

## WORK PLAN SPECIFIC CONDITIONS


### Work Authority WA1478

*Mineral Resources (Sustainable Development) Act  
1990*

Tenement Number: WA1478

Plan Number: PLN001732

Work Plan Statutorily Endorsed

Signed: 

Delegate of the Department Head

Date: 01/05/2024

### EARTH RESOURCES REGULATOR

1. The Authority Holder must maintain a material balance register that demonstrates sufficient material is available on site to achieve the backfill of the final terminal batter in accordance with the approved rehabilitation plan.
2. The Authority Holder must not extract beyond a 1 vertical to 3 horizontal 1V:3H slope at the terminal batter if the material balance identifies a shortage of suitable material to achieve the backfill of the final terminal batter in accordance the approve rehabilitation plan.

### THE DEPARTMENT OF ENERGY, ENVIRONMENT AND CLIMATE ACTION

1. If the quarrying operations encounter any signs of cave formations which may be affected by the quarrying operations, then the work authority holder must cease work in this location and, as soon as practicable, notify the local delegate of the Secretary to the Department administering the *Flora and Fauna Guarantee Act 1988* (or its successor in law). As a result of such notification, the local delegate of the Secretary to the Department administering the *Flora and Fauna Guarantee Act 1988* (or its successor in law) may require the work authority holder to submit a report (prepared by a suitably qualified expert) for approval. Any such report should investigate whether the karst or cave formations provide habitat for threatened native flora or fauna species, such as the Southern Bent-wing Bat. If there is deemed to be habitat for threatened native flora or fauna species, then the report should recommend appropriate avoidance and mitigation measures. These avoidance and mitigation measures are then to be incorporated into quarry approvals.

## Work Authority WA1478 Work Plan (WA) PLN-001732

### Licence Ownership Details

Licensee	Colin Goldsworthy
Registered Address	Steeles Road Mortlake Victoria 3272

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### Plan Summary Details

Project Name	Mount Shadwell Scoria Quarry
Plan Description	<p>Mount Shadwell Scoria Quarry is located on Lots 1, 2 &amp; 4 on the lower northern slopes of Mount Shadwell approximately 2.5km north of Mortlake. (Please refer to Location and Regional Plans). The site, a farming property is reasonably isolated in an area of grazing and cropping properties, with the closest residence being the owners. (Please refer to Receptor Plan for details). Lots 1, 2 &amp; 4 are intensely cultivated and are devoid of native vegetation. Lots 1 &amp; 2 are area of approximately 7.3 ha. Approximately 2 ha of Lot 1 has been historically excavated under the previous ownership. Lot 4, an area of 24.3 ha is in the same ownership, as Lots 1 &amp; 2 and lies immediately west of Lot 1. (Please refer to Site and Location Plans). The material to be quarried is volcanic scoria. Waste rock does not appear to be present., all of the extracted scoria will be processed. (Please refer to Douglas Partners Geotechnical Report, Sections 2 and 4). The intended use of the product is for general road and farm track base.</p> <p>A bulldozer will scrape top soil and overburden off the site that is to be excavated and stockpile separately for re-use during rehabilitation of that particular site. As the quarry is located within an area of declared Aboriginal Sensitivity, to minimise the possible random distribution of heritage some of these stockpiles will be located within the 20m buffer adjacent to the site to be excavated, that is Stages 1 &amp; 2 of the existing quarry and Stages 1, 2, 7 &amp; 8 within Lot 4. (Please refer to Mount Shadwell Scoria Quarry Mortlake Cultural Heritage Management Plan). The buffers to be utilised for this purpose are a part of the working farm and are annually ploughed and sown to crop or pasture. As previously stated there is no remaining native vegetation that will impacted by this activity. Topsoil depth is fairly consistent across the area being on average 0-20cm in depth, estimated at 60,291m<sup>3</sup>. Overburden depth is variable, 0.1m depending on the underlying scoria, estimated at 324527m<sup>3</sup>. (Please refer to sheets 9/27 and 25/27 of Work Plans). The existing quarry is screened from view to commuters travelling on the Mortlake Terang Road. Lot 4 is partially visible to south bound commuters. It is proposed to establish an indigenous tree plantation on the northern face to screen</p>

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	<p>this area from view. The quarry will initially extract the western face of the existing quarry and then progress into Lot 4 in 8 stages. When final extraction and rehabilitation is completed in Lot 4, the eastern face of the old quarry will then be extracted and rehabilitated. The area open at any one time will not exceed 2ha. As each stage is extracted the area will be rehabilitated. (Please refer to Rehabilitation Plan). Operating hours are, Monday to Friday between 7am and 6pm and 7am-12 noon on Saturdays. It is expected that 6 trucks per day, will be accessing the site. The quarry will be closed on weekends and public holidays. Access off the Mortlake Ararat Road will be retained. Recoverable scoria is estimated at 2,994,109 cubic meters. Quarry life is expected to be 50 years+-.</p> <p><b>Batter profile</b></p> <ul style="list-style-type: none"> <li>Working 1V:2H. - 1V:3H. (Face height more than 15m)</li> <li>Rehabilitation 1V:3H</li> <li>Some rehabilitated batters will be softer than 1V:3H to reduce slope angle to mimic the existing slopes of Mount Shadwell as much as is practical.</li> </ul> <p><b>Benching</b></p> <ul style="list-style-type: none"> <li>The work face will not be benched.</li> </ul> <p>(Please refer to Douglas Partners Geotechnical Report)</p> <p><b>Method of Processing.</b></p> <ul style="list-style-type: none"> <li>Scoria will be excavated by bulldozer pushing downslope with rippers and stockpiled on the quarry floor for crushed and screening. A portable crusher will be bought on site as required. Finished product will also be stockpiled on the quarry floor for loading into customer trucks. (Please refer to Work Plan sheets, 1/27 &amp; 12/27).</li> </ul> <p><b>Blasting.</b></p> <ul style="list-style-type: none"> <li>Blasting will not be undertaken.</li> </ul> <p><b>Access.</b></p> <ul style="list-style-type: none"> <li>The existing access off the Mortlake Ararat Road will be retained.</li> </ul> <p><b>Depth.</b></p> <ul style="list-style-type: none"> <li>No depth limit on title.</li> </ul> <p><b>Quarry Depth.</b></p> <ul style="list-style-type: none"> <li>Working depths to the quarry floor varies from 0.6m to 25m at the deepest point of stage 3 in Lot 4. (Please refer to Work Plans for details of depth variations).</li> </ul> <p><b>Erosion/Sedimentation.</b></p> <ul style="list-style-type: none"> <li>The extraction area is lower than the surrounding ground levels preventing water runoff onto the adjoining farming land.</li> <li>Apart from a small section of Blind Creek, (approximately 1.5-2km west of the work site), there are no waterways or wetlands within 2km of the work site. (Please refer to Receptor Plan).</li> <li>No waterways/catchments or drains will be receive runoff water from the quarry.</li> <li>All water will be contained within the work site. (Please refer to Work Plans, 3/37 &amp; 12/27).</li> <li>Sediment ponds will be dug in each stage as extractions progress. These ponds are designed to contain runoff from a 1:10 year flood event. (Please refer to Work Plan drawings, 1/27 &amp; 12/27).</li> </ul>
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	<ul style="list-style-type: none"> <li>For each stage the quarry floor level slopes into the sediment pond to capture runoff within that stage.</li> <li>A 1m high berm will be constructed on the upfaces of each stage to prevent storm water from flowing into the work site. (Please refer to Work Plan sheet 26/27 and Risk Treatment Plans No 7, 11 &amp; 12).</li> </ul> <p>Water.</p> <ul style="list-style-type: none"> <li>It is not proposed to wash scoria on site.</li> <li>If water is required for dust suppression it will be sourced from the sediment ponds.</li> <li>Ground water will not be intercepted. (Please refer to Douglas Partners Geotechnical Report and indicative water table depth shown on Work Plan sheets, 4/27 &amp; 15/27).</li> </ul> <p>Services.</p> <ul style="list-style-type: none"> <li>No fixed structures or buildings will be erected on site.</li> <li>Power is not provided.</li> <li>No fixed plant on site.</li> </ul> <p>Mobile Plant.</p> <ul style="list-style-type: none"> <li>As required portable machinery e.g. bulldozer, front end loader and crushing/screening plant will be bought on site to extract, stockpile and crush and load the product into customer trucks.</li> <li>Fuel will be provided via a suitable vehicle.</li> <li>If required a water truck will be bought on site for dust suppression.</li> <li>A designated parking area is provided for staff vehicles. (Please refer to Work Plan sheet 1/27).</li> </ul> <p>Housekeeping/Waste</p> <ul style="list-style-type: none"> <li>Staff day waste only will be produced. No industrial waste will be produced.</li> <li>A sealed rubbish container will be kept on site and emptied into a licensed facility as required.</li> <li>A portable toilet will be provided by service contractors.</li> <li>No fuels or lubricants will be stored on site.</li> <li>Equipment will be refuelled by a service vehicle fitted with a certified fuel tank.</li> <li>A fuel spills kit will be kept on site.</li> </ul> <p>Vermin and Noxious Weeds.</p> <ul style="list-style-type: none"> <li>The existing area is intensively cultivated farm land.</li> <li>There are no suitable habitats for vermin to occupy.</li> <li>There is no evidence of vermin, e.g. rabbit warrens and weed invasion.</li> <li>The site is cultivated annually for crop or pasture production preventing colonisation by pests.</li> <li>Equipment for use in the quarry prior to entering the site will be pre cleaned to remove any weed seed. (Please refer to Risk Treatment Plans No's 9, 13 &amp; 14 &amp; Pest Management Plan).</li> </ul> <p>Heritage.</p> <ul style="list-style-type: none"> <li>The site is located within an area of declared Aboriginal Heritage Sensitivity, (Volcanic cones of Western Victoria). (Please refer to Aboriginal area of cultural sensitivity plan). A Cultural Heritage</li> </ul>
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	<p>Management Plan,(CHMP) has been undertaken in accord with Aboriginal heritage legislation. This CHMP has been endorsed by Eastern Maar Aboriginal Corporation, (EMAC), the Registered Aboriginal Party, (RAP) for this area.</p> <ul style="list-style-type: none"> <li>• A designated Aboriginal cultural site adjoins the south east corner of Lot 4. (Please refer to Aboriginal area of sensitivity plans).</li> <li>• There are no other known heritage values within or nearby to the worksite.</li> </ul> <p>Environment.</p> <ul style="list-style-type: none"> <li>• Lots 1, 2 &amp; 4 are devoid of native vegetation. The area have been extensively grazed and cropped for many years. DELWP advised that the existing quarry face may contain nesting sites for avian species. This face will be extracted in accord with DELWP recommendations.</li> <li>• DELWP advised that Southern Bent-wing Bats, (SBWB) may frequent a rocky outcrop on Mount Shadwell approximately 100m south of Lot 4.and within the proposed quarry area This site and the quarry footprint was investigated by a DELWP officer, no evidence of suitable SBWB habitats were found.</li> <li>• The tree plantation proposed for the north face of Lot 4 will use endemic species as prescribed by DELWP. (Please refer to DELWP report, 4th May 2021 ref. SP474756).</li> </ul> <p>Rehabilitation.</p> <ul style="list-style-type: none"> <li>• Top soil and overburden will be scraped from the work site and stockpiled separately for later resurfacing of the site when rehabilitated. (Please refer to work plan drawings, 1/27 &amp; 12/27showing stockpile locations). The proposed use of the work site following extraction is that the area is returned to agricultural productivity that is consistent with the current use. Rehabilitation will be progressive as each stage is extracted. The sediment ponds will be filled in. Stockpiled overburden, then topsoil will be bladed over the site and then sown to pasture or crop. Following rehabilitation, monitoring will be undertaken for a minimum 12 months to ensure germination of pasture grasses or crop. If required weed and pest animal control measures will be undertaken by the owner. This is the normal annual cropping/pasture rotation undertaken by the owner on this land. (Please refer to Rehabilitation Plan and Noxious Weeds and Pest Animal Control Plan).</li> </ul> <p>Receptors within 2km.</p> <p>Please refer to Receptor Plan.</p> <ul style="list-style-type: none"> <li>• There are 18 residences within 2km, the closest being the landowners approximately 300m north.</li> <li>• There are no wetlands, public land or reserves within 2km.</li> <li>• A small section of Blind Creek is approximately 1.5-2km west of Lot 4.</li> <li>• Moyne Shire Council operates a scoria quarry approximately 500m southeast of the work site.</li> <li>• Mount Shadwell Stony Rises, a declared Aboriginal cultural area adjoins Lots 4 in the south east corner.</li> <li>• All of the quarry area lies within an area of Declared Aboriginal Heritage Sensitivity. (Please refer to Aboriginal Heritage Sensitivity area plan).</li> <li>• Mortlake Ararat Road is approximately 500m east of WA1478.</li> </ul>
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Area Details	
Property Name	
Address	19 Steeles Lane
Suburb / Town	Mortlake
Postcode	3272
Land Tenure (ownership) details	
Land Tenure Type	The site is owned by operator (freehold)
Depth Limitations	
Depth Limits	Maximum floor depth 24.98m

Resource Type	
WA Commodity	Scoria
WA Primary Commodity	Scoria
Total Resource Estimate	2,861,497.00
Unit of Measure	Cubic metres

Proposed Final Depth of Extraction	
Estimated Max Terminal Depth	24.98 metres
Batter Slope Angle	degrees

Top soil, overburden and subsoil disturbance	
Est Volume of Top Soil	60,291.00
Unit of Measure Top Soil	Cubic metres
Est Depth of Top Soil	0.20 metres
Est Volume of Overburden	301,456.00
Unit of Measure Overburden	Cubic metres
Est Depth of Overburden	1,000,000.00 metres
Area of Disturbance	31.60 hectares

Operation Type	
Operation Type	Dry open pit; Single level
Operation Type – Other	

Plant, Equipment and Method	
No permanent on site plant and equipment. Bulldozer with rippers. Front end Loader. Crushing and screening plant on site as required.	

No onsite fuel storage
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Operating Hours (24 Hour)			
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	Above Ground Operations	Sales	Processing
Mon-Fri Start	7:00	7:00	7:00
Mon-Fri End	18:00	18:00	18:00
Sat Start	7:00	7:00	7:00
Sat End	12:00	12:00	12:00
Sun Start	N/A	N/A	N/A
Sun End	N/A	N/A	N/A
Public Holiday Activity	No	No	No
Operational hours Clarification	7am-6pm Monday to Friday. Sat 7am-12noon. No weekends or public holidays		

## Attachments Provided

Work Plan Description (WA1478 General summary pdf 3:4:24.pdf)
Location Plan (WA1478 Location Plan.pdf)
Regional Plan (WA1478 site plan 2:4:24.pdf)
Cultural Heritage Sensitivity Map (WA1478 Aboriginal Sensitivity Area.pdf)
Site Plans (Mt Shadwell Quarry Design J_2.pdf)
Risk Register (WA1478 Risk Register Dec 23.xlsx)
Risk Treatment Plans (WA1478 RMP pdf.docx)
Rehabilitation Plan (WA1478 Rehab Plan pdf 3:4:24.docx)
Community Engagement Plan (WA1478 CEP pdf .docx)
Geotechnical Inspection (WA 1478 Geotechnical report.pdf)
Geotechnical Assessment (WA1478 Geotech revue.pdf)
Fire Management Plan (WA1478 FMP .docx)
Pest Management Plan (WA1478 Pest Mgt Plan .docx)
Cultural Heritage Management Plan (WA 1478 CHMP 17781 Mt Shadwell Mortlake_APPROVED.pdf)

## Mount Shadwell Scoria Quarry

### General Summary.

#### Location.

Mount Shadwell Scoria Quarry on the lower northern slopes of Mount Shadwell is located on a cropping and grazing property at 19 Steeles Lane, approximately 3.5km north of Mortlake. The proposed quarry is located on Lots 1, 2 & 4, an area of 31.6 ha. An existing old quarry, approximately 2ha in area is located on Lot 1, (TP870063G). Lot 4, an area of 24.3 ha is in the same ownership, as Lots 1 & 2 and lies immediately southwest of Lot 1. (Please refer to Plan 1. Page 6.). The whole of the area is devoid of native vegetation.

#### Historic Land Use.

19 Steeles Lane is a high intensity cropping and fat lamb production property.

Lot 1 has been partially quarried by previous land owners. Several years ago an application to license the old quarry lapsed, at this time ERR designated the application as WA1478. The current land owner, and applicant accesses scoria from this site for the maintenance of his farm tracks and hard stands. The site is not contaminated, e.g. pests, weeds, historic rubbish dumps, abandoned machinery and the like on site. {Please refer to photo 1. Page 8}.

#### Current Land Use.

The site for the proposed quarry on Lots 1, 2 & 4 is currently used for intensive agriculture, cropping and fat lamb production. The property is well managed, there is no evidence of pest animals and weeds.

(Please refer to Photos No. 2, 3 & 4. Pages, 8 & 9).

**Geology.** The proposed quarry is located within the Western Plains geomorphological unit, specifically within the Volcanic Plains. The volcanic plains were built up by sporadic volcanic eruptions over a period of about 5 million years, are known geologically as the Newer Volcanic Group, and form the Newer Volcanic Province of Victoria. Much of the plains were formed from lobes of lava which flowed from the eruption points, overlapping to form a veneer of basalt lava flows. The flow varies in thickness according to both the underlying topography and the present-day surface. The flows are interleaved in places with pyroclastic deposits (scoria and tuff) and discontinuous buried palaeosols of variable thickness. The geology comprises scoria from the explosive eruption of Mt Shadwell, a magmatic volcanic complex with a number of overlapping craters, which is located directly south of the quarry, (Boyce 2013: 458; Ollier & Joyce 1964: 358; Rosengren 1994: 238). The scoria deposits directly overlie stony rise basalt, which occurred as a first phase of eruption of Mt Shadwell before the final, more explosive phase of eruption took place (Ollier & Joyce 1964: 367; Welch et al. 2011). The volcanic material produced by Mt Shadwell has not been subject to dating, and so definitive ages of the eruption period is not available. However, based on ages of basalts in the surrounding region, it is likely that Mt Shadwell erupted between 1.1-2.15 Ma BP (Gray & McDougall 2009: 248). The proposed quarry is located within the geomorphological subdivision 6.1.1 - Eruption points: maars, scoria cones and lava shields, including associated ash and scoria deposits (Lake Purrumbete, Mt. Elephant, Mt Cottrell). This subdivision consists of scoria cones, lava shields, composite cones (of both scoria and lava), and maars. Associated soil types include shallow to friable (black, red or brown) gradational soils (Dermosols, Ferrosols) (VRO Online accessed May 2021). The soils are generally thinner on more elevated areas due to slope processes, and increase in depth with decreasing elevation. Lava from the volcanic eruptions was generally very fluid and flowed along the lowest points in the landscape often resulting in blocked drainage systems (VRO Online accessed May 2021). This has created a relatively poorly developed drainage system in the region, with a high density of swamp and lake deposits formed by drainage disruption (Welch et al 2011). Blind Creek is the only watercourse that dissects the geographic region and it is situated 1.5-2 km north and west of the proposed quarry. (Please refer to Figure 1. Page 7).

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**Proposal.**

The proposed quarry site is a part of an intensively managed grazing and cropping property. The site is devoid of native vegetation. The proposed quarry, an area of 31.6 ha, on Lots 1, 2, & 4 located at 19 Steeles Lane. Approximately 2 ha. of Lot 1 was historically excavated under a previous ownership. A small section of the extracted southern face within Stage 1 of Lot 1 approximately 30m wide has reduced the mandatory buffer from 20m to approximately 6-8m in width. Moyne Shire Council has advised that this matter will be considered when a planning application is received. (Please refer to Council correspondence via email, 28<sup>th</sup> Nov 23). Lot 4, an area of 24.3ha lies immediately south and west of Lot 1. (Please refer to Site and Location Plans). The material to be quarried is volcanic scoria. There is no evidence of waste rock, clay seams, or faults on the exposed 10m face of the area that has been extracted within Lot 1. (Please refer to Douglas Partners Geotechnical Report, Sections 2 and 4 and extract from Mount Shadwell Scoria Quarry Mortlake Cultural Heritage Management Plan. Mt Shadwell Scoria Quarry Geology report). All of the extracted scoria will be processed and stockpiled on the quarry floor for sale. The intended use of the product is for general road and farm track base.

**Available Resource and Estimated Quarry Life.**

Recoverable scoria is estimated at 2,861,497m<sup>3</sup>. Quarry life is expected to be 50+- years. This estimation is based on current expected use. The estimate cannot account for unknowns such as materials required for road recovery after major impacts, e.g. flooding, or future projects, e.g. windfarm infrastructure and etc. (Please refer to Work Plan sheets 9/27 & 25/27 for volumes).

**Top Soil and Overburden Management**

Generally topsoil layers are 0-200mm deep and mixed with overburden, clay and rock. This depth is consistent across the area and has been determined during the field study for the CHMP. Overburden varies from 0 to 1m deep. This knowledge has been provided by the land owner and observed in the face of the extraction in Lot 1 and the test pits dug during the field study for the CHMP. A bulldozer will scrape top soil and overburden off the area to be excavated and stockpiled within the buffers for re-use during rehabilitation of that particular stage. Volumes are calculated by computer software, "Autodesk Civil 3D". Using known site data, (3D surface model, bore logs etc), this system creates a series of small planes on the modelled surface and interpolates the height difference between comparative surfaces at the middle of these plane shapes. It then calculates area x height of each plane, all added to create a solid total volumes".

(Please refer to, Work Plan volume tables, sheets 9/27 & 25/27. Figure 2 Soil Profile page 10, & photo 6, page 9).

**Mobile Plant.**

- As required portable machinery e.g. bulldozer, front end loader and crushing/screening plant will be bought on site to extract, stockpile and crush and load the product into customer trucks.
- Equipment will be refuelled by a service vehicle fitted with a certified fuel tank.
- If required a water truck will be bought on site for dust suppression.

**Infrastructure Plant and Equipment**

- No fixed structures or buildings will be erected on site.
- Power is not provided.
- No fixed plant on site.
- No fuel and lubricants storage on site.
- A designated parking area is provided for staff vehicles, (2-3 places). (Please refer to Work Plan sheet 1/27).

**Method of Extraction and Product Preparation.**

- As required a bulldozer will be bought on site. Scoria will be bladed to the quarry floor and stockpiled for crushing.
- As required a portable crusher will be bought on site to crush scoria to predetermined sizes and stockpile on the quarry floor accordingly.

**Extraction Stages.**

- Initial extraction will be within the old quarry, the western face of Lot 1. Extraction will then progress into Lot 4.
- As each stage in Lot 4 is extracted the area will be rehabilitated.
- When Lot 4 is finalised the eastern face of Lot 1 will be extracted and rehabilitated.  
(Please refer to Work Plans).

**Maximum area open.**

- 2ha.

**Operating Hours**

- Operating hours, Monday to Friday, 7am-6pm, 7am-12 noon on Saturdays. Mount Shadwell Scoria Quarry will be closed on Sundays and public holidays.

**Traffic.**

- It is expected that 6 trucks per day, will be accessing the site.

**Batter profile.**

- Working 1V:2H-1V:3H: Dependant on face height, 1V:3H up to 15m, 1V:3H 15M+
- Rehabilitation batters 1V:3H.
- Some rehabilitated batters will be less steep than 1V:3H to reduce slope angle to mimic the existing slopes of Mount Shadwell as much as is practical.

**Benching.**

- The work face will not be benched.  
(Please refer to Douglas Partners Geotechnical Report 11 November 2021).

**Method of Processing.**

- Scoria will be excavated by bulldozer pushing downslope with rippers and stockpiled on the quarry floor for crushed and screening.
- A portable crusher will be bought on site as required.
- Finished product will be stockpiled on the quarry floor for loading into customer trucks.  
(Please refer to Work Plan sheets, 1/27 & 11/27).

**Blasting.**

- Blasting will not be undertaken.

**Access.**

- The existing access off the Mortlake Ararat Road will be retained.

**Depth on Title.**

- No depth limit on title.

**Quarry Depth.**

- Working depths to the quarry floor varies from 0-6m, Stage 1 Lot 4, to 24.98m at the deepest point of Stage 3 in Lot 4.  
(Please refer to Work Plan for details of depth variations).

**Erosion/Sedimentation.**

- The extraction area is lower than the surrounding ground levels preventing water runoff onto the adjoining farming land.
- Apart from a small section of Blind Creek, approximately 1.5-2km west of the work site, there are no waterways or wetlands within 2km of the work site.  
(Please refer to Receptor Plan Page 10).
- No waterways/catchments or drains will receive sediment laden discharge water from the quarry.
- All surface water will be contained within the work site.  
(Please refer to Work Plans, Sheets 3/27 & 12/27).
- Sediment ponds will be dug in each stage as extractions progress. These ponds are designed to contain runoff from a 1:10 year flood event.  
(Please refer to Work Plan, sheets 1/27 & 11/27).
- A 1m high berm will be constructed on the upslope faces of each stage to prevent storm water from flowing into the work site.

(Please refer to Work Plan sheets 10/27 & 26/27 and Risk Management Plans No's 7, 11 & 12).

**Water.**

- It is not proposed to wash scoria on site.
- If water is required for dust suppression it will be sourced from the sediment pond.
- The SRW registered bore will not be used for this purpose.
- Ground water will not be intercepted. Average separation of quarry floor depth and groundwater table is 58-60m.  
(Please refer indicative water table depth shown on Work Plan cross section sheets and Mt Shadwell Quarry Geotechnical Inspection Report, Section 5, No 5.).

**Housekeeping/Waste.**

- Staff day waste only will be produced. No industrial waste will be produced.
- A sealed rubbish container will be kept on site and emptied into a licensed facility as required.
- A portable toilet will be provided by service contractors.
- No fuels or lubricants will be stored on site.
- Equipment will be refuelled by a service vehicle fitted with a certified fuel tank.
- A fuel spills kit will be kept on site.

**Vermin and Noxious Weeds.**

- There is no evidence of vermin, e.g. rabbit warrens and/or weed invasion on the property.
- The site is cultivated annually for crop or pasture production preventing colonisation by pests.
- The quarry area is intensively cultivated farm land.
- There are no suitable habitats for vermin to occupy.
- Equipment for use in the quarry prior to entering the site will be pre cleaned to remove any weed seed.  
(Please refer to WA1478 Pest Management Plan and to Risk Treatment Plans No's 9, 13 & 14).

**Heritage.**

- The site is located within an area of declared Aboriginal Heritage Sensitivity, (Volcanic cones of Western Victoria). A Cultural Heritage Management Plan, (CHMP) has been completed.  
(Please refer to attached Aboriginal area of cultural sensitivity plan. Page 7).
- Eastern Maar Aboriginal Corporation, (EMAC) assessed and endorsed this CHMP in 2021.  
(Please refer to Mount Shadwell Scoria Quarry Mortlake CHMP No. 17781, 7 December 21 and RMP No. 2).
- A designated Aboriginal cultural site is located within the south east corner of Lot 4. This site will be buffered out of the extraction area.  
(Please refer to WA1478 CEP Figure 2, and Work Plan).
- There are no other known heritage values within or nearby to the worksite.

**Environment.**

- Lots 1, 2, & 4 are devoid of native vegetation. All have been extensively grazed and cropped for many years. (Please refer to attached photos of Lots1, & 4, pages 8 & 9).
- DELWP advised that the existing quarry face in Lot 1 may contain nesting sites for avian species. This face will be extracted in accord with DELWP recommendations.
- DELWP advised that Southern Bent-wing Bats, (SBWB) may frequent a rocky outcrop on Mount Shadwell approximately 100m south of Lot 4. This site was investigated by a DELWP officer, no evidence of suitable SBWB habitats were found.  
(Please refer to Risk Management Plan No. 2, Figure 2 and DELWP report, 4<sup>th</sup> May 2021 ref. SP474756).



- DELWP advised that there may be SBWB habitats within the quarry area, (i.e. lava tubes, caves or rocky outcrops). There is no evidence of these features within Lots 1, 2, & 4. These areas have all been extensively cultivated for many years, any suitable habitats have been destroyed by farming activities. A walk over inspection determined there are no suitable habitat for SBWB's as described by DELWP. (Please refer to site photos, pages 8 & 9).
- The tree plantation proposed for the north face of Lot 4 will use endemic species as prescribed by DELWP.

### **Rehabilitation.**

The proposed use of the work site following extraction is that the area is returned to agricultural productivity that is consistent with the current use. Sediment ponds will be filled in. Stockpiled topsoil and overburden will be respread over each stage as it is exhausted. The stage will then be resown to pasture/crop. Note that the average depth of topsoil is 0-200mm and overburden 0-1m. Topsoil and overburden is naturally generally mixed across the area with no definitive separation, (please refer to site photos, pages, 6, 7, 8 & 9 and diagram 1, page 9). Agriculturally it is generally accepted that this natural mixture of volcanic soils is some of the most productive land within Victoria. (Volcanic soil is highly fertile with Olsen phosphorus levels at 40ppm and Potassium levels of 300ppm). Following rehabilitation, monitoring will be undertaken for a minimum of 3 months to ensure successful germination of pasture grasses or crop. If required weed and pest animal control measures will be undertaken by the owner. This is the normal annual cropping/pasture rotation undertaken by the owner.

(Please refer to Rehabilitation Plan and Noxious Weeds and Pest Animal Control Plan).

### **Aboriginal Heritage.**

As the quarry is located within an area of declared Aboriginal Sensitivity, to minimise the possible random distribution of heritage, stockpiles will be located within the buffer adjacent to the site to be excavated, that is Stages 1 & 2 of Lot 1 and Stages 1, 2, 7 & 8 within Lot 4. Buffers to be utilised for this purpose are a part of the working farm and are annually ploughed and sown to crop or pasture. As previously stated there is no native flora and fauna that will be impacted by this activity.

(Please refer to Mount Shadwell Scoria Quarry Mortlake Cultural Heritage Management Plan).

### **Topsoil and Overburden Stockpiles.**

Topsoil depth averages 0-200mm, estimated at 62,987m<sup>3</sup>. Overburden depth is variable, 0-1m depending on the underlying scoria, estimated at 314,937m<sup>3</sup>.

(Please refer to, Site photo. Test pit pages 10. Figure 2. Soil profile page 10. Work Plans. sheets 9/27 & 25/27).

### **Amenity.**

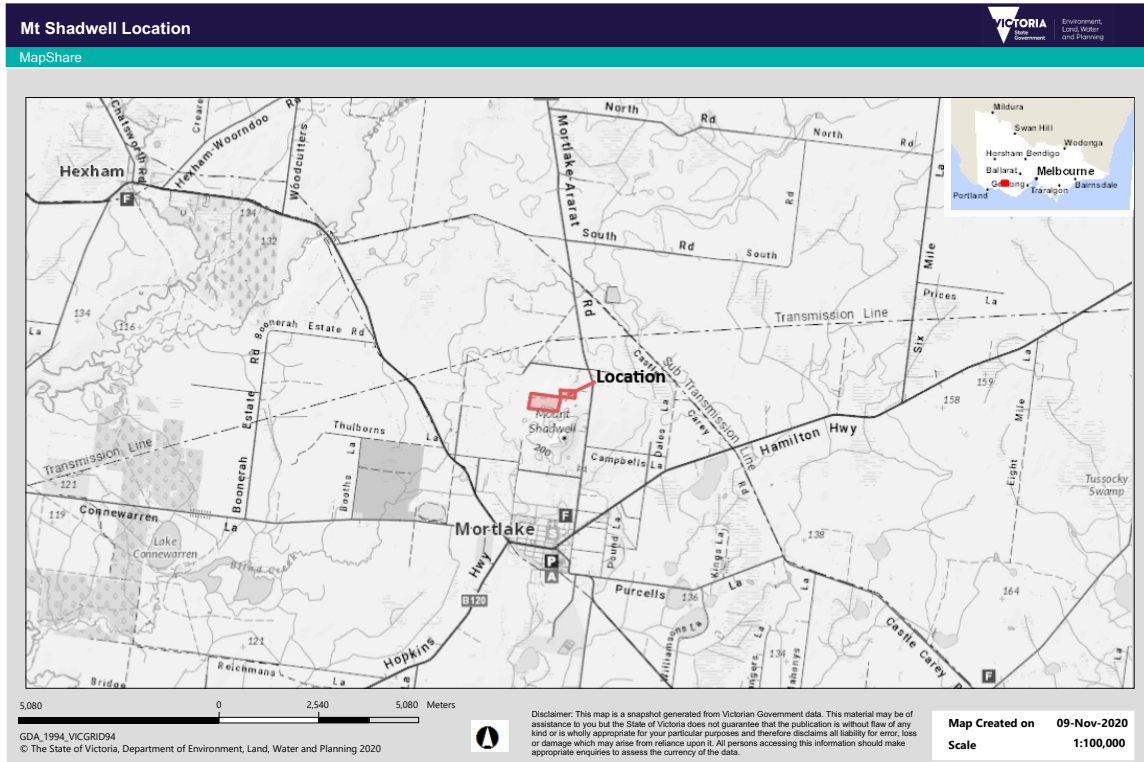
The existing quarry is screened from view to commuters travelling on the Mortlake-Terang Road. Lot 4 is partially visible to south bound commuters. In accord with DELWP and MSC directions, an indigenous tree plantation will be established on the northern face of Lot 4 to screen this area from view.

### **Receptors within 2km.**

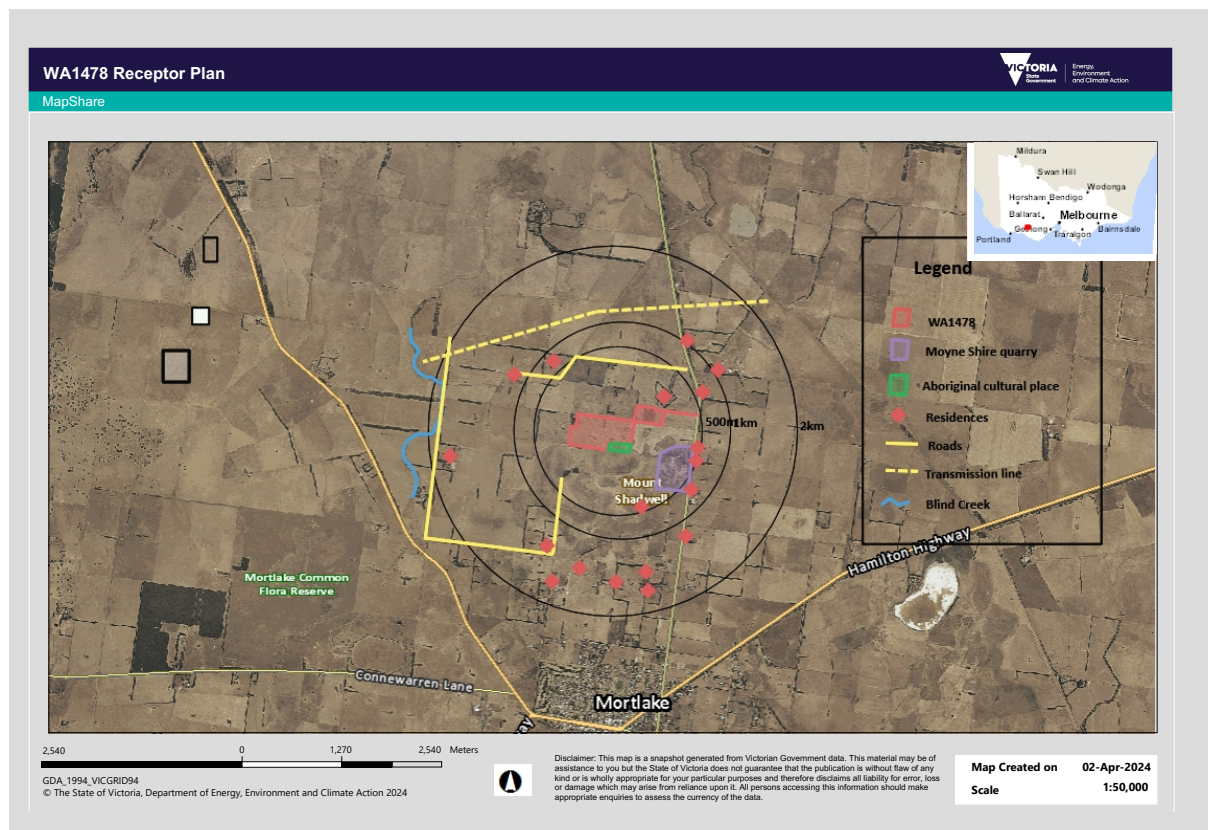
(Please refer to Receptor Plan. Page 6).

- There are 18 residence within a 2km. radius. Lots 1 & 2 are screened by natural rises from the residences within 1km to east. Lot 4 is visible to the two residences 700m, 1km to the northwest. The eight residences within 1-2km of the quarry site are located on the southern and western slopes of Mount Shadwell on the outskirts of Mortlake. The bulk of Mount Shadwell obscures views of the quarry site from these residences.
- There are no wetlands, public land or reserves within 2km.
- A small section of Blind Creek is approximately 1.5-2km west of Lot 4.
- Moyne Shire Council operates a scoria quarry approximately 500m southeast of WA1478.
- A declared Aboriginal Cultural Area, Mount Shadwell Stony Rises is located in the south east corner of Lot 4. This site is buffered out of the quarry.

- All of the proposed quarry area lies within an area of Declared Aboriginal Heritage Sensitivity. (Please refer to Aboriginal Heritage Sensitivity area plan, page 11).
- Mortlake Ararat Road is approximately 500m east of the quarry.
- A major east west transmission line is approximately 1.1 km north of the site,
- A north south power line is located within the Mortlake-Ararat Road reserve.



Plan 1. Mount Shadwell Quarry location



Plan 2. Mount Shadwell Quarry Receptor Plan



Plan3. WA1478 Aboriginal Area of Cultural Heritage Sensitivity

<b>Mineral Resources (Sustainable Development) Act 1990</b>	
Tenement Number:	WA1478
Plan Number:	PLN001732
Work Plan Statutorily Endorsed	
Signed:	
Delegate of the Department Head	
Date:	01/05/2024





Mount Shadwell Scoria Quarry Site photos.



Photo1. Lot 1. Old quarry face. View south to Mt Shadwell.



Photo 2. Lot 4. East side view south. Note cleared agricultural land.





Photo 3. Lot 4. View west. Note land surface following harvesting of crop.



Photo 4. Lot 4. View southwest. Ploughed surface showing mixture of top soil and overburden.





Photo 5. Lot 1 Old quarry face profile.



Photo 6. Test Pit during CHMP field work. Note soil profile.

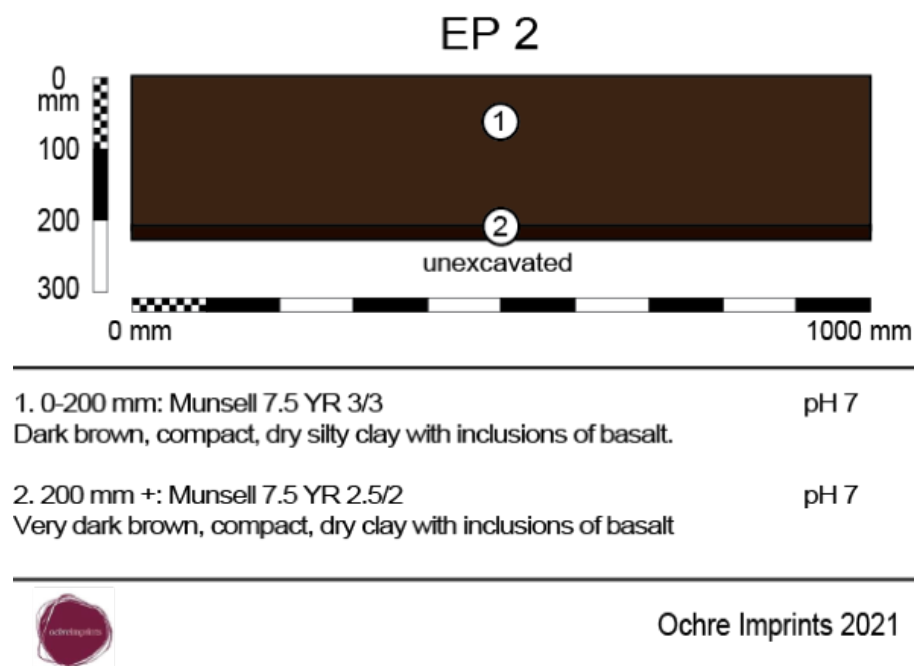
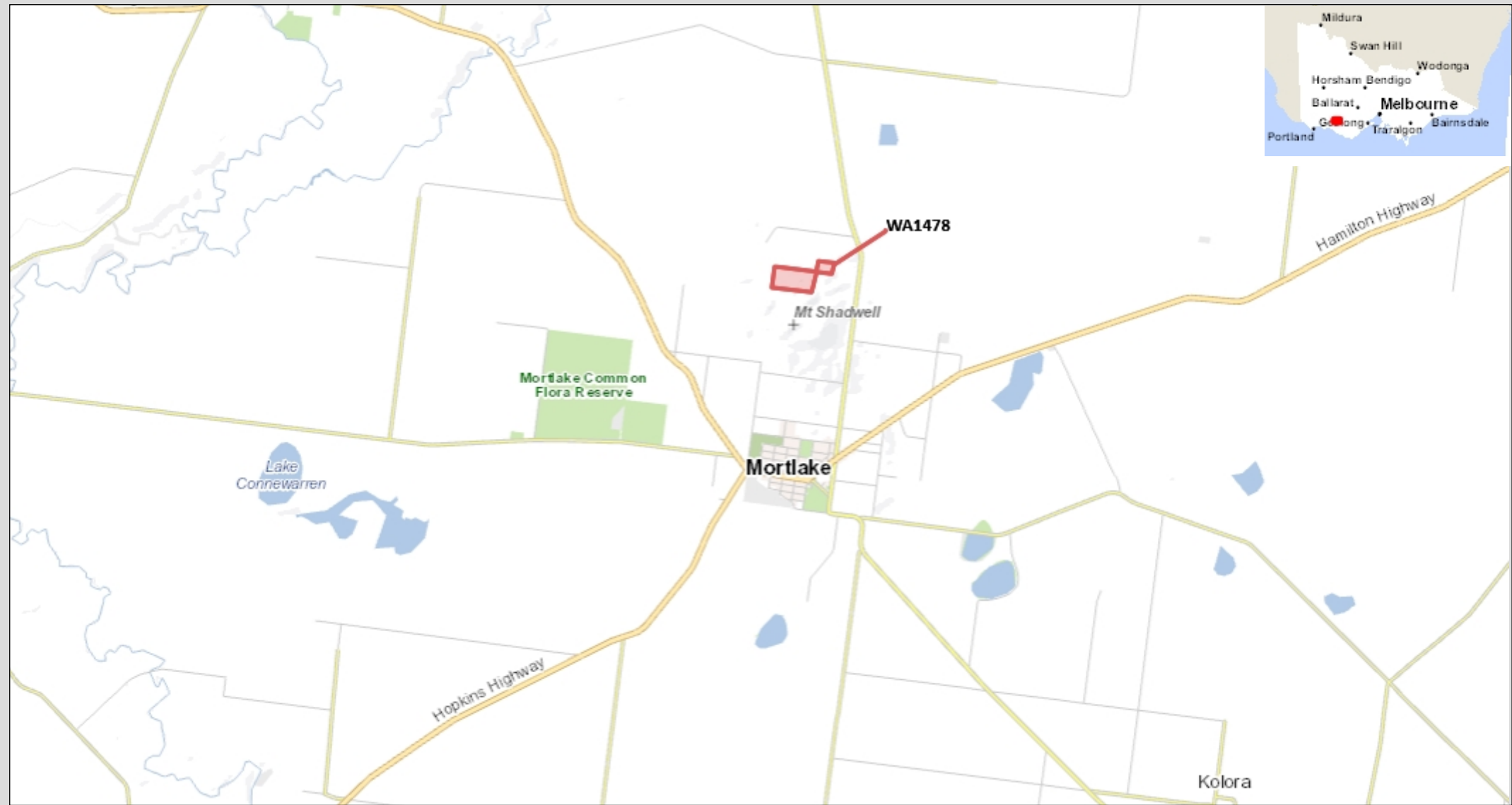


Figure 2. Soil Profile, Lot 4





Disclaimer: This map is a snapshot generated from Victorian Government data. This material may be of assistance to you but the State of Victoria does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.





508 0 254 508 Meters

GDA\_1994\_VICGRID94  
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Disclaimer: This map is a snapshot generated from Victorian Government data. This material may be of assistance to you but the State of Victoria does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

Map Created on 02-Apr-2024  
Scale 1:10,000

Legend

- ☒ Property Proposed
- ☐ Property
- ☒ Parcel Proposed
- ☐ Parcel





1,270 0 635 1,270 Meters

GDA\_1994\_VICGRID94  
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Disclaimer: This map is a snapshot generated from Victorian Government data. This material may be of assistance to you but the State of Victoria does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

Map Created on 31-May-2023

Scale 1:25,000

Legend

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- ☐ Property
- ☒ Parcel Proposed
- ☐ Parcel



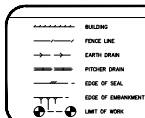
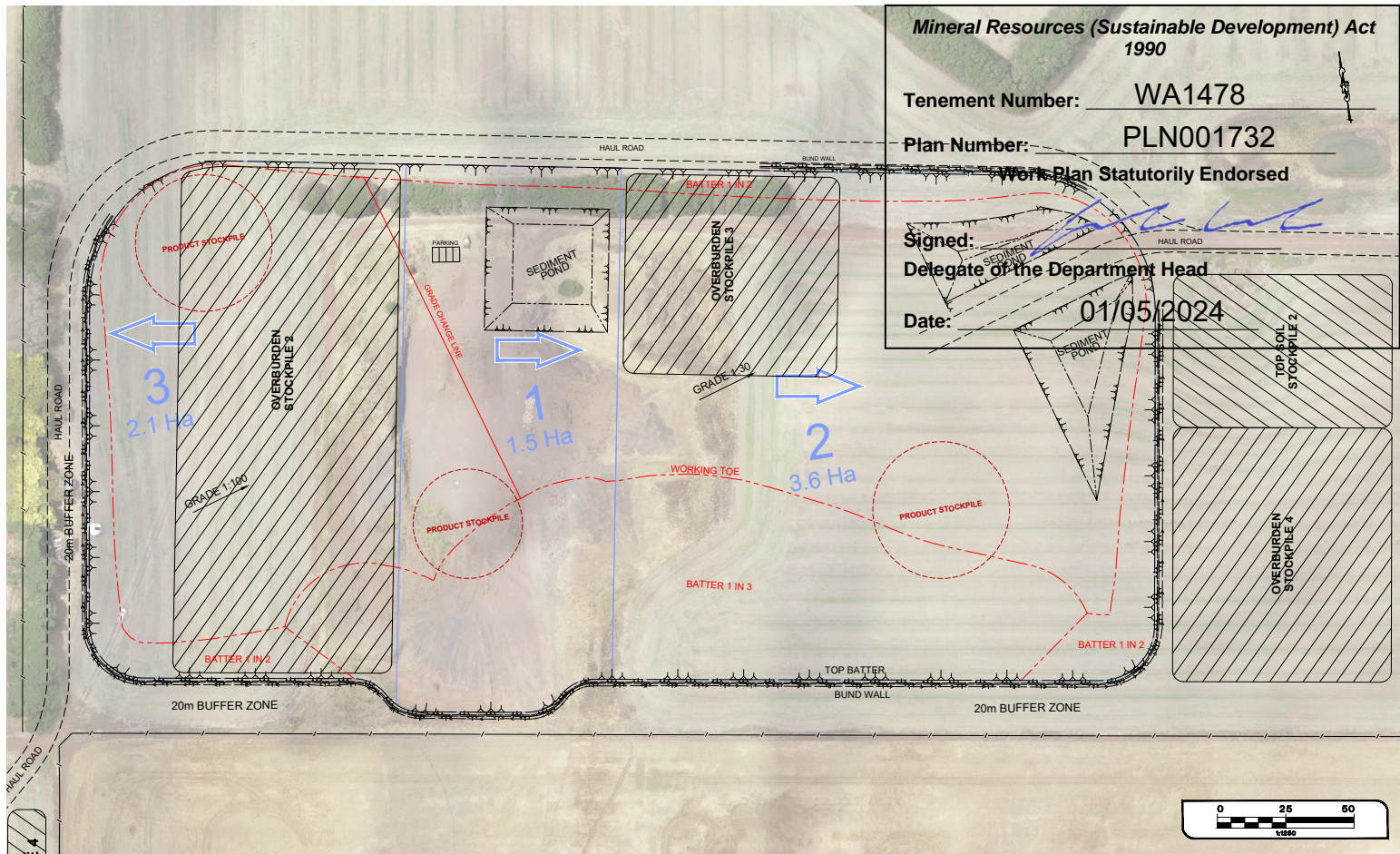
Tenement Number: WA1478

Plan Number: PLN001732

Work Plan Statutorily Endorsed

Signed:   
Delegate of the Department Head

Date: 01/05/2024



- LEGEND**
- TITLE PEG
  - ↑ PERMANENT SURVEY MARK
  - △ SURVEY STATION
  - SQUARE POST
  - BONE HOLE
  - TREE STUMP
  - SWIRL
  - TREES
  - × TREE CANOPY RADII

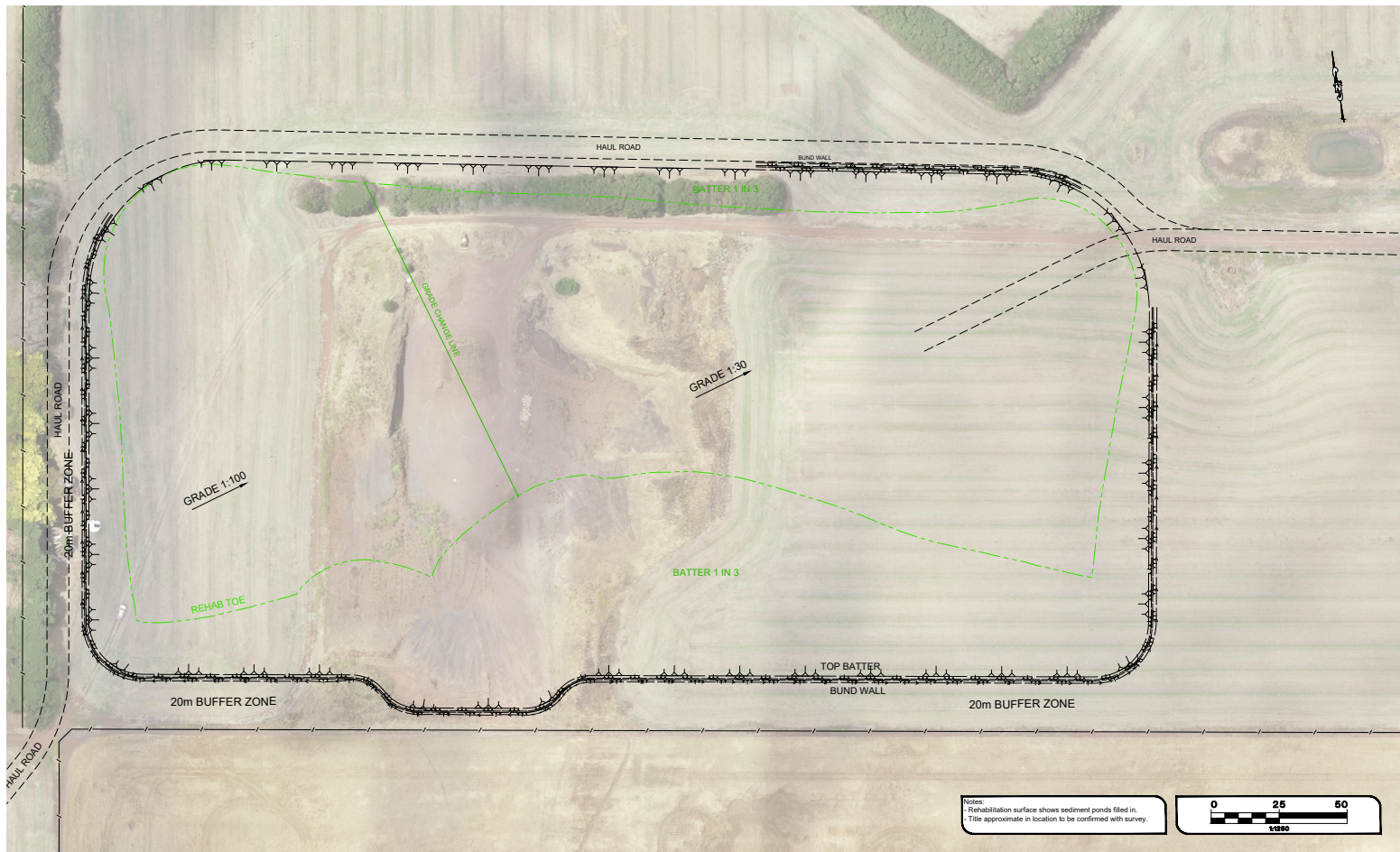


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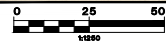
- All dimensions are in metres unless stated otherwise.
- Contours are shown at NA height intervals.
- Levels and Coordinates are to AHD, GDA94/MGA54 unless stated otherwise.
- Size of Symbols shown on plan do not relate to the actual size of objects on the ground.

Project:	WA1478 Mt SHADWELL SCORIA QUARRY WORKING SURFACE MODEL MORTLAKE VICTORIA	Survey: C.T.	29/12/2020
Design:			June 2023
File No.:	Mt Shadwell Quarry 20-12-29 Working J.dwg		
Scale:	1:1250 (A3)		
Sheet:	1/27	PLAN NO.	215072





Notes:  
 1. Rehabilitation surface shows sediment ponds filled in.  
 2. Title approximate in location to be confirmed with survey.



#### LEGEND

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#### Notes:

1. All dimensions are in metres unless stated otherwise.
2. Contours are shown at NA height intervals.
3. Levels and Coordinates are to AHD, GDA94/MGA84 unless stated otherwise.
4. Size of Symbols shown on plan do not relate to the actual size of objects on the ground.

#### Project:

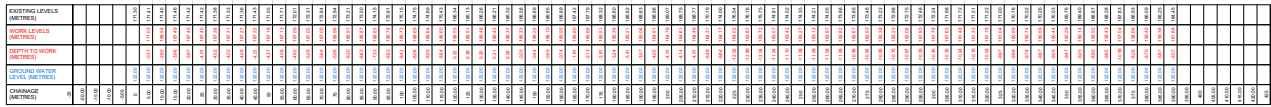
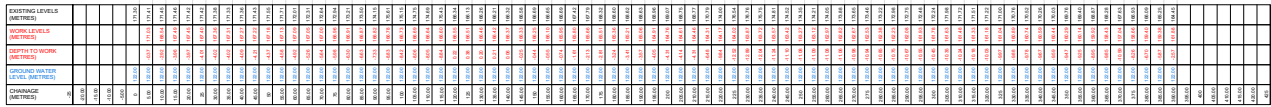
**WA1478 Mt SHADWELL  
 SCORIA QUARRY  
 REHAB SURFACE MODEL  
 MORTLAKE REGION  
 VICTORIA**

#### Survey: C.T.

Design:	June 2023
File No.:	1478 Shadwell Quarry 20-12-23 Working J.dwg
Scale:	1:1250 (A3)
Sheet:	PLAN NO.
<b>2/27</b>	<b>215072</b>





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				<p>Notes:</p> <ol style="list-style-type: none"> <li>All dimensions are in metres unless stated otherwise.</li> <li>Contours are shown at NA height intervals.</li> <li>Levels and Coordinates are to AHD, GDA94/AD64 unless stated otherwise.</li> <li>Size of symbols shown on plan do not relate to the actual size of objects on the ground.</li> </ol>		<p>Project:</p> <p><b>WA1478 Mt SHADWELL SCORIA QUARRY WORK PROFILE</b></p> <p><b>MORTLAKE VICTORIA</b></p>		<p>Survey: G.C.T.</p> <p>Design: June 2023</p> <p>File No: 1M Shadwell Quarry 30-10-29 Working Jday</p> <p>Scale: 1:500 (A2)</p> <p>Sheet: PLAN NO.</p> <p><b>4/27 215072</b></p>	
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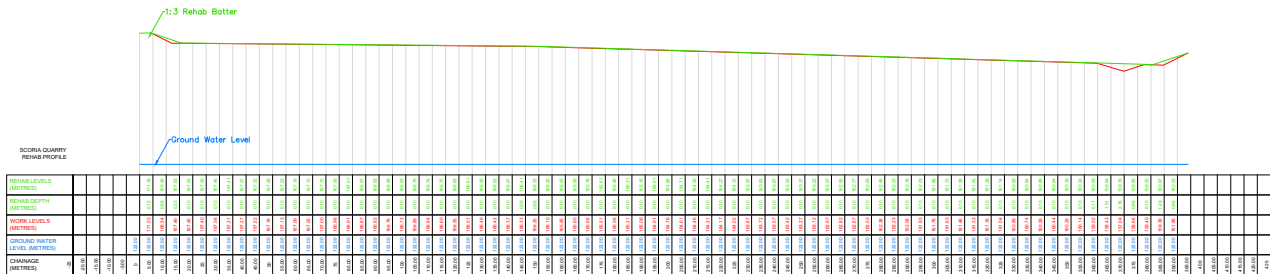
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	PITCHER DRAIN	<input type="checkbox"/>	SQUARE POST
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	TREE STUMP	<input checked="" type="checkbox"/>	TREE CANOPY RADII
	SHRUB	<input type="checkbox"/>	
	TREE	<input type="checkbox"/>	

15 Stringybark Court,  
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Email: landform@landform.net.au

Notes:

- All dimensions are in metres unless stated otherwise.
- Contours are shown at NA height intervals.
- Levels and Coordinates are to AHD, GDA84/GDA94 unless stated otherwise.
- Size of symbols shown on plan do not relate to the actual size of objects on the ground.

Project:		Survey: C.T.	
<b>WA1478 Mt SHADWELL SCORIA QUARRY WORK SECTIONS MORTLAKE VICTORIA</b>		29/12/2020	
		June 2023	
		Design:	
File No. 1M Shadwell Quarry 20-12-20 Working Jdw		Scale: 1:500 (A0)	
Sheet	PLAN NO.	5/27	215072

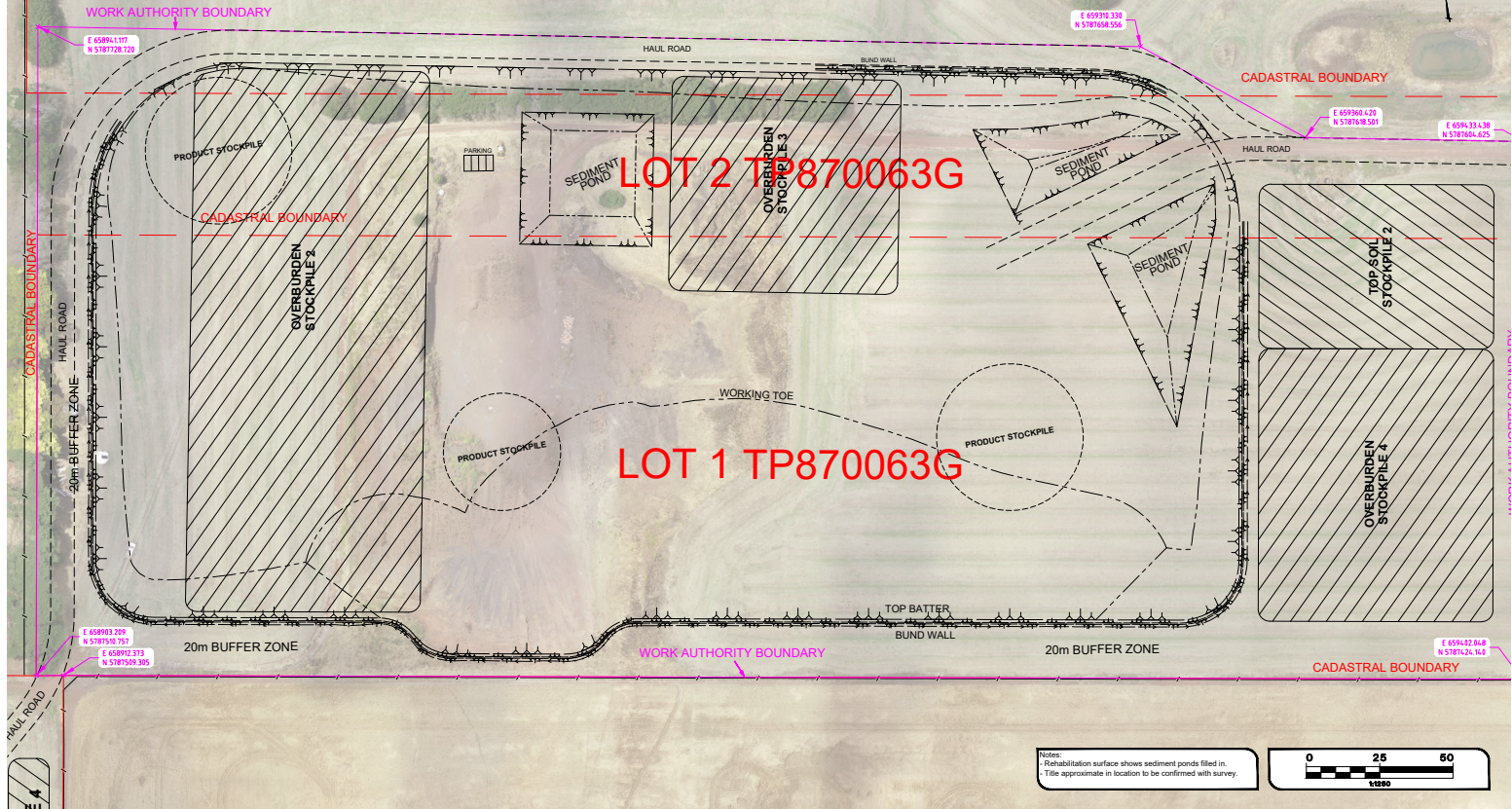
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<p><b>LEGEND</b></p> <p>  BUILDING   FENCE LINE   EARTH DRAIN   FURROW DRAIN   EDGE OF SEAL   EDGE OF PAVEMENT   LIMIT OF WORK </p>		<p> <input type="checkbox"/> TREE PILE  <input type="checkbox"/> PERMANENT SURVEY MARK  <input type="checkbox"/> SURVEY STATION  <input type="checkbox"/> SQUARE POST  <input type="checkbox"/> BONE HOLE </p>	<p>  TREE STUMP   SHRUB   TREE   TREE CANOPY RADIUS </p>	<p> <b>Landform</b>          SURVEYING </p> <p>         15 Stringybark Court,          Bendigo, VIC 3550          Ph: (03) 54413634          Fax: (03) 54453674          Mobile: (0427) 940616          Email: landform@landform.vic.au </p>	<p>Notes:</p> <p>         All dimensions are in metres unless otherwise stated.          Contours are shown at NA height intervals.          Levels and Coordinates are to AHD, GDA94/AGDA unless stated otherwise.          Size of symbols shown on plan do not relate to the actual size of objects on the ground. </p>	<p>Project:</p> <p> <b>WA1478 M SHADWELL          SCORIA QUARRY          REHAB PROFILE          MORTLAKE          VICTORIA</b> </p>	<p>Survey: C.T.</p> <p>         29/12/2020          June 2023 </p> <p>         Design:          File No.: M Shadwell Quarry 2012-19 Working Ldg          Scale: 1:500 (A0)          Sheet          PLAN NO. </p> <p>         6/27          215072 </p>
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<b>WA1478 Mt SHADWELL SCORIA QUARRY REHAB SECTIONS MORTLAKE VICTORIA</b>	Project :	Survey : C.T.	29/12/2020
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		Sheet	PLAN NO.
		<b>7/27</b>	<b>215072</b>

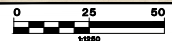


LOT 1 TP870063G



Notes:

- Rehabilitation surface shows sediment ponds filled in.
- Title approximate in location to be confirmed with survey.



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	EARTH DRAIN	<input type="checkbox"/> SURVEY STATION	
	PITCHER DRAIN	<input type="checkbox"/> SQUARE PEG	
	EDGE OF SEAL	<input type="checkbox"/> BONE POST	
	EDGE OF EMBANKMENT		
	LIMIT OF WORK		

15 Springbank Court  
Bendigo, VIC 3550  
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Fax: (03) 5441 9174  
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Email: [landform@landform.net.au](mailto:landform@landform.net.au)

**Notes :**

- All dimensions are in metres unless stated otherwise.
- Contours are shown at NA height intervals.
- Levels and Coordinates are to AHD, GD94/MGA54 unless stated otherwise.
- Size of Symbols shown on plot do not relate to the actual size of objects on the ground.
- The approximate location, to be confirmed with survey.

**Project :**

WA1478 Mt SHADWELL  
SCORIA QUARRY  
WORK AUTHORITY BOUNDARY  
MORTLAKE  
VICTORIA

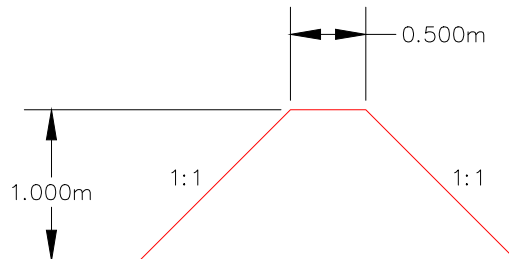
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**Design :** June 2023  
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**Scale :** 1:1250 (A3)  
**Sheet :** 8/27  
**PLAN NO.:** 215072

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**Landform**  
SURVEYS

15 Stringybark Court,  
Bendigo, VIC., 3550  
Ph.: (03) 54413634  
Fax: (03) 54413674  
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Project :  <b>WA1478 Mt SHADWELL SCORIA QUARRY VOLUMES TABLE MORTLAKE VICTORIA</b>	Survey : C.T.	29/12/2020
	Design : _____	June 2023
	File No. : W8 Shadwell Quarry 20-12-29 Working J.dwg	
	Scale : _____	N/A (A3)
Sheet _____	PLAN NO.	
	<b>9/27</b>	<b>215072</b>



Typical Bund Wall Cross-Section

LEGEND				 <p>15 Stringybark Court, Bendigo, VIC. 3550 Ph: (03) 54413634 Fax: (03) 54413672 Mobile: 04272 806816 Email: i.landform@optusnet.au</p>	<b>Notes :</b> 1. All dimensions are in metres unless stated otherwise. 2. Contours are shown at NA height intervals. 3. Levels and Coordinates are to AHD, GDA94/MGA54 unless stated otherwise. 4. Size of Symbols shown on plan do not relate to the actual size of objects on the ground.	<b>Project :</b> <b>WA1478 Mt SHADWELL</b> <b>SCORIA QUARRY</b> <b>TYPICAL SECTIONS</b> <b>MORTLAKE</b> <b>VICTORIA</b>	<b>Survey : C.T.</b>	
BUILDING FENCE LINE EARTH DRAIN PITCHER DRAIN EDGE OF SEAL EDGE OF DRAINAGE LIMIT OF WORK	TITLE PEG PERMANENT SURVEY MARK SURVEY STATION SQUARE POST BONE HOLE	TREE STUMP SHRUB TREES TREE CANOPY RADIUS	29/12/2020 Design : File No. : Mt Shadwell Quarry 20-12-29 Working J.dwg Scale : 1:25 (A3) Sheet <b>10/27</b>				29/12/2020 Design : File No. : Mt Shadwell Quarry 20-12-29 Working J.dwg Scale : 1:25 (A3) Sheet <b>215072</b>	





LEGEND			
	<input type="checkbox"/> TITLE POST		1. All dimensions are in metres unless stated otherwise.
			2. Contours are shown at NA height intervals
			3. Levels and Coordinates are to AHD, CGDA4/UGA4 unless stated otherwise
			4. Size of symbols shown on plan do not relate to the actual size of objects on the ground

15 Stringybark Court,  
Bendigo, Vic 3550  
Ph: (03) 54433034  
Fax: (03) 54433076  
Mobile: (0427) 950616  
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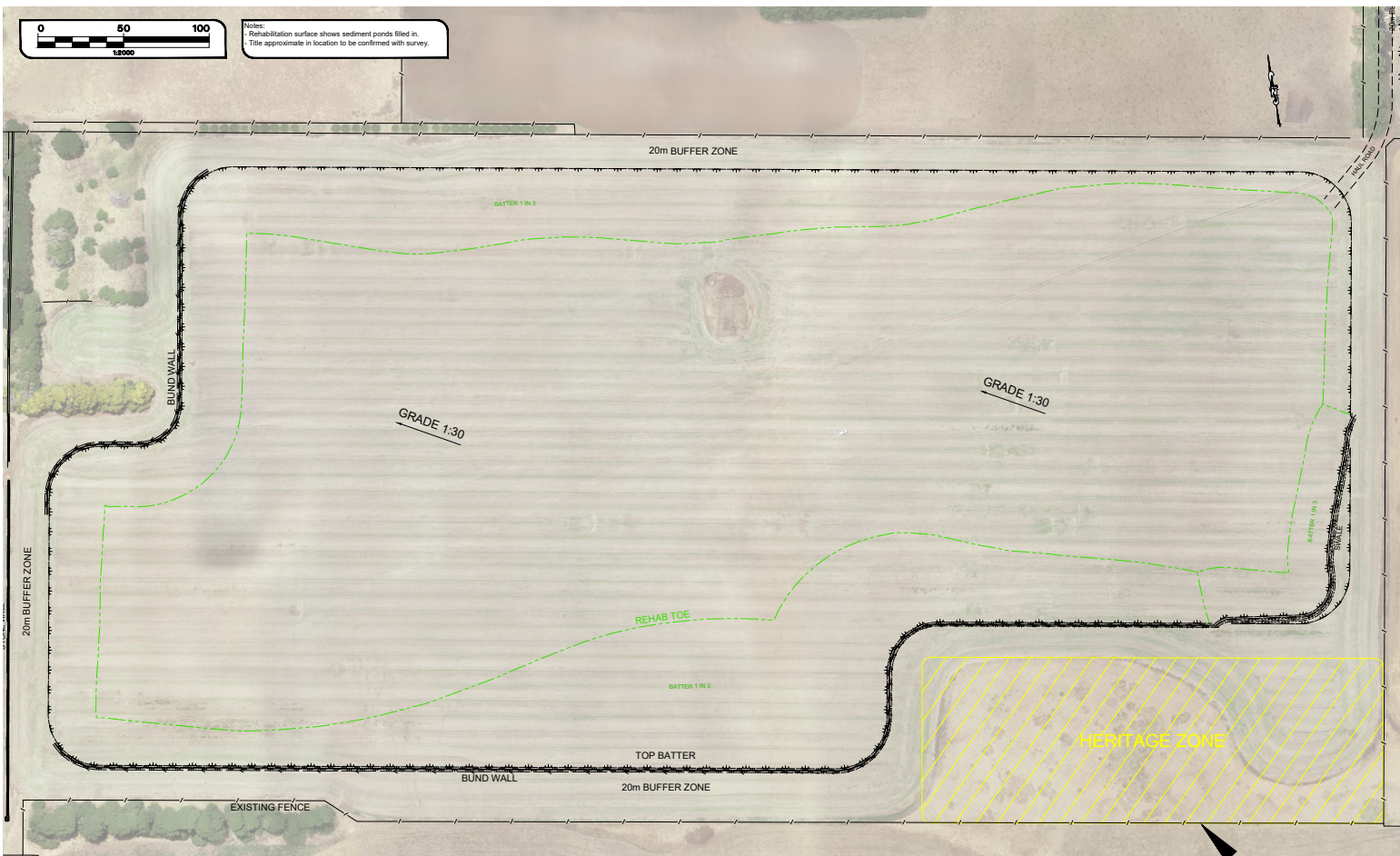
Notes :

- All dimensions are in metres unless stated otherwise.
- Contours are shown at NA height intervals
- Levels and Coordinates are to AHD, CGDA4/UGA4 unless stated otherwise
- Size of symbols shown on plan do not relate to the actual size of objects on the ground

Project :

**WA1478 Mt SHADWELL  
SCORIA QUARRY  
WORKING SURFACE MODEL  
MORTLAKE  
VICTORIA**

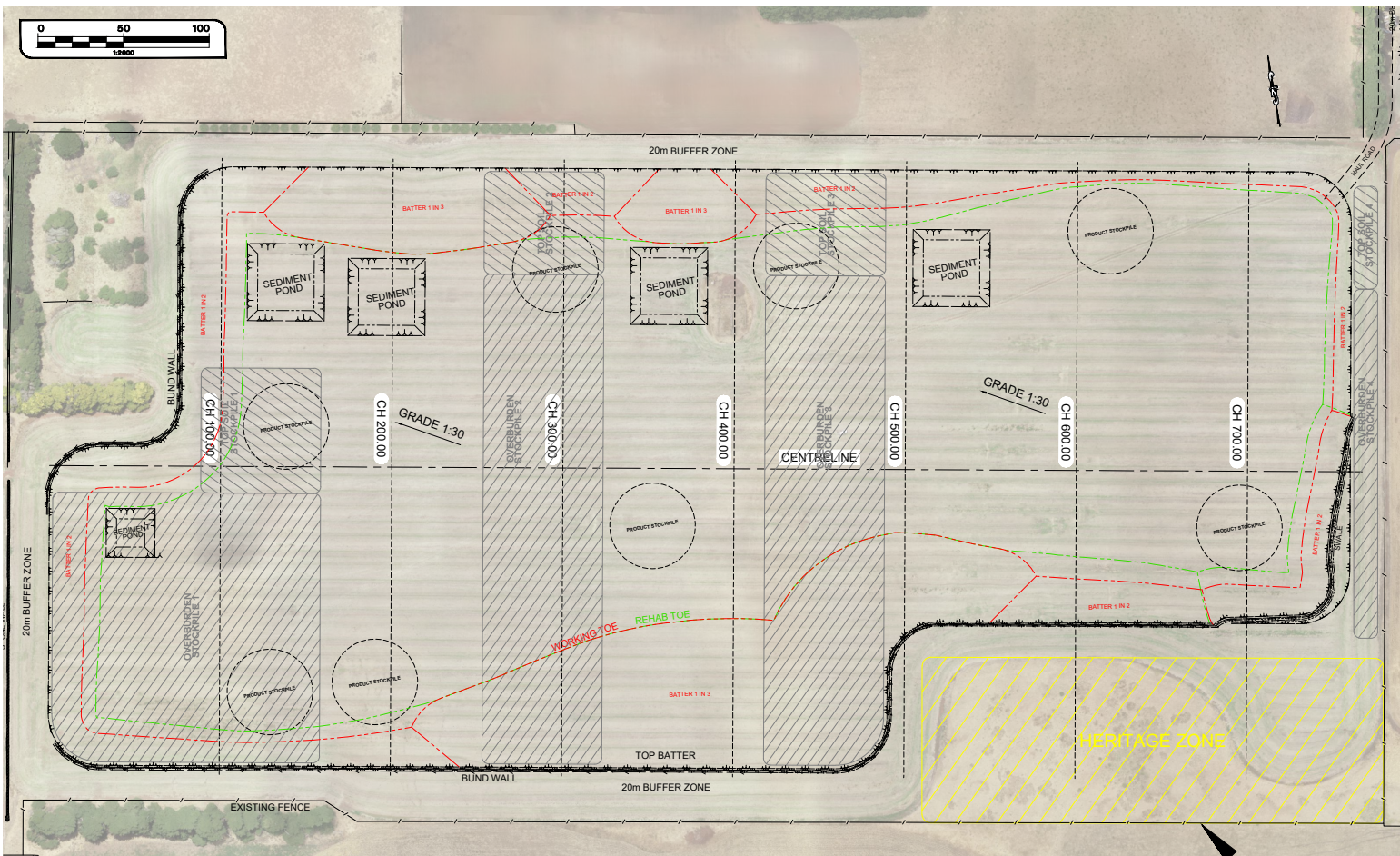
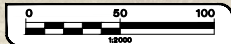
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Design :		June 2023
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Scale :		1:2000 (A3)
Sheet	PLAN NO.	
<b>11/27</b>	<b>215072</b>	



Notes:  
 - Rehabilitation surface shows sediment ponds filled in.  
 - Title approximate in location to be confirmed with survey.

LEGEND				 <p>15 Stringybark Court,          Bendigo, VIC. 3550          Ph: (03) 54413634          Fax: (03) 54413674          Mobile: (0427) 806016          Email: info@landform.net.au</p>	<p>Notes:</p> <ol style="list-style-type: none"> <li>All dimensions are in metres unless stated otherwise.</li> <li>Contours are shown at NA height intervals.</li> <li>Levels and Coordinates are to AHD, GDA94/MGA54 unless stated otherwise.</li> <li>Size of Symbols shown on plan do not relate to the actual size of objects on the ground.</li> </ol>	<p>Project:</p> <p><b>WA1478 Mt SHADWELL SCORIA QUARRY REHAB SURFACE MODEL MORTLAKE REGION VICTORIA</b></p>	<p>Survey: C.T. 29/12/2020</p> <p>Design: June 2023</p> <p>File No.: Mt Shadwell Quarry 20-12-29 Working J.dwg</p> <p>Scale: 1:2000 (A3)</p> <p>Sheet: PLAN NO.</p>	
<p>----- BUILDING</p> <p>----- FENCE LINE</p> <p>----- EARTH DRAIN</p> <p>----- PITCHER DRAIN</p> <p>----- SIDE OF DRAIN</p> <p>----- SIDE OF DRAINMENT</p> <p>----- LIMIT OF WORK</p>	<p>○ TITLE PEG</p> <p>↑ PERMANENT SURVEY MARK</p> <p>△ SURVEY STATION</p> <p>□ SQUARE POST</p> <p>● BONE HOLE</p>	<p>● TREE STUMP</p> <p>○ SHUR</p> <p>○ TREES</p> <p>× TREE CANOPY RADIUS</p>						





#### LEGEND


**Landform**  
  
 15 Stringybark Court,  
 Bendigo, VIC. 3550  
 Ph: (03) 54413634  
 Fax: (03) 54413674  
 Mobile: (0427) 506616  
 Email: info@landform.net.au

#### Notes:

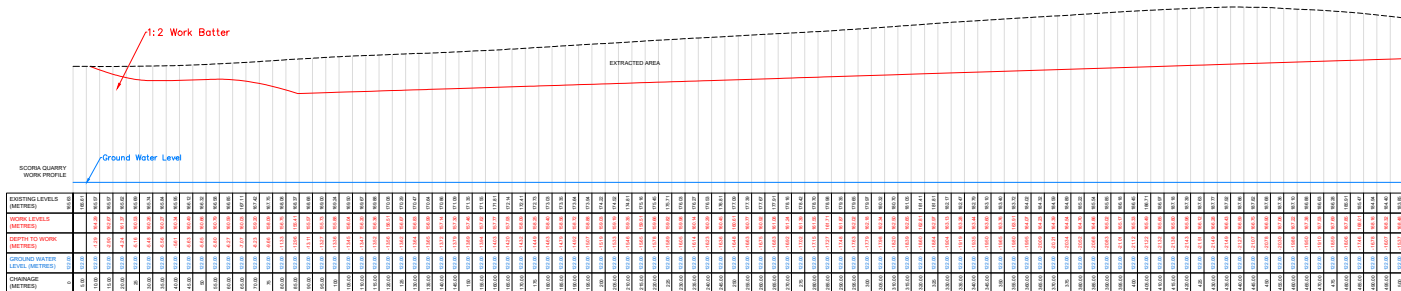
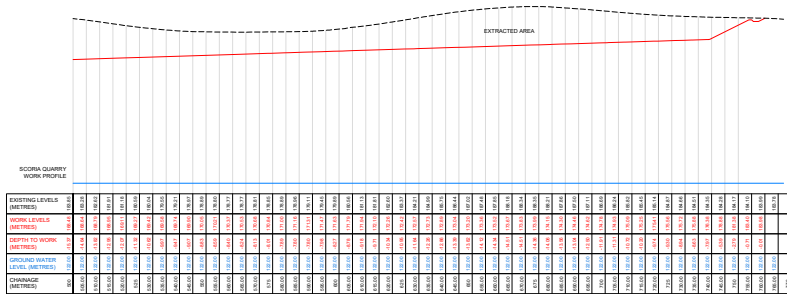
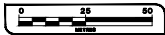
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- Contours are shown at NA height intervals.
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- Size of Symbols shown on plan do not relate to the actual size of objects on the ground.

#### Project:

**WA1478 Mt SHADWELL  
 SCORIA QUARRY  
 SECTIONS LAYOUT  
 MORTLAKE  
 VICTORIA**

#### Survey: C.T.

Design:	June 2023
File No.:	Mt Shadwell Quarry 20-12-29 Working J.dwg
Scale:	1:2000 (A3)
Sheet:	PLAN NO.
<b>13/27</b>	<b>215072</b>



**LEGEND**

BUILDING

FENCE LINE

EARTH DRAIN

POT HOLE

EDGE OF DRAIN

LIMIT OF WORK

TITLE PEG

PERMANENT SURVEY MARK

SURVEY STATION

SQUARE POST

NONE HOLE

TREE STUMP

SHRUB

TREE

TREE CANOPY RADIUS

**Landform**

15 Stringybark Court,  
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**Notes :**

- All dimensions are in metres unless stated otherwise.
- Contours are shown at NA height intervals.
- Levels and Coordinates are to AHD (GDNA/MGA54 unless stated otherwise).
- Size of Symbols shown on plan do not relate to the actual size of objects on the ground.

**Project :**

**WA1478 Mt SHADWELL  
SCORIA QUARRY  
WORK PROFILES  
MORTLAKE  
VICTORIA**

**Survey : C.T.**

**Design :**

**File No. : Mt Shadwell Quarry 20-12-29 Working L&G**

**Scale :** 1:500 (A0)

**Sheet**

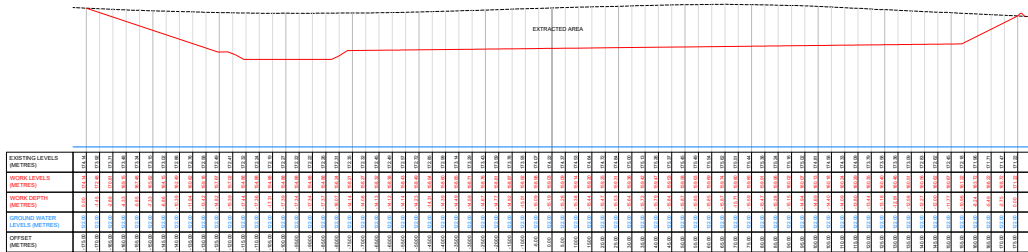
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**28/12/2020**

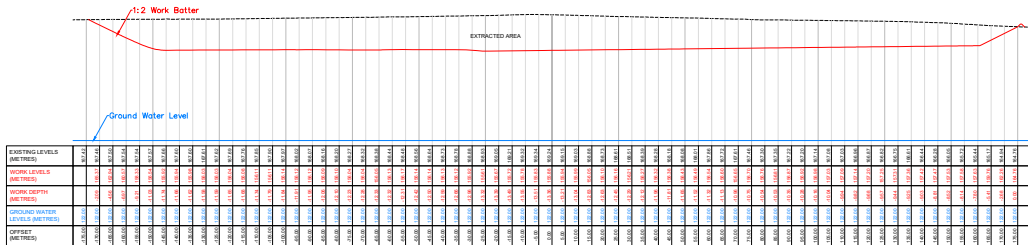
**June 2023**

**14/27**

**215072**



CH 200.0



CH 100.0

LEGEND

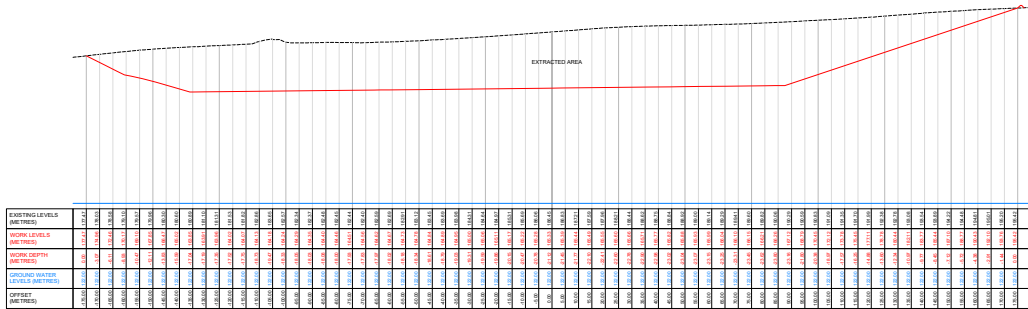
- ~~~~~ BUILDING  
--- FENCE LINE  
--- EARTH DRAIN  
--- PITCHER DRAIN  
--- EASE OF WAY  
--- EASE OF DRAINAGE  
--- LIMIT OF WORK
- TITLE PEG  
+ PERMANENT SURVEY MARK  
△ SURVEY STATION  
□ SQUARE POST  
+ BONE HOLE
- TREE STUMP  
○ SHRUB  
○ TREES  
X TREE CANOPY RADII



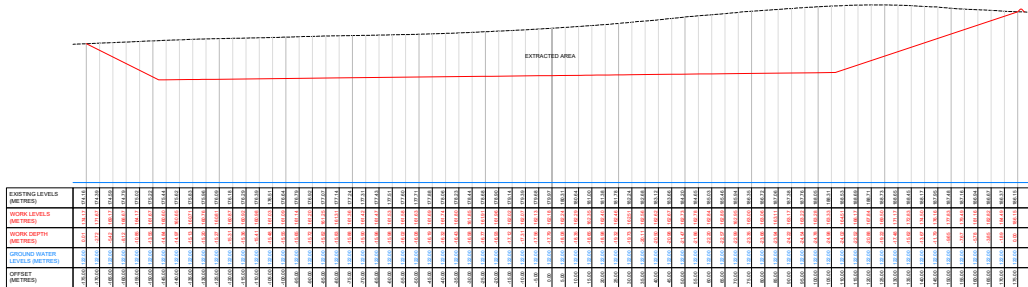
- Notes :
- All dimensions are in metres unless stated otherwise.
  - Contours are shown at NA height intervals.
  - Levels and Coordinates are to AHD (QAM/MGA54 unless stated otherwise).
  - Size of Symbols shown on plan do not relate to the actual size of objects on the ground

Project : **WA1478 Mt SHADWELL SCORIA QUARRY WORK SECTIONS MORTLAKE VICTORIA**

Survey : C.I. 29/12/2020  
Design : June 2023  
File No. : Mt Shadwell Quarry 20-12-29 Working L&S  
Scale : 1:500 (A0)  
Sheet : PLAN NO.  
**15/27 215072**



CH 400.0



CH 500.0

#### LEGEND

	BUILDING		TITLE PEG		TREE STUMP
	FENCE LINE		PERMANENT SURVEY MARK		DRAIN
	EARTH DRAIN		SURVEY STATION		TREE
	PAVED DRAIN		SQUARE POST		TREE CANOPY RADIUS
	EDGE OF BANK		BORE HOLE		
	EDGE OF EMBANKMENT				
	LIMIT OF WORK				



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3. Levels and Coordinates are to IGLD 100M/MGA54 unless stated otherwise.
4. Size of Symbols shown on plan do not relate to the actual size of objects on the ground

#### Project :

**WA1478 Mt SHADWELL  
SCORIA QUARRY  
WORK SECTIONS  
MORTLAKE  
VICTORIA**

#### Survey : C.T.

28/12/2020

#### Design :

June 2003

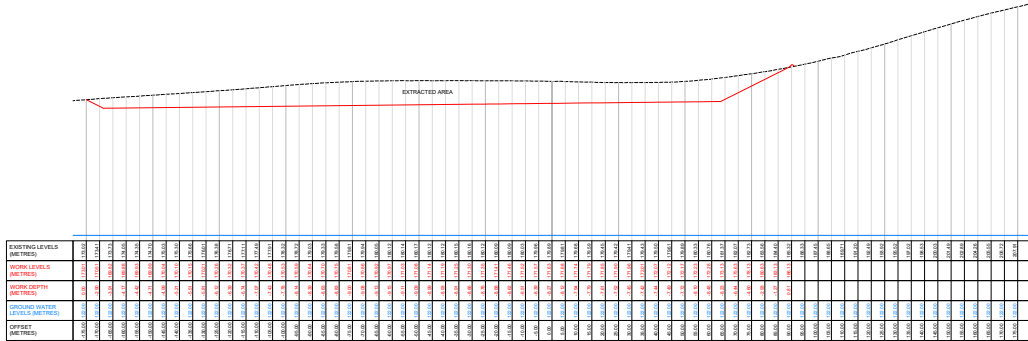
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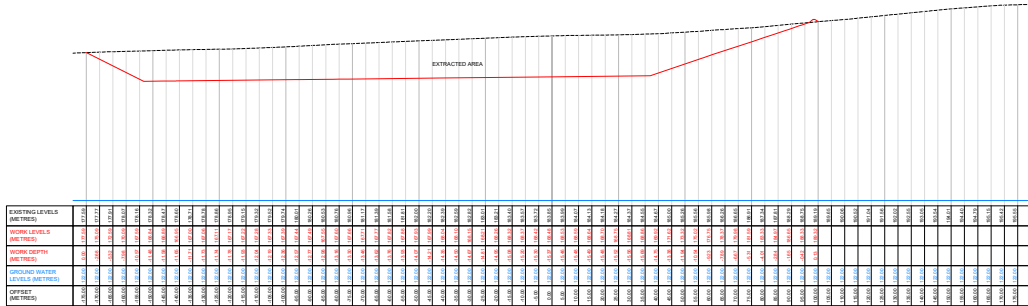
Sheet PLAN NO.

16/27

215072



CH 500.0



CH 500.0

#### LEGEND

- BUILDING
- FENCE LINE
- EARTH DRAIN
- PARTIAL DRAIN
- EDGE OF SOIL
- EDGE OF DRAINAGE
- UNIT OF WORK
- TITLE PEG
- PERMANENT SURVEY MARK
- SURVEY STATION
- SQUARE POST
- BONE HOLE
- TREE STUMP
- SHRUB
- TREES
- TREE CANOPY RADIUS



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Email: info@landform.net.au

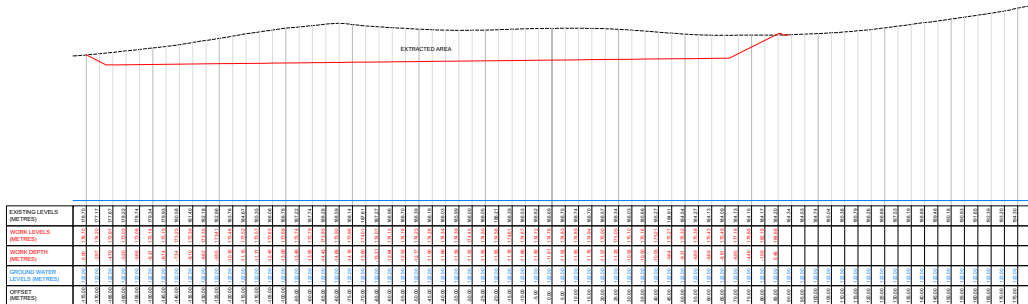
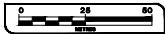
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#### Project :

**WA1478 Mt SHADWELL  
SCORIA QUARRY  
WORK SECTIONS  
MORTLAKE  
VICTORIA**

Survey : C.T.	28/12/2020
Design :	June 2003
File No. : Mt Shadwell Quarry 20-12-29 Working L&S	
Scale : 1:500 (A0)	
Sheet	PLAN NO.
17/27	215072



CH T00.0

LEGEND



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Project :

**WA1478 Mt SHADWELL  
SCORIA QUARRY  
WORK SECTIONS  
MORTLAKE  
VICTORIA**

Survey : C.T.

28/12/2020

Design :

June 2023

File No. : Mt Shadwell Quarry 20-12-29 Working 2.dwg

Scale : 1:500 (A0)

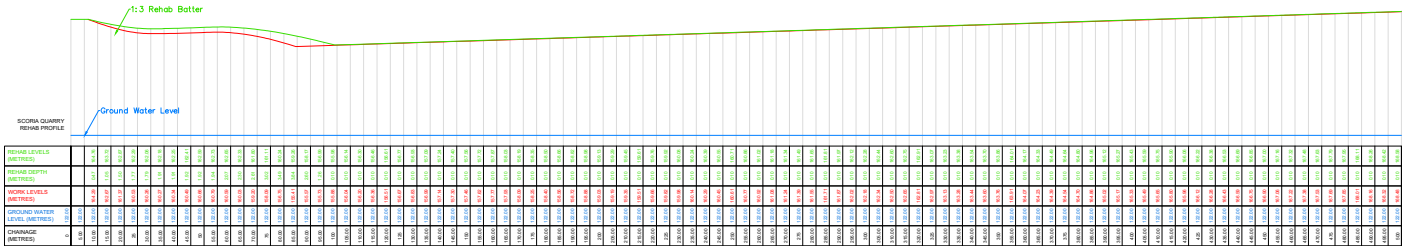
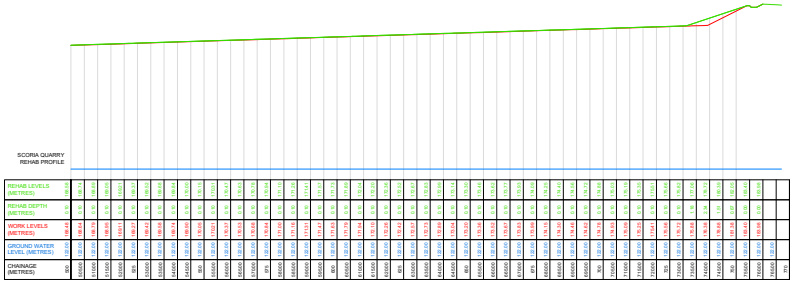
Sheet

PLAN NO.

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215072





**LEGEND**

**BUILDING**

**FENCE LINE**

**EARTH DRAIN**

**PITCHER DRAIN**

**EDGE OF SEA**

**EDGE OF DRAIN/WALL**

**LIMIT OF WORK**

**TITLE PEG**

**PERMANENT SURVEY MARK**

**SURVEY STATION**

**SQUARE POST**

**BORE HOLE**

**TREE STUMP**

**SHRUB**

**TREE**

**TREE CANOPY RADIUS**

**Landform**

15 Stringybark Court,  
Bendigo, VIC. 3550  
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Fax: (03) 54413474  
Mobile: (0427) 400616  
Email: info@landform.net.au

- Notes :
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  4. Size of Symbols shown on plan do not relate to the actual size of objects on the ground

Project :

**WA1478 Mt SHADWELL  
SCORIA QUARRY  
REHAB PROFILES  
MORTLAKE  
VICTORIA**

Survey : C.T.

Design :

File No. : Mt Shadwell Quarry 20-12-29 Working J.dwg

Scale : 1:500 (A0)

Sheet : PLAN NO.

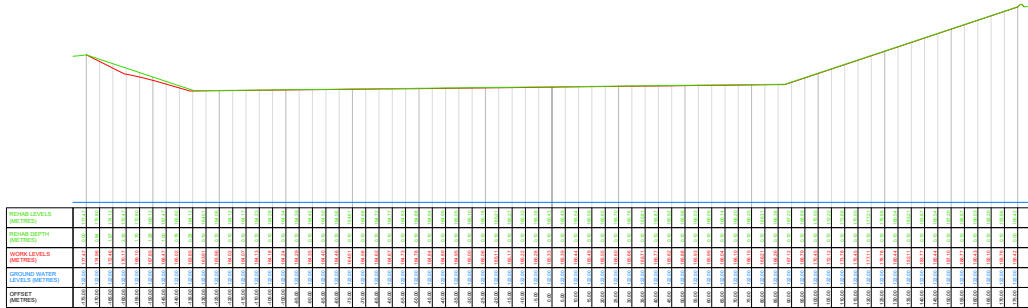
**19/27**

**215072**

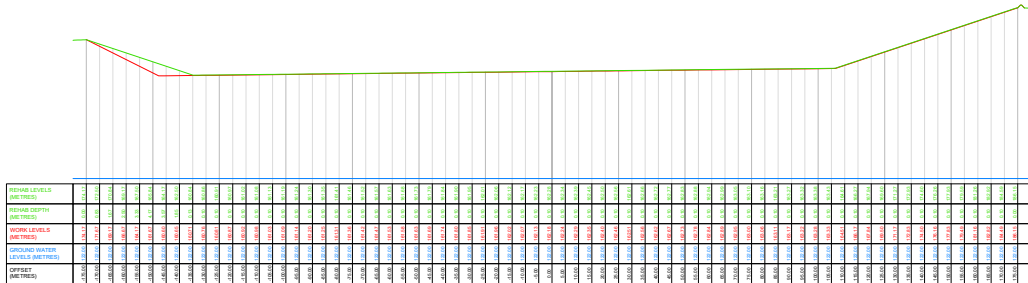
29/12/2020

June 2023

Survey : C.T.		29/12/2020
Design :		June 2023
File No. : MT Shadwell Quarry 20-12-29 Working Jdng		
Scale : 1:500 (AO)		
Sheet	PLAN NO.	
<b>20/27</b>	<b>215072</b>	



CH 400.0



CH 500.0

#### LEGEND

- |  |                   |  |                       |  |                    |
|--|-------------------|--|-----------------------|--|--------------------|
|  | BUILDING          |  | TITLE PEG             |  | TREE STUMP         |
|  | FENCE LINE        |  | PERMANENT SURVEY MARK |  | DRUM               |
|  | EARTH DRAIN       |  | SURVEY STATION        |  | TREE               |
|  | PAVEMENT DRAIN    |  | SQUARE POST           |  | TREE CANOPY RADIUS |
|  | EDGE OF SUMP      |  | BORE HOLE             |  |                    |
|  | EDGE OF DRAIN/PIT |  |                       |  |                    |
|  | LIMIT OF WORK     |  |                       |  |                    |



15 Stringybark Court,  
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Email: [info@landform.net.au](mailto:info@landform.net.au)

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#### Project :

**WA1478 Mt SHADWELL  
SCORIA QUARRY  
REHAB SECTIONS  
MORTLAKE  
VICTORIA**

#### Survey : C.T.

29/12/2020

#### Design :

June 2003

File No. : Mt Shadwell Quarry 20-12-29 Working L&Sg

Scale :

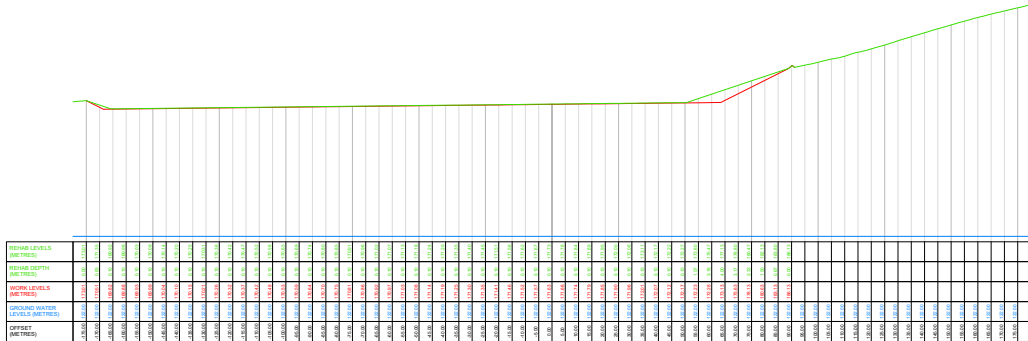
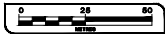
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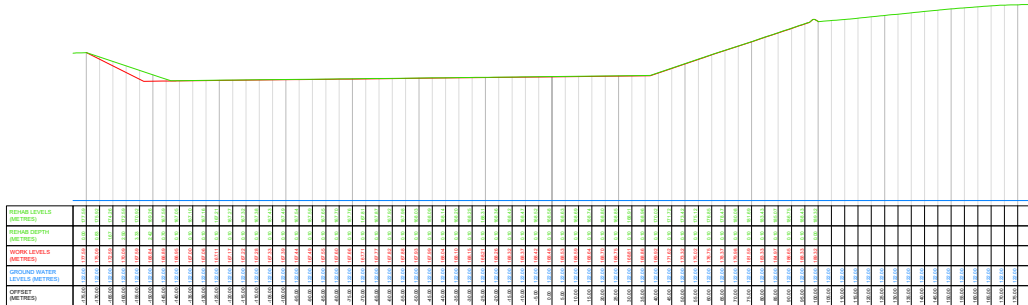
PLAN NO.

21/27

215072



CH 500.0



CH 500.0

LEGEND

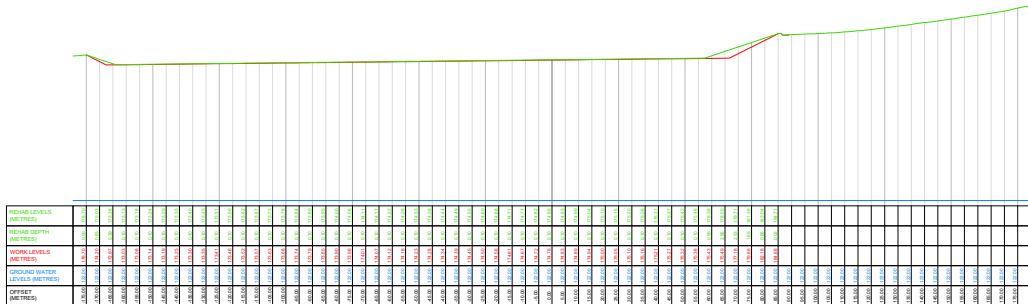
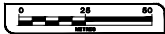
- BUILDING  
 FENCE LINE  
 EARTH DRAIN  
 PAVED DRAIN  
 EDGE OF SEAL  
 EDGE OF DRAINAGE  
 LIMIT OF WORK  
 TITLE PEG  
 PERMANENT SURVEY MARK  
 SURVEY STATION  
 SQUARE POST  
 BORE HOLE  
 TREE STUMP  
 SHRUB  
 TREE  
 TREE CANOPY RADIUS



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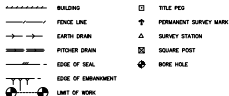
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WA1478 Mt SHADWELL		Design :	June 2003
SCORIA QUARRY		File No. : Mt Shadwell Quarry 20-12-29 Working L&Sg	
REHAB SECTIONS		Scale :	1:500 (AO)
MORTLAKE		Sheet	PLAN NO.
VICTORIA		22/27	215072





CH T00.0

LEGEND

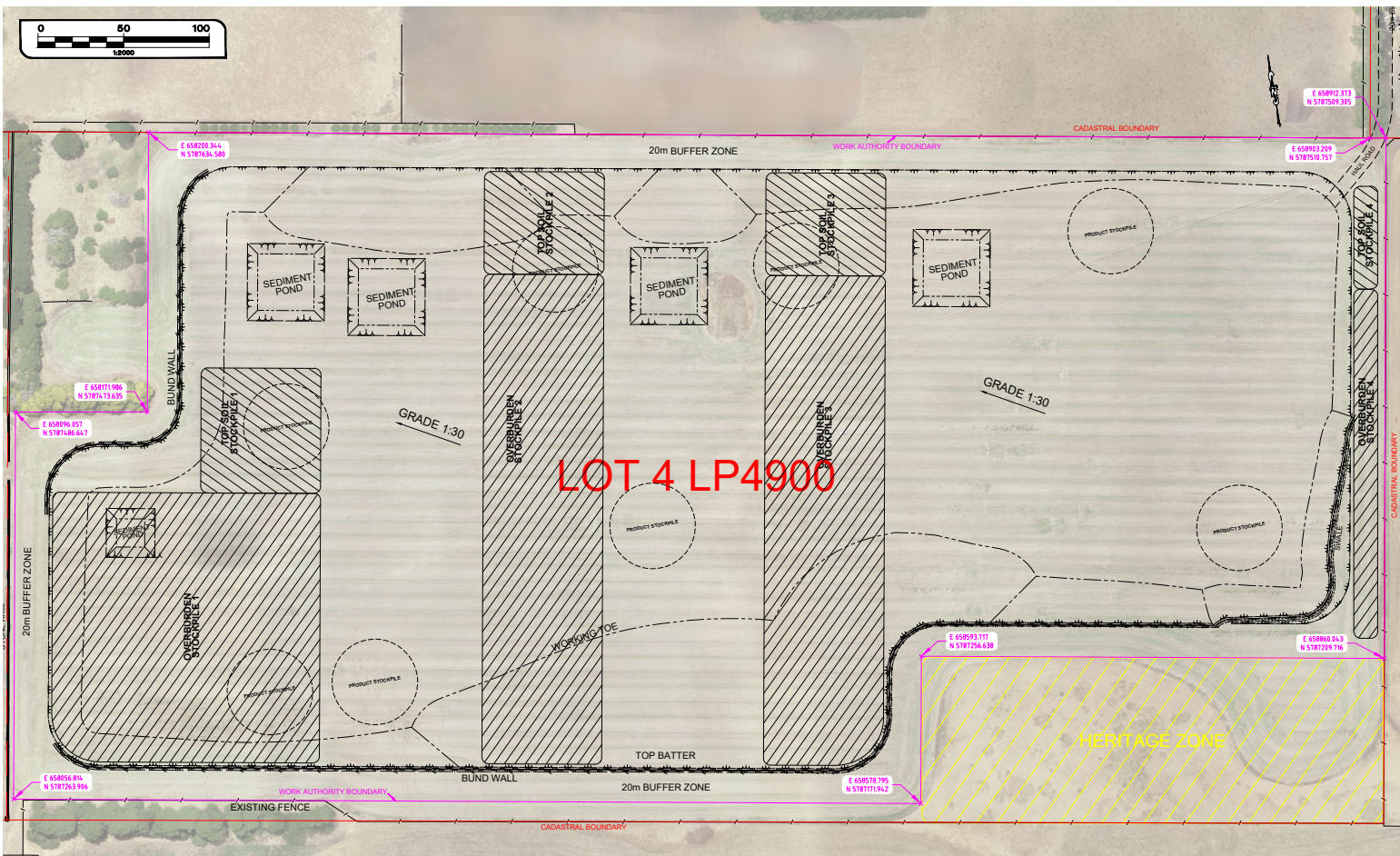
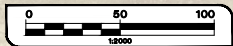


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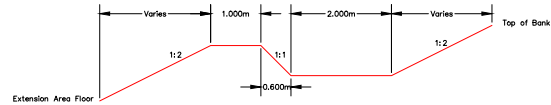
**WA1478 Mt SHADWELL  
SCORIA QUARRY  
REHAB SECTIONS  
MORTLAKE  
VICTORIA**

Survey : C.T.	28/12/2020
Design :	June 2023
File No. : Mt Shadwell Quarry 20-12-29 Working L&Sg	
Scale :	1:500 (A0)
Sheet	PLAN NO.
<b>23/27</b>	<b>215072</b>

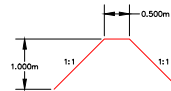


LEGEND				 <b>Landform</b> <small>15 Stringybark Court, Bendigo, VIC. 3550 Ph: (03) 54413634 Fax: (03) 54413674 Mobile: 0427 560616 Email: info@landform.net.au</small>	<b>Notes :</b> 1. All dimensions are in metres unless noted otherwise. 2. Contours are shown at NA height intervals. 3. Levels and Coordinates are to AHD, GDA94/MGA54 unless stated otherwise. 4. Size of Symbols shown on plan do not relate to the actual size of objects on the ground.	<b>Project :</b> <b>WA1478 Mt SHADWELL SCORIA QUARRY</b> <b>WORK AUTHORITY BOUNDARY</b> <b>MORTLAKE VICTORIA</b>	<b>Survey : C.T. 29/12/2020</b> <b>Design : June 2023</b> <b>File No. : Mt Shadwell Quarry 20-12-29 Working J.dwg</b> <b>Scale : 1:2000 (A3)</b> <b>Sheet : PLAN NO.</b>	
BUILDING FENCE LINE EARTH DRAIN POTTERY DRAIN EDGE OF DRAINAGE LIMIT OF WORK	TITLE PEG PERMANENT SURVEY MARK SURVEY STATION SQUARE POST BONE HOLE	TREE STUMP SHRUB TREES TREE CANOPY RADII	Notes : 1. All dimensions are in metres unless noted otherwise. 2. Contours are shown at NA height intervals. 3. Levels and Coordinates are to AHD, GDA94/MGA54 unless stated otherwise. 4. Size of Symbols shown on plan do not relate to the actual size of objects on the ground.				<b>Project :</b> <b>WA1478 Mt SHADWELL SCORIA QUARRY</b> <b>WORK AUTHORITY BOUNDARY</b> <b>MORTLAKE VICTORIA</b>	<b>Survey : C.T. 29/12/2020</b> <b>Design : June 2023</b> <b>File No. : Mt Shadwell Quarry 20-12-29 Working J.dwg</b> <b>Scale : 1:2000 (A3)</b> <b>Sheet : PLAN NO.</b>





Typical Swale Cross-Section



Typical Bund Wall Cross-Section

#### LEGEND

	BUILDING		TITLE PEG		TREE STUMP
	FENCE LINE		PERMANENT SURVEY MARK		SHRUB
	EARTH DRAIN		SURVEY STATION		TREE
	PITCHER DRAIN		SQUARE POST		TREE CANOPY RADIUS
	EDGE OF SEA		BONE HOLE		
	EDGE OF EMBANKMENT				
	LIMIT OF WORK				



#### Notes :

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#### Project :

**WA1478 Mt SHADWELL  
SCORIA QUARRY  
TYPICAL SECTIONS  
MORTLAKE  
VICTORIA**

#### Survey : C.T.

29/12/2020

#### Design :

June 2023

File No. : Mt Shadwell Quarry 20-12-20 Working J.dwg

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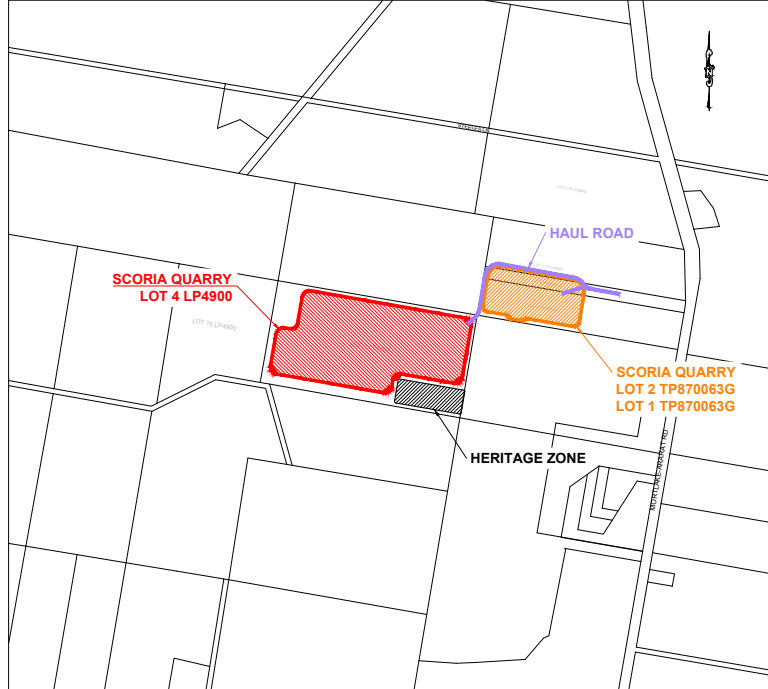
Sheet

PLAN NO.

**26/27**

**215072**





LOCALITY PLAN

LEGEND			 <p>15 Stringybark Court, Bendigo, VIC. 3550 Ph: (03) 54413634 Fax: (03) 54413674 Website: 105427180616 Email: 105427180616@net.net.au</p>	Notes :	Project :	Survey : C.T.	29/12/2020
<p>~~~~~ BUILDING</p> <p>--- FENCE LINE</p> <p>--- EARTH DRAIN</p> <p>--- PITCHER DRAIN</p> <p>--- SIDE OF SEA</p> <p>--- SIDE OF DRAINAGE</p> <p>--- LIMIT OF WORK</p>	<p>□ TITLE PEG</p> <p>↑ PERMANENT SURVEY MARK</p> <p>△ SURVEY STATION</p> <p>□ SQUARE POST</p> <p>● BONE HOLE</p>	<p>● TREE STUMP</p> <p>○ SHIRAZ</p> <p>○ TREES</p> <p>× TREE CANOPY RADII</p>		<p>1. All dimensions are in metres unless stated otherwise.</p> <p>2. Contours are shown at NA height intervals.</p> <p>3. Levels and Coordinates are to AHD, GDA94/MGA54 unless stated otherwise.</p> <p>4. Size of Symbols shown on plan do not relate to the actual size of objects on the ground.</p>	<p>WA1478 Mt SHADWELL SCORIA QUARRY LOCALITY PLAN MORTLAKE VICTORIA</p>	<p>Design : June 2023</p> <p>File No. : Mt Shadwell Quarry 20-12-29 Working J.dwg</p> <p>Scale : 1:15000 (A3)</p> <p>Sheet : 27/27</p> <p>PLAN NO. : 215072</p>	

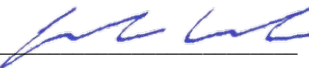
RISK REGISTER FOR WORK AUTHORITY NUMBER: 1478																				
Quarrying or Rehabilitation Hazard	Risk No.	Risk Event	Phase			Sensitive Receptors				Inherent Risk Assessment			Control Measures	Performance Standards	Residual Risk Assessment			Monitoring and Ongoing Management		Detailed Risk Treatment Plan attached?
			Set up/ Construction	Operations/ Production	Rehabilitation	Details of sensitive receptor	Location and proximity to site	How hazard may harm or damage sensitive receptor	Evidence to support assessment	Likelihood	Consequence	Risk Rating			Likelihood	Consequence	Risk Rating	Aspect to be monitored	Details of monitoring and ongoing management	
Dust	1	Dust generated from the operation emitted into the environment causing loss of air quality and/or triggering EPA GED 2021	Yes	Yes	Yes	6 Residences	1-2km from site	Dust generated from quarrying emitted into the environment causing loss of air quality (limit exceedance).Stabilize soil stockpiles.	Dry windy conditions and no/inappropriate controls to manage dust,(nuisance) emissions on haul road and operations (including soil stockpiles) within work area.	Possible	Moderate	Medium	Maximum speed limit. Water spray. Stockpiles stabilised	15km km/h speed limit. Water sprayed as required. Implicit	Unlikely	Minor	Low	Visible dust generated on site and/or stockpiles.	Dry windy conditions and appropriate controls to manage dust,(nuisance) emissions on haul road and operations within work area.	Yes RTP 1
Ground Disturbance - Aboriginal Heritage	2	Mechanical stripping and stockpiling topsoil and overburden and extracting product damaging or relocating in-situ Aboriginal heritage.	Yes	Yes	Yes	Aboriginal heritage	Implicit	Site preparation will disturb Aboriginal heritage	Aboriginal heritage identified on site during CHMP field survey	Almost Certain	Major	Very High	Prior to the commencement of the activity a HA/QA and 2 RAP representatives must undertake an archaeological surface salvage program	The salvaged surface cultural material must be bagged at a maximum of a single artefact per bag for each location;	Possible	Minor	Medium	Pre quarrying archaeological surface salvage program to be completed in accord with CHMP Condition 1.2.4	Program to be completed prior to quarrying activities	Yes RTP 2
Ground Disturbance - Ground Instability	3	Quarry extraction intercepts or cause ground instability	Yes	Yes	Yes	Ground stability	Quarry extraction and work areas	Quarrying may intercept clay seams, water seepage or localised instability.	Quarry activity causes or intercepts ground instability.	Unlikely	Minor	Low	Visual observation of ground stability.	Implicit with quarry activity suspended until geotechnical reassessment is undertaken	Rare	Insignificant	Low	Visual inspection of ground stability	Daily inspection	Yes RTP 3
Ground Disturbance- Biodiversity- Mt Shadwell rises	4	Loss or damage to rises	Yes	Yes	Yes	Biodiversity	MtShadwell rises south of quarry site	Work site activities impacting on biodiversity	Activities associated with quarrying damage or destroy biodiversity.	Unlikely	Minor	Low	Quarry activity contained to work authority area. Work area and adjacent rocky outcrop visually inspected. No evidence of suitable habitats identified.	Buffers around worksite to protect Mt Shadwell rises	Rare	Insignificant	Low	Extraction area footprint is contained within buffers.	Monthly site inspections	Yes RTP 4
Ground Disturbance - Southern Bent-Wing Bat habitats.	5	Loss or damage to SBWB habits	Yes	Yes	Yes	Rocky outcrop that may contain Southern Bent-Wing Bat (SBWB) habitats.	Within 100m of quarry on southern side	Bats disturbed by quarrying activity	Activities associated with quarrying damage or destroy habitats.	Unlikely	Critical	Very High	Quarry and Buffers clearly identified. Site inspection found no evidence of suitable habitats	Buffers clearly identify work site and ensure quarrying does not intrude the rocky outcrop. Loyts 1, 2 & 4 visuallyinspected No evidence of suitable habitats.	Rare	Insignificant	Low	Extraction area footprint is contained within buffers.	Monthly site inspections	Yes RTP 5
Ground Disturbance Biodiversity- Avian fauna nest sites	6	Destruction of nest sites in old quarry face	Yes	Yes	No	Avian Fauna nest sites	Exposed faces of old quarry	Nest sites destroyed during quarrying activities	Destruction of nest sites during quarrying activities	Possible	Moderate	Medium	Visual inspection of quarry face prior to extraction	No extraction of old quarry face if breeding avian fauna is observed.	Rare	Minor	Low	Avian fauna nesting in quarry face	Monthly inspection	Yes RTP 6
Water-Surface	7	Contamination of the environment, waterways and related ecosystems.	Yes	Yes	Yes	Environment, waterways and related ecosystems	Work site and environs	Work site activities contaminate the environment, waterways and related ecosystems	Activities associated with quarrying contaminate the environment,waterways and related ecosystems	Unlikely	Minor	Low	RTP No 7 controls 1-3.	Controls 1-3 implemented.	Rare	Minor	Low	Condition of waterway at outlet of diversion drain.Effectiveness of upstream diversion systems.	As required but particularly before expected high rainfall events.	Yes RTP 7
Soil Biological Activity	8	Loss of soil biology in stockpiles.	Yes	Yes	Yes	Soil biology.	Soil stockpiles	Loss of biological activity within top soil and overburden stock piles	Failure to maintain and/or stabilise soil stock piles	Possible	Minor	Medium	Maintain stockpiles as per controls 1,2 & 4 in RTP	Controls 1, 2, & 4 implemented	Rare	Minor	Low	Maintenance of soil and overburden stockpiles	Monthly internal reporting for site management	Yes RTP 8
Soil Biological Activity	8	Loss of soil seed and nutrients in stockpiles	Yes	Yes	Yes	Soil seed/nutrients	Soil stockpiles	Loss of soil seeds and nutrients within top soil and overburden stock piles by not maintaining separate top soil and overburden stockpiles.	Failure to maintain and/or stabilise soil stock piles	Possible	Minor	Medium	Maintain stockpiles as per controls 1-4 RTP	Controls 1,2,3 &4 implemented	Rare	Minor	Low	Maintenance of soil and overburden stockpiles	Monthly internal reporting for site management	Yes RTP 8

Mineral Resources (Sustainable Development) Act 1990

Tenement Number: WA1478

Plan Number: PLN001732

Work Plan Statutorily Endorsed

Signed: 

Delegate of the Department Head

Date: 01/05/2024

Pest animals and weeds	9	Unsanitised plant/equipment introducing weeds and /or diseases Inadequate pest control	Yes	Yes	Yes	Private land	Within and surrounding work authority area	Private land impacted by plant disease	Work site and agricultural land without invasion of plant disease	Possible	Moderate	Medium	Manage introduction of plant disease onto the work authority area	Controls 1 & 4 implemted.	Unlikely	Minor	Low	Cleanliness of plant and equipment.	weekly/quarterly/as required	Yes RTP 9
Pest animals and weeds	9	Inadequate pest control	Yes	Yes	Yes	Private land	Within and surrounding work authority area	Private land colonised by pests	Work site and agricultural land without invasion of pest animals	Possible	Moderate	Medium	Eradicate or manage any pest animals on the work authority area	Controls 3 & 4 implemted.	Unlikely	Minor	Low	Monitor site flora and fauna for noxious weeds and pests	weekly/quarterly	Yes RTP 9
Pest animals and weeds	9	Inadequate weed control	Yes	Yes	Yes	Private land	Within and surrounding work authority area	Private land colonised by weeds	Work site and agricultural land without invasion of weeds	Possible	Moderate	Medium	Eradicate or manage any weeds on the work authority area	Controls 2 & 4 implemted.	Unlikely	Minor	Low	Monitor site flora and fauna for noxious weeds and pests	weekly/quarterly	Yes RTP 9
Noise pollution	10	Residents within 2km impacted by the noise, generated from machinery and plant operating in the day between 0700-1800 Monday to Friday.	Yes	Yes	Yes	6 residences	Within 1-2km N & E of work site	Industrial noise associated with quarrying impacting amenity and /or health.	Noise generated from operating plant and machinery during the day may impact on neighbour amenity.	Unlikely	Minor	Low	Restricted operational hours. Noise generated is within EPA -NIRV guidelines.	Operation hours restricted to Monday-Friday 7.00am - 6pm. 7am-12 noon Saturdays. No operations on public holidays	Unlikely	Minor	Low	Quarry operates within licensed hours. Quarry operates within licensed hours. Noise generated is within EPA - NIRV guidelines.	Operating hours in accord with conditions.Noise generated complies with EPA GED.Site manger monitors monthly or after complaint.	Yes RTP 10
Storm Water	11	Storm water flooding generated within work site and flowing from work site onto surrounding downstream land and waterways.	Yes	Yes	Yes	Worksite, biodiversity, farmland, Worksite, biodiversity, farmland, Waterways and related echo systems.	Work site and surrounding land.	Storm water can, erode work site and roads. Deposit sediments on and or erode downstream land..	Erosion to work site and roads. Sedimentation and or erosion onto downstream lands and into waterways.	Possible	Moderate	Medium	RTP No.11 controls 1-4	Controls 1-4 implemented.	Unlikely	Minor	Low	Work site. Roads. Biodiversity and farmland.	Inspect outlet area to assess the potential for contaminated water to exit the site. Inspect and maintain erosion control structures.	Yes RTP 10
Erosion and Sedimentation	12	Erosion of work site infrastructure.	Yes	Yes	Yes	Extraction stage, Stockpiled topsoil, Haul Road, Surrounding property	Work site and surrounding land	Erosion may occur from extraction site, topsoil stock piles and haul road producing sediment	Extraction stages impacted by erosion Top soils may be damaged by erosion Haul road damaged by erosion Sediments deposited on surrounding land	Possible	Moderate	Medium	RTP No.12 controls 1-5	Controls 1-5 implemted.	Unlikely	Minor	Low	Effectiveness of sediment control structures	Condition and operating effectiveness pre-winter and following each major rainfall event.	Yes RTP 11
Erosion and Sedimentation	12	Sediments deposited on surrounding land.	Yes	Yes	Yes	Extraction stage, Stockpiled topsoil, Haul Road, Surrounding property	Work site and surrounding land	Site erosion may deposit site sediments on surrounding land.	Sediment from site impacts surrounding environment	Possible	Moderate	Medium	RTP No.12 controls 1-5	Controls 1-5 implemted.	Rare	Minor	Low	Effectiveness of sediment control structures	Condition and operating effectiveness pre-winter and following each major rainfall event.	Yes RTP 11
Fuel and lubricants	13	Contamination of groundwaterand/or Land	Yes	Yes	Yes	Groundwater and land	Within and surrounding worksite.	Contamination of groundwater and/or land	Groundwater and land contaminated by spilt hydro carbons	Unlikely	Minor	Low	RTP No.13 controls 1-7	Controls 1-4 implemented	Unlikely	Insignificant	Low	No fuels , lubricants and hazardous materials available on site. Pollution control devices maintained and serviced.	Weekly inspection and 6 monthly audit of fuel spill kit.	Yes RTP 13
Rubbish	14	Rubbish and derelict plant,equipment and machinery, and waste impacting the environment.	Yes	Yes	Yes	Surface water, groundwater, ecosystems, private land.	Within and surrounding worksite.	Contaminated work site, surface and ground water, ecosystems and private land.	Waste/ rubbish not removed from work site leading to pollution of surface water, groundwater, ecosystems and private land.	Possible	Minor	medium	RTP No.14 controls 1-3.	Controls 1-3 implemented	Unlikely	Minor	Low	Covered bins available. Approved disposal of waste.Derelict plant and equipment removed from work site.	Monthly internal reporting.	Yes RTP 14
Site Access	15	Injury to member of the public.	Yes	Yes	Yes	Members of the public	Work site	Uncontrolled public access to work site may present a safety or injury risk.	Implicit	Possible	Major	High	RTP No.15 Controls 1-4	Controls 1-4 implemented	Unlikely	Minor	Low	Work site security breaches recorded. Work site access by authorised personnel recorded.	ecorded as site breach occurs. Daily recording of visitors.	Yes RTP 15
Fire	16	Uncontrolled fire igniting on site exiting the work authority.	Yes	Yes	Yes	Public, air quality, private land, ecosystems	within and surrounding work site	Implicit in hazard	Implicit	Possible	Major	High	RTP No.16 Controls 1-8	Controls 1-8 implemented	Unlikely	Minor	Low	As per RTP No 16, 1-7	As per RTP No 16, 1-7	Yes RTP 16

Altered Visual Amenity	17	Altered visual amenity.	Yes	Yes	Yes	6 residences. Commuters on Mortlake Ararat Road.	Nearby residences. South travelling commuters on Mortlake Ararat Road		Work site partially visible from Mortlake Ararat Road	Possible	Minor	Medium	Native vegetation planted in northern buffer zone	Maintain buffer zone vegetation	Rare	Minor	Low	Buffer vegetation	Health of trees	Yes RTP 17
Accountable Personnel																				
List Personnel accountable for the implementation, management and review of the Risk Management Plan																				
Personnel			Roles and Responsibilities																	
Colin Goldsworthy Owner Manager			Implementation/Management/Review of RTP's.																	