a State (NP&W Act) and National (EPBC Act) rating, it's only recorded for its National rating.	
State Rare species observed or locally recorded (1 pt each)	4
State Vulnerable species observed or locally recorded (2.5 pt each)	1
State Endangered species observed or locally recorded (5 pt each)	0
Nationally Vulnerable species observed or locally recorded (10 pts each)	1
Nationally Endangered or Critically endangered species observed or locally recorded (20 pts each)	0
0 = 0 pts; <2 = 0.02 pts; 2 - <5 = 0.04 pts; 5 - <10 = 0.06 pts; 10 - <20 = 0.08pts; 20 or > = 0.1 pts	16.5
Score	0.08
CONSERVATION SIGNIFICANCE SCORE	1.16

Total Scores for the Site		Vegetation Condition x Landscape Context x	
	Score	Conservation Significance =	
LANDSCAPE CONTEXT SCORE	1.12	UNIT BIODIVERSITY SCORE	34.55
VEGETATION CONDITION SCORE	26.59	Total Biodiversity Score	
CONSERVATION SIGNIFICANCE SCORE	1.16	(Biodiversity Score x hectares)	8.98

Photo Point and Vegetation Survey Location	Direction of the Photo
	SSW
	GPS Reference
	Datum WGS84
	Zone (52, 53 or 54) 54
	Easting (6 digits) 384994
	Northing (7 digits) 6091922
Description	
	Eucalyptus socialis/E. gracilis/E. dumosa Open Mallee

What is the purpose of Assessment?

Clearance

SEB Area

Other

Assessment for Clearance		Approximate hectares required	
Loss Factor	1.0	Economies of Scale Factor	0.35
Loadings for clearance of protected areas		Mean Annual rainfall for the site (mm)	363
Reductions for rehabilitation of impact site		Payment into the fund (GST Exclusive)	\$3,116.16
SEB Points required	9.43	Administration fee (GST Inclusive)	\$171.39



# Bushland Assessment Scoresheets

(Version - 1 July 2019)

Block	A
Size of Block (Ha)	0.733
NRM Region	SA Murray Darling Basin
BCM Region	Murray Darling Basin
IBRA Association	Moorlands

ASSESSOR(S)	Jackie Ayre
DATE OF ASSESSMENT	28/1/20

## Map of the Block (Including the Sites)



## Landscape Context Scores

Percent Vegetation Cover (5km radius) (%)	12
0-5% = 0 pts; >5-10% = 0.01 pts; >10-25% = 0.02 pts; >25-50% = 0.03 pts; >50-75% = 0.01 pt; >75-100% = 0 pts	
Score	0.02

Block Shape Cleared perimeter:Area (km/km2)	
Cleared Perimeter (m) =	680
Cleared Perimeter to area ratio	92.77
<8 = 0.03 pts; 8 to <12 = 0.02 pts; 12 to <18 = 0.01 pt	
Score	0

Note: Blocks will score a minimum Landscape Context Score of 1

% native veg. remaining in IBRA Assoc.	5
0-5% = 0.1 pts; >5-10% = 0.08 pts; >10-20% = 0.06 pts; >20-40% = 0.04 pts; >40-80% = 0.02 pt; >80% = 0 pts	
Score	0.1

% native veg. protected IBRA Assoc.	26
0-5% = 0.03 pts; >5-10% = 0.02 pts; >10-25% = 0.01 pt; >25% = 0	
Score	0

Wetland or Riparian Habitat present	
Riparian zone present (Yes/No) = 0.02 pt	No
Swamp/wetland present (Yes/No) = 0.03 pts (Swamp/wetland may be +/- riparian zone)	No
Score	0

LANDSCAPE CONTEXT SCORE (max 1.25)	1.12
------------------------------------	------



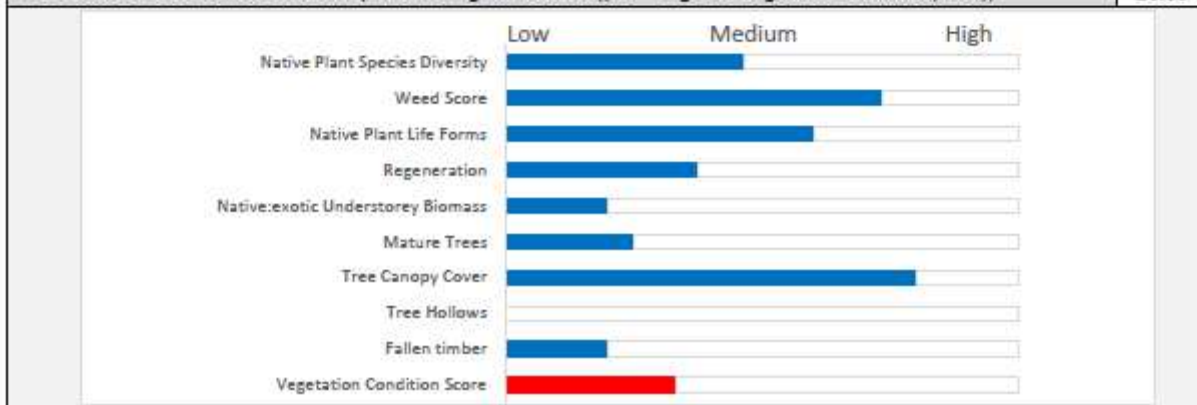
## Vegetation Condition Scores

SITE:	A1 - Stage 2
BCM COMMUNITY	MDBSA 6.1 Open Mallee with Mid dense Shrub/Tussock Understorey on Limestone Soils
VEGETATION ASSOCIATION DESCRIPTION	<i>Eucalyptus socialis</i> /E. <i>gracilis</i> /E. <i>dumosa</i> Open Mallee
SIZE OF SITE (Ha)	0.33

Benchmarked attributes (Scores determined by comparing to a Benchmark community)				Native Plant Life Forms	Cover rating
Number of Native Species (Minus herbaceous annuals for spring Surveys)				Trees > 15m	
				Trees 5 - 15 m	
Native Plant Species Diversity Score (max 30) from benchmark score weighted by a factor of 2				Trees < 5m	
				Mallee > 5m	3
				Mallee < 5m	1
Number of regenerating native species				Shrubs > 2m	
Regeneration Score (max 12) from benchmark community weighted by a factor of 1.5				Shrubs 0.5 - 2m	2
				Shrubs < 0.5	1
				Forbs	1
Weed species (Top 5 Cover x Invasiveness)				Mat Plants	
Marrubium vulgare	Cover (max 6)	Weed Threat Rating (max 5)	C x I	Grasses > 0.2m	1
Echium plantagineum	2	3	6	Grasses < 0.2m	1
				Sedges > 1m	
				Sedges < 1m	
				Hummock grasses	
				Vines, scramblers	1
				Mistletoe	
				Ferns	
				Grass-tree	
				Total	11
Weed Score (max 15) from benchmark community					
Native Plant Life Forms (max 20) from benchmark score weighted by a factor of 2					12.0

Non-Benchmarked Attributes (Scores determined from direct field observations)		Is the community naturally treeless?	
Native:exotic Understorey biomass Score (max 5)		Fallen Timber/Debris (max 5)	1
		Hollow-bearing trees Score (max 5)	0
		Mature Tree Score (max 8)	2
		Tree Canopy Cover Score (max 5)	4

Vegetation Condition Score calculation	
Positive Vegetation Attributes Score = Native species diversity + Regeneration + Native Plant Life Forms Fallen timber/debris + Hollow-bearing trees	
- If the community Score is Not Benchmarked (SNB) for regeneration this score is multiplied 1.24	
- If the community is naturally treeless this score is multiplied by 1.29	
	33.50
Negative Vegetation Attributes Score = (15 - Weeds) + ((10 - Biomass score - Tree Canopy Cover Score)exp2/2)	16.50
VEGETATION CONDITION SCORE (Positive veg attributes x ((80 - Negative vegetation attributes) / 80))	26.59



## Conservation Significance Score

Is the vegetation association considered a Threatened Ecological community or Ecosystem?	Yes/No
State (Provisional List of Threatened Ecosystems of SA) Rare community (0.1 pt)	<input type="checkbox"/>
State (Provisional List of Threatened Ecosystems of SA) Vulnerable community (0.2 pts)	<input type="checkbox"/>
State (Provisional List of Threatened Ecosystems of SA) Endangered community (0.3 pts)	<input type="checkbox"/>
Nationally (EPBC Act) Vulnerable community (0.35 pts)	<input type="checkbox"/>
Nationally (EPBC Act) Endangered or Critically Endangered community (0.4 pts)	<input type="checkbox"/>
Note: all sites will score a minimum Conservation Significance Score of 1	Score 1
Number of Threatened Plant Species recorded for the site (within the site)	Number
*If a species has both a State (NP&W Act) and National (EPBC Act) rating, it's only recorded for its National rating.	
State Rare species recorded (1 pt each)	1
State Vulnerable species recorded (2.5 pt each)	1
State Endangered recorded (5 pts each)	0
Nationally Vulnerable species recorded (10 pts each)	0
Nationally Endangered or Critically endangered species recorded (20 pts each)	0
0 = 0 pts; <2 = 0.04 pts; 2 - <5 = 0.08 pts; 5 - <10 = 0.12 pts; 10 - <20 = 0.16 pts; 20 or > = 0.2 pts	3.5
Score	0.08
Potential habitat for Threatened Animal Species (number observed or previously recorded)	Number
*If a species has both a State (NP&W Act) and National (EPBC Act) rating, it's only recorded for its National rating.	
State Rare species observed or locally recorded (1 pt each)	4
State Vulnerable species observed or locally recorded (2.5 pt each)	1
State Endangered species observed or locally recorded (5 pt each)	0
Nationally Vulnerable species observed or locally recorded (10 pts each)	1
Nationally Endangered or Critically endangered species observed or locally recorded (20 pts each)	0
0 = 0 pts; <2 = 0.02 pts; 2 - <5 = 0.04 pts; 5 - <10 = 0.06 pts; 10 - <20 = 0.08pts; 20 or > = 0.1 pts	16.5
Score	0.08
CONSERVATION SIGNIFICANCE SCORE	1.16

## Total Scores for the Site

	Score	Vegetation Condition x Landscape Context x Conservation Significance =	
LANDSCAPE CONTEXT SCORE	1.12	UNIT BIODIVERSITY SCORE	34.55
VEGETATION CONDITION SCORE	26.59	Total Biodiversity Score	
CONSERVATION SIGNIFICANCE SCORE	1.16	(Biodiversity Score x hectares)	11.40

Photo Point and Vegetation Survey Location	Direction of the Photo
	SSW
	GPS Reference
	Datum WGS84
	Zone (52, 53 or 54) 54
	Easting (6 digits) 384994
	Northing (7 digits) 6091922
Description	
	Eucalyptus socialis/E. gracilis/E. dumosa Open Mallee

What is the purpose of Assessment?

Clearance

SEB Area

Other

## Assessment for Clearance

Loss Factor	1.0	Approximate hectares required	1.50
Loadings for clearance of protected areas		Economies of Scale Factor	0.35
Reductions for rehabilitation of impact site		Mean Annual rainfall for the site (mm)	363
SEB Points required	11.97	Payment into the fund (GST Exclusive)	\$3,955.12
		Administration fee (GST Inclusive)	\$217.53



# Bushland Assessment Scoresheets

(Version - 1 July 2019)

Block	Stage 3
Size of Block (Ha)	1.920
NRM Region	SA Murray Darling Basin
BCM Region	Murray Darling Basin
IBRA Association	Moorlands

ASSESSOR(S)	Jackie Ayre
DATE OF ASSESSMENT	28/1/20

## Map of the Block (Including the Sites)



Map data is compiled from a variety of sources and is not to be used for navigation purposes. It is not a substitute for a professional survey. It is not a substitute for a professional survey. It is not a substitute for a professional survey.

## Landscape Context Scores

Percent Vegetation Cover (5km radius) (%)	12
0-5% = 0 pts; >5-10% = 0.01 pts; >10-25% = 0.02 pts; >25-50% = 0.03 pts; >50-75% = 0.01 pt; >75-100% = 0 pts	
Score	0.02

Block Shape Cleared perimeter:Area (km/km2)	
Cleared Perimeter (m) =	667
Cleared Perimeter to area ratio	34.74
<8 = 0.03 pts; 8 to <12 = 0.02 pts; 12 to <18 = 0.01 pt	
Score	0

Note: Blocks will score a minimum Landscape Context Score of 1

% native veg. remaining in IBRA Assoc.	5
0-5% = 0.1 pts; >5-10% = 0.08 pts; >10-20% = 0.06 pts; >20-40% = 0.04 pts; >40-80% = 0.02 pt; >80% = 0 pts	
Score	0.1

% native veg. protected IBRA Assoc.	26
0-5% = 0.03 pts; >5-10% = 0.02 pts; >10-25% = 0.01 pt; >25% = 0	
Score	0

Wetland or Riparian Habitat present	
Riparian zone present (Yes/No) = 0.02 pt	No
Swamp/wetland present (Yes/No) = 0.03 pts	No
(Swamp/wetland may be +/- riparian zone)	
Score	0

LANDSCAPE CONTEXT SCORE (max 1.25)	1.12
------------------------------------	------

## Vegetation Condition Scores

SITE:	A1 - Stage 3
BCM COMMUNITY	MDBSA 6.1 Open Mallee with Mid dense Shrub/Tussock Understorey on Limestone Soils
VEGETATION ASSOCIATION DESCRIPTION	<i>Eucalyptus socialis</i> / <i>E. gracilis</i> / <i>E. dumosa</i> Open Mallee
SIZE OF SITE (Ha)	0.95

Benchmarked attributes (Scores determined by comparing to a Benchmark community)				Native Plant Life Forms	Cover rating
Number of Native Species (Minus herbaceous annuals for spring Surveys)				Trees > 15m	
				Trees 5 - 15 m	
Native Plant Species Diversity Score (max 30) from benchmark score weighted by a factor of 2				Trees < 5m	
				Mallee > 5m	3
				Mallee < 5m	1
Number of regenerating native species				Shrubs > 2m	
Regeneration Score (max 12) from benchmark community weighted by a factor of 1.5				Shrubs 0.5 - 2m	2
				Shrubs < 0.5	1
				Forbs	1
				Mat Plants	
				Grasses > 0.2m	1
				Grasses < 0.2m	1
				Sedges > 1m	
				Sedges < 1m	
				Hummock grasses	
				Vines, scramblers	1
				Mistletoe	
				Ferns	
				Grass-tree	
				Total	11
Native Plant Life Forms (max 20) from benchmark score weighted by a factor of 2					12.0

Non-Benchmarked Attributes (Scores determined from direct field observations)		Is the community naturally treeless?	
Native:exotic Understorey biomass Score (max 5)		1	
		Fallen Timber/Debris (max 5)	1
		Hollow-bearing trees Score (max 5)	0
		Mature Tree Score (max 8)	2
		Tree Canopy Cover Score (max 5)	4

### Vegetation Condition Score calculation

Positive Vegetation Attributes Score = Native species diversity + Regeneration + Native Plant Life Forms

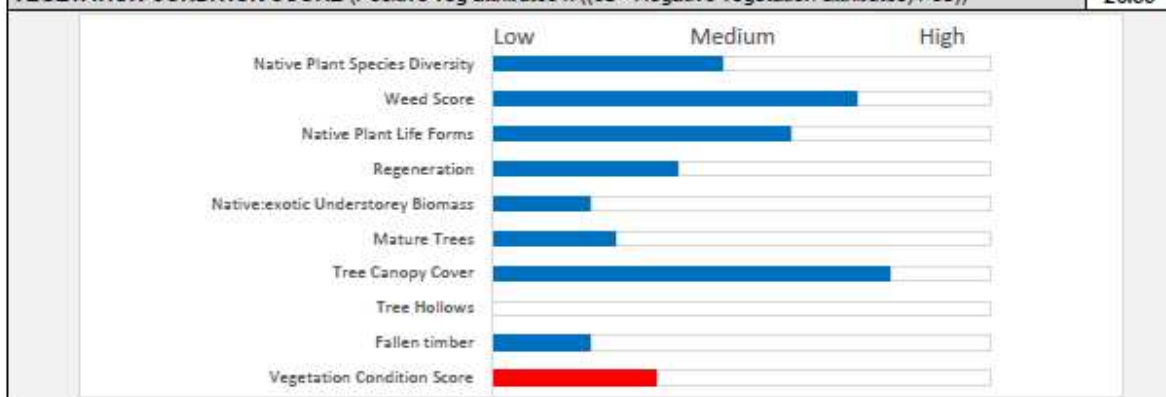
Fallen timber/debris + Hollow-bearing trees

- If the community Score is Not Benchmarked (SNB) for regeneration this score is multiplied 1.24

- If the community is naturally treeless this score is multiplied by 1.29

Negative Vegetation Attributes Score = (15 - Weeds) + ((10 - Biomass score - Tree Canopy Cover Score)exp2/2)

VEGETATION CONDITION SCORE (Positive veg attributes x ((80 - Negative vegetation attributes) / 80))





## Conservation Significance Score

Is the vegetation association considered a Threatened Ecological community or Ecosystem?	Yes/No
State (Provisional List of Threatened Ecosystems of SA) Rare community (0.1 pt)	<input type="checkbox"/>
State (Provisional List of Threatened Ecosystems of SA) Vulnerable community (0.2 pts)	<input type="checkbox"/>
State (Provisional List of Threatened Ecosystems of SA) Endangered community (0.3 pts)	<input type="checkbox"/>
Nationally (EPBC Act) Vulnerable community (0.35 pts)	<input type="checkbox"/>
Nationally (EPBC Act) Endangered or Critically Endangered community (0.4 pts)	<input type="checkbox"/>
Note: all sites will score a minimum Conservation Significance Score of 1	Score 1
Number of Threatened Plant Species recorded for the site (within the site)	Number
*If a species has both a State (NP&W Act) and National (EPBC Act) rating, it's only recorded for its National rating.	
State Rare species recorded (1 pt each)	1
State Vulnerable species recorded (2.5 pt each)	1
State Endangered recorded (5 pts each)	0
Nationally Vulnerable species recorded (10 pts each)	0
Nationally Endangered or Critically endangered species recorded (20 pts each)	0
0 = 0 pts; <2 = 0.04 pts; 2 - <5 = 0.08 pts; 5 - <10 = 0.12 pts; 10 - <20 = 0.16 pts; 20 or > = 0.2 pts	3.5
Score	0.08
Potential habitat for Threatened Animal Species (number observed or previously recorded)	Number
*If a species has both a State (NP&W Act) and National (EPBC Act) rating, it's only recorded for its National rating.	
State Rare species observed or locally recorded (1 pt each)	4
State Vulnerable species observed or locally recorded (2.5 pt each)	1
State Endangered species observed or locally recorded (5 pt each)	0
Nationally Vulnerable species observed or locally recorded (10 pts each)	1
Nationally Endangered or Critically endangered species observed or locally recorded (20 pts each)	0
0 = 0 pts; <2 = 0.02 pts; 2 - <5 = 0.04 pts; 5 - <10 = 0.08 pts; 10 - <20 = 0.08pts; 20 or > = 0.1 pts	16.5
Score	0.08
CONSERVATION SIGNIFICANCE SCORE	1.16

Total Scores for the Site		Vegetation Condition x Landscape Context x Conservation Significance =	
	Score	UNIT BIODIVERSITY SCORE	34.55
LANDSCAPE CONTEXT SCORE	1.12	Total Biodiversity Score	
VEGETATION CONDITION SCORE	26.59	(Biodiversity Score x hectares)	32.82
CONSERVATION SIGNIFICANCE SCORE	1.16		

Photo Point and Vegetation Survey Location	Direction of the Photo
	SSW
	GPS Reference
	Datum WGS84
	Zone (52, 53 or 54) 54
	Easting (6 digits) 384994
	Northing (7 digits) 6091922
Description	Eucalyptus socialis/E. gracilis/E. dumosa Open Mallee

What is the purpose of Assessment?

Clearance

SEB Area

Other

Assessment for Clearance		Approximate hectares required	
Loss Factor	1.0	Economies of Scale Factor	0.35
Loadings for clearance of protected areas		Mean Annual rainfall for the site (mm)	363
Reductions for rehabilitation of impact site		Payment into the fund (GST Exclusive)	\$11,385.97
SEB Points required	34.46	Administration fee (GST Inclusive)	\$626.23