GT BOBCAT NEW QUARRY at COMPTON - M.C. 4562

REVISED MINING PROPOSAL

Location: **Approx. 8km west of Mount Gambier**
Allotment 9 & Pt. Allot.10 Hundred of Blanche, Compton

Tenement: **Mineral Claim 4562**

Tenement Holder: **GT Bobcat Pty Ltd**

Mined Commodity: **Limestone & Dolomite**

Contact: **Jake Douglas** – Ph. 0459 333 350

November 2024 (Version 2)

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BACKGROUND

Mineral Claim 4562 was granted over Allotment 9 and Portion of Allotment 10 in D1608, Hundred of Blanche on 13th July 2023. The Mineral Claim tenement holder, GT Bobcat Pty Ltd wishes to pursue the extraction of limestone within MC 4562 for construction materials. This Mining Proposal has been prepared to support a Mineral Lease application seeking approval to quarry limestone and dolomite on Allotment 9 and Portion of Allotment 10, Hundred of Blanche. The landowner is Lot 10 Burnda Road Compton Pty Ltd. A signed Landowner Agreement has been completed and previously lodged with DEM at the time of Mineral Claim application.

The nearest town is Mount Gambier which is located approximately 8 kilometres east of the proposed new quarry site. Mount Gambier is situated approximately 440km from Adelaide. Mount Gambier has a population of approximately 27,000 people.

DECLARATION OF ACCURACY

I *Jake Douglass* on behalf of GT Bobcat Pty Ltd as the tenement holder of Mineral Claim 4562 confirm that in accordance with Regulation 30 (4) and/or Regulation 49 (4) of the Mining Act 1971 (SA), I have taken reasonable steps to review the accompanying information in accordance with the minimum information required in Determination - Terms of Reference 003 (Gazetted 11 December 2020) and to ensure its accuracy for the purposes of a Mining Proposal as submitted herewith.

Name: Jake Douglass

Position: Manager

Signature: 

Date: 21-05-2024

1. DESCRIPTION OF THE EXISTING ENVIRONMENT

Mineral Claim 4562 is situated within cropping and stock grazing farmland and is surrounded by adjoining rural properties. The quarry site is located in the Compton area approximately 8 kilometres west of Mount Gambier SA.

1.1 Topography and landscape

The proposed quarry site is situated within a gently undulating limestone plain with small areas of low calcarenite dunes. Surrounding pastures are predominantly used for grazing of beef and dairy cattle with some sown to cereal crops. Views from pastoral areas are middle-ground panoramic with backdrop features provided by distant pine plantations and the volcanic landforms of the Mount Gambier region. Refer **Section 7** – Maps and Plans – Figure 1 – Regional Topographic Map.

1.2 Climate

The site experiences a predominantly Mediterranean climate with dry summers and wet winters. However, compared with other parts of South Australia the rainfall characteristics of Mount Gambier are quite high with annual averages of more than 700mm. Most rain occurs between May to October. The nearest Bureau of Meteorology (BOM) meteorological station is located at Mount Gambier Airport. Situated on the drier, south side of Mount Gambier the airport site averages 711mm of rain per annum with a mean number of rain days > 1mm occurring 119 days per year.

Average temperatures are generally highest during January and February with a monthly mean maximum temperature of around 25ºC. The maximum summer temperature recorded is 42ºC (very rare). Winters are generally cold and wet with a mean minimum temperature of 5.2ºC recorded in July.

The near coastal location of Mount Gambier means that it is quite often subject to sea breezes. During summer, moderate N, NE, E, SE, S, SW and Westerly winds occur in the mornings for 26 days of the month, moderating to W, SW or strong Southerly's in the afternoons with no E or N winds. During winter, strong N, and moderate NW and Westerly winds occur in the mornings for 14 days of the month, moderating to N, NW, W and SW with milder Southerly winds in the afternoons for 26 days of the month. Refer **Section 6** - Appendices – Climate Data – Appendix A.

1.3 Topsoil and subsoil

Situated within former pasture land used for cropping and grazing of beef and dairy cattle, MC 4562 is surrounded by adjoining rural properties.

The topsoil profile is comprised of a shallow predominantly well-drained, alkaline, brown to red weakly structured sandy soil overlying dunal sand up to 300 - 400mm deep.

Topsoil and subsoil/overburden will be stripped and stockpiled in stages as the quarry is developed.

Topsoil and subsoil/overburden stripped during initial quarry development (Stage 1) will be used to construct a perimeter screening mound and safety bund within the western and northern roadside site boundaries. Any remaining balance of topsoil and subsoil/overburden will be temporarily stored on undisturbed adjacent areas of the tenement for future rehabilitation use.

There are no known variations in soils that may be an issue for disturbance or rehabilitation over the application area. Refer **Section 7** – Maps and Plans – Figure 1 – Regional Topographic Map.

1.4 Geological environment

The limestone and dolomite to be mined within MC 4562 is a part of the Gambier Limestone formation that underlies much of the lower South East of South Australia. The Gambier Limestone formed in an open water marine environment from the Late Eocene to early Middle Miocene age (40 to 15 million years ago).

1.4 Geological environment (cont.)

The Gambier Limestone formation constitutes an enormous deposit that is economically accessible over large areas but outcrops poorly or is obscured by a thin overburden covering of sandy soil. The formation varies from only a few metres thick along the northern margins of the Gambier Embayment to greater than 300 metres thick along the south coast. In the vicinity of MC 4562 the Gambier Limestone is generally flat lying or gently folded with only a thin layer of overburden.

The mineral deposit within MC 4562 contains an indistinct boundary of limestone $CaCO_3$ and dolomite $CaMg(CO_3)_2$ both a product of the same sedimentary process. The alteration process of limestone into dolomite (dolomitization) is generally considered to have occurred in stages. Whilst it is understood that the dolomite resource is located to the north of the deposit in MC 4562 and the limestone to the south of the site, it has not been drilled and therefore no distinct boundary can be identified.

The geological distribution of dolomites may be primary deposits which originated by direct precipitation from sea water or by deposition of shells and certain marine organisms which contain magnesium as well as calcium carbonate.

Dolomites have been developed in several areas in the lower South-East by metasomatic replacement of bryozoal limestones generally in proximity to faults and a relation is inferred between dolomitization and volcanic activity (Cochrane, texture. 1952). It is doubtful whether the dolomitization is of stratigraphic significance and where dips exceed 40deg. faulting is known or suspected. The dolomites are usually pink in colour, but may be white or yellow; they are of variable hardness.

Within the former Section 385, (just North of MC 4562) Hundred of Blanche, pink and white dolomites occur as bedded replacements within bryozoal limestone adjacent to a major zone of faulting (Cochrane, 1952). Stone of variable hardness has been worked from a number of shallow openings (Jack, 1923).

As it is a low-priced mineral large tonnages are consumed annually so that the location of deposits in relation to centres of consumption and their accessibility largely controls their exploitation. Quarried products are used extensively in local road construction and in concrete aggregate.

**References:*

1. Department of Mines and Energy SA – Report Book No. 88/2 – A Review of Gambier Limestone – Geology, Uses, Specifications and Production – Geological Survey by D.J. Flint – January 1988 DME. 148/84 – pages 19-25 & geological plans 86-570, S18943, S18944 & S19543)

2. Department of Mines – Geological Survey of South Australia – Bulletin No. 38 Limestone, Dolomite and Magnesite Resources of South Australia – by R.K. Johns. published 1963 page 46 & geological map Figure. 18)

To view referenced maps and plans refer **Section 7** – Maps and Plans

Stratigraphy

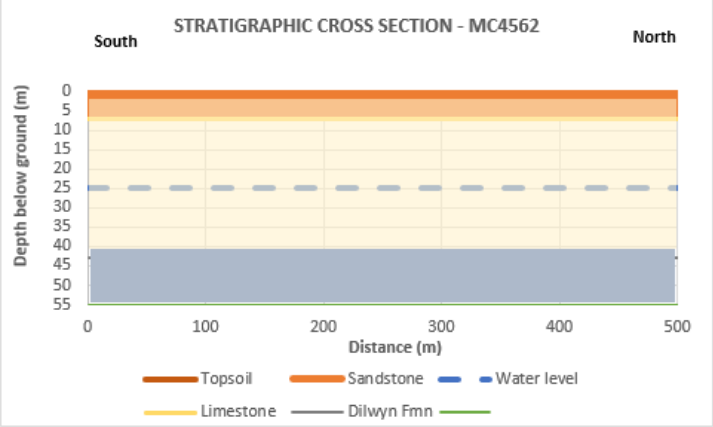
Not a lot of private or government wells intersect the top of the Dilwyn Formation (confined sediments) in the area of MC 4562.

The stratigraphy close to MC 4562 varies for the following reasons:

- About 2 kilometres to the north of the site is a large, uplifted area / dome of the Dilwyn Formation. This is fault controlled uplift.
- Because of the domal structure, moving away from the stratigraphic high results in the limestone sediments becoming progressively thicker resulting in deepening, to the south and west.
- As a result of the lack of data points close to the MC a depth to the top of Dilwyn Formation under MC 4562 can only be estimated.
- Using intersections to the north and south results in the top of the Dilwyn Formation to be estimated between 45 to 50 m below ground surface under the MC4562 site.

1.4 Geological environment (cont.)

- The nearest well intersecting the Dilwyn Formation to MC 4562 is 7022 – 7964 has the following drillers log: 0 – 0.2m Topsoil, 0.2 – 7m Sandstone, 7 – 35m Limestone, 35m Dilwyn Formation.
- There are no wells on the site of MC 4562 with a drillers log. An assessment of data estimates onsite geology to be: 0 – 0.2m Topsoil, 0.2 – 7m Sandstone, 7 – 50m Limestone, 50m Dilwyn Formation.
- From previous work it is understood that the grey basal marls of the Greenways Member generally has an isopach thickness of about 25 m, so the Camelback Member (limestone) will extend between about 7 to 25m (the section of interest to quarry operators).
- Water table depth is estimated on site to be close to 25 m, so if mining operations require stopping 2m prior to water table this will meet the requirement as the base of the Camelback Member is close to this depth.
- It seems that the better limestone is going to be extinct around the water table or just above.
- The quarry would pose no danger to the confined aquifer which from water table is about another 25m deeper
- The geology of the South East of South Australia shows slight differences in the area of interest between the Bridgewater Formation and the Gambier Limestone. From the log provided of the local geological formations, it has indicated about 6m of sandstone formation depth with the underlying limestone. The limestone quarries in the immediate area have generally had agreements with local contractors to remove the sandstone and use it for road rubble prior to bench mining limestone ashlars. At the regional scale the geology map of the south east is produced at, there will be minor observed variations. Drillers logs can be highly unreliable as they often mix sandstone and limestone, not understanding the differences.



**Reference:* *Jeff Lawson, Hydrogeologist*

1.5 Geohazards

Within the lower South East region there is a relationship between fracture or cave joints and faulting. These line up in a northwest – southeast pattern which is the rift pattern of Australia's movement away from Gondwanaland. These are shown in Figure 1. These faults have come from depth and the ground location is subjective to a small degree. As an example the fault immediately west of MC 4562 is probably located slightly east, running through the line of the whaleback limestone quarries which are often described as fault controlled resulting in uplift.

Any karst activity relevant to MC 4562 will therefore be in a NW – SE trend direction. Additionally most karst activity in the region are not major cave systems but small cavities from 0.1 m to a metre or so.

An easy way to check whether these exist is to interrogate the government database. The Water Connect interface shows data that has been entered after the Geodata system was created. However the Department for Environment and Water has a great deal of historical data (paper files) that can only be viewed within the Geodata system itself. There is no publicly available database for karst activity or caves.

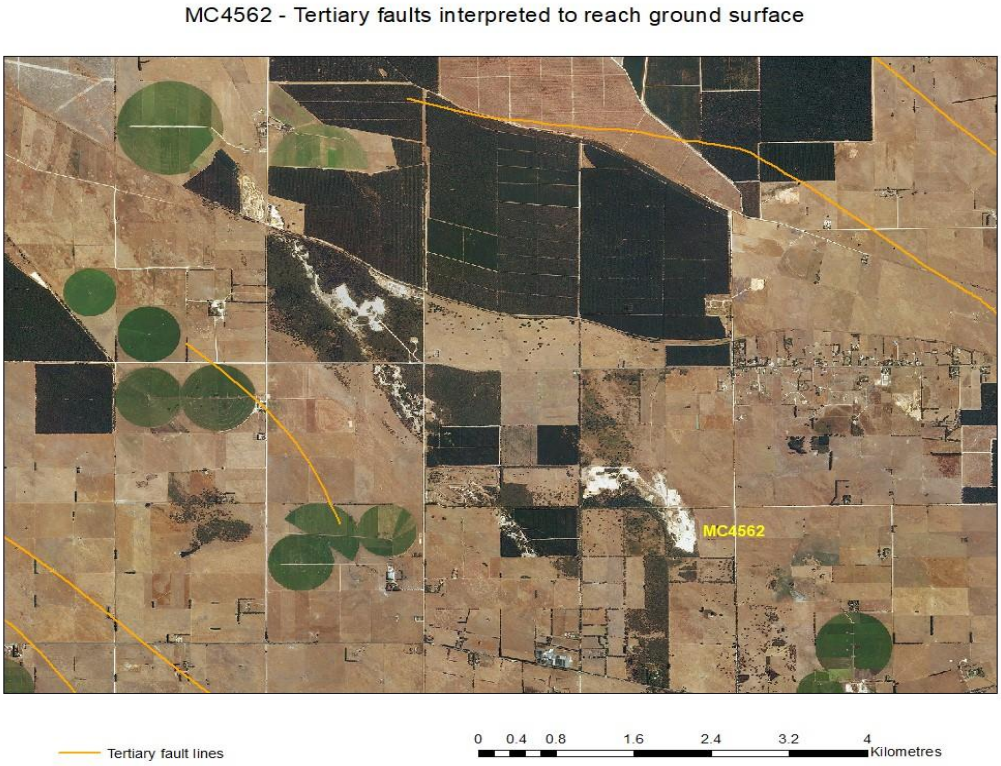


Figure 1. Interpreted Tertiary faults in the area of MC 4562

A quick way to check karst activity is to examine drillers logs for stock, domestic and irrigation wells that may exist within 5 kilometres of the proposed mine site.

Using the middle of the MC 4562 site a circle was drawn for 360 degrees, 5 kilometres out from the site. Every recorded well within that circle was checked for a drillers log.
The results of the drillhole examination indicated some wells immediately east of MC 4562 to have small cavities, most so small that circulation was not lost in the drilling phase. Examples of these are:

- 7022-11480
- 7022-9114 – small cavity 0.1 m 33.9 - 34 m. Below water table no effect on mining operations
- 7022-11857 – 33 m lost circulation. Below water table.
- 7022-11871 – 23 – 24 m. Around or below water table.
- 7022 – 11181 – 43 m, below water table.
- 7022 – 11817 – 21 to 22 m and 23 – 23.5 m. Around or below water table.

Note: the recorded karst activity are all between 1.5 to 2.5 kilometres away from MC 4562

1.5 Geohazards (cont.)

It should be noted that there is generally no easy way to detect cavities at depth. The method most used is resistivity geophysics and this will only locate anomalies which need to be investigation drilled and will likely be sand infill holes. There are more sophisticated methods which are hardly relevant for a quarry producing road rubble.

The limestone stratigraphy in this area requires understanding. The limestone is divided into 4 main units as shown below:

- Green Point Member - further divided into sub units 1 to 4
- Camelback Member
- Greenways Member
- Narrawaturk Marl

The stratigraphy rises from east to west across Mount Gambier, extending out to this area. In the area of MC 4562 the Green Point Member has been eroded away along with the top of the Camelback Member. The significance of this is the top of the Camelback Member is characterized by fracturing (used for drainage under Mount Gambier and irrigation to the south of Mount Gambier). As a result the major fracture or karst zone is missing which will result in generally only small cavities to be intersected along the way.

However small karst zones exit within the limestone quarries surrounding this mining proposal site as can be observed from the following two photos. The first photo shows the result of acidic water and clay can leach down through the sandstone into the limestone, with the second photo indicating how that can have a minor effect when cutting limestone ashlars (equivalent of small cavities recorded in drill holes).

For this mining proposal they will have no effect on production.

Figure 2. karst activity in a quarry wall

Figure 3. Small cavity located in quarry bench

**Reference:* *Jeff Lawson, Hydrogeologist*

1.6 Groundwater

The proposed quarry development is located within the Lower Limestone Coast Prescribed Wells Area (PWA) but is not within a prescribed surface water area. Typically, an unconfined limestone aquifer is the main source of water for the region and this is used for irrigation, stock and domestic and industrial purposes. The depth of the unconfined aquifer varies but south of Mount Gambier the thickness of the aquifer can be up to 300m deep.

Groundwater level contours as shown in Figure 4, indicate a southerly direction, although this will be influenced by the Dilwyn Formation high. Further south they may swing more south westerly.
The most modern water level was from well 7022 – 11288 located in the adjacent quarry which had a water level of 11.1m in 2018. Examining BLA095 located to the south of MC 4562, the water level has dropped about 0.65m across the following 6 years.

An estimate of the current water depth from ground level under MC 4562 is:

2018 standing water level (SWL) for 7022 – 11288 – 11.1m

That quarry base stands 13m lower than the ground level that MC 4562 has been pegged.

In the 6 years since 2018 the water table has dropped 0.65m

Current estimated SWL – 24.75m. Topographic height is about 40m so the reduced standing water level is about 15.3m above Australian Height Datum (AHD).

Figure 4 contoured separately to this calculation also indicated an RSWL value of about 15m

In terms of current water table summer to winter variation, the best well to use is BLA095 located about 1.8 kilometres to the south. This well has a SWL of 26.42m, similar to the estimate of the water level under MC 4562.

YEAR	SUMMER – WINTER VARIATION (m)
2018	0.27
2019	0.1
2020	-0.06
2021	0.06
2022	-0.01
2023	0.14
2024	0.12
Av.	**0.09**

1.6 Groundwater (cont.)

The ground water direction as observed in Figure 4 (below) moves across MC 4562 in a south / south easterly direction. The March and September groundwater contours have been created using the current DEW active observation wells. It can be observed from the contours that there is very little summer to winter variation.

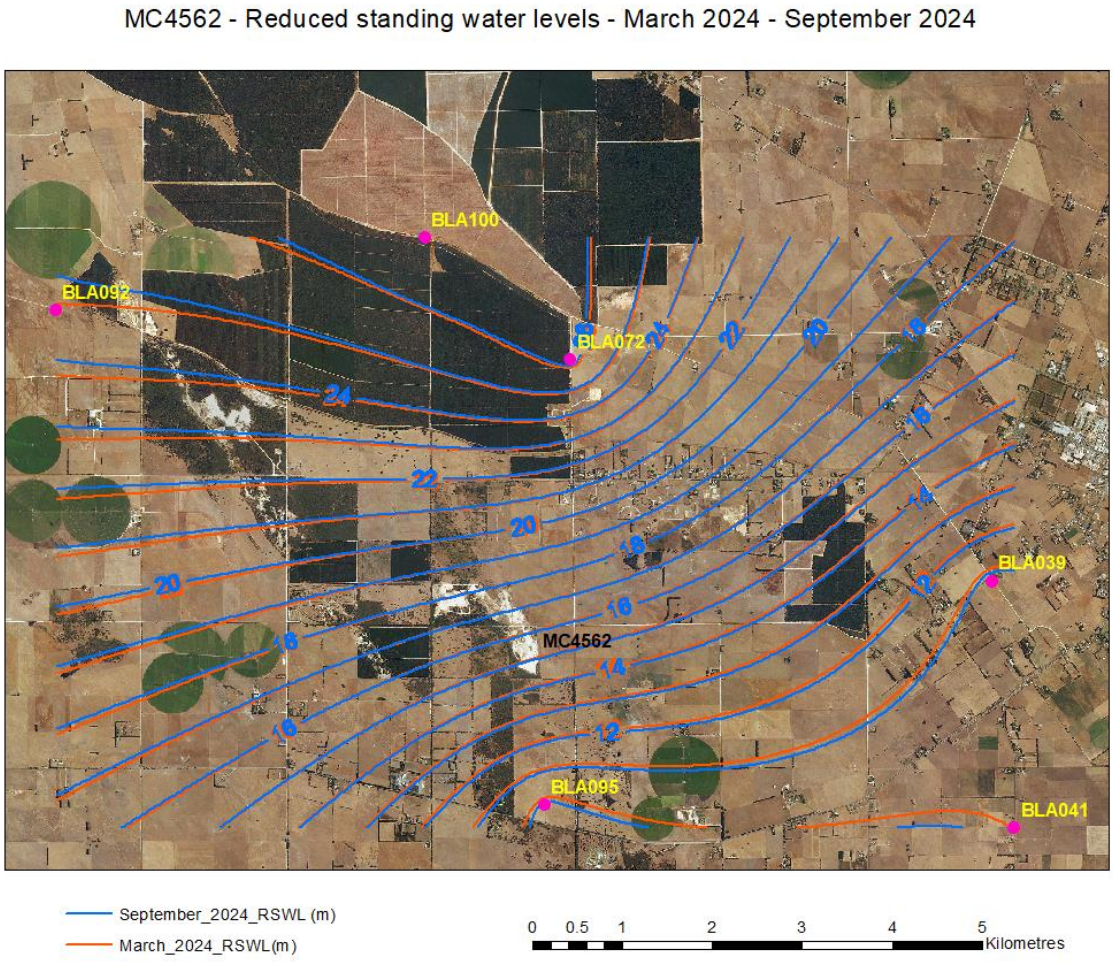


Figure 4 – Reduced standing water level contours (mRSWL) for current observation wells for March and September 2024.

A minimum 2m thickness of limestone will be maintained between the proposed final pit floor level and groundwater within MC 4562. The downward change in topography resulting from the proposed quarry development within MC 4562 means that rainfall runoff is captured internally enabling localised groundwater recharge through the permeable limestone pit floor. No groundwater is required to be used at the site.

*<u>*Reference:*</u> *Jeff Lawson, Hydrogeologist*

Refer also **Section 6** - Appendices – Groundwater Data – Appendix B.

1.7 Surface water

The topography of the proposed quarry site is generally flat lying and situated within a gently undulating limestone plain with small areas of low calcarenite dunes.

There are no distinct creeks or drainage channels in the vicinity of the proposed quarry site as indicated on the attached Regional Topographic Map. The natural pattern of surface water drainage is generally in a South/south-westerly direction. Refer **Section 7** – Maps and Plans – Figure 1 – Regional Topographic Map.

The mean annual rainfall is approximately 711mm (Bureau of Meteorology) refer **Section 1.2** – Climate and **Section 6** - Appendices – Climate Data – Appendix A.

All rainfall run-off and surface water drainage within areas disturbed by the proposed quarry development will be directed into the excavated pit area where it will drain through the permeable quarry floor ensuring no discharge of stormwater run-off from disturbed quarry operations off-site.

There will be no fuel or chemical storage on site.

1.8 Vegetation, weeds and plant pathogens

The proposed quarry development lies within an area previously cleared of native vegetation for agricultural use i.e. cropping and stock grazing.

Some typical pasture weeds may occur at the site and the landowner has a weed management program currently in place. The landowner will regularly monitor the site for weeds and seasonally spray them with appropriate herbicide for adequate control.

There are no known plant pathogens at the site.

1.9 Fauna

There is a very low diversity and abundance of native fauna at the proposed quarry site which contains no natural habitat on the previously cleared pasture and grazing land. The site is predominantly surrounded by similar cleared flat open pasture that is used for a variety of agricultural purposes.

1.10 Caves

Refer **Section 1.5** – Geohazards

1.11 Land use

The land upon which the proposed quarry site is located is owned by Lot 10 Burnda Road Pty Ltd and is contained within Allotment 9 and portion of Allotment 10, of Blanche in the area named Compton. Certificate of Title Volume 5317 Folio 438.

The current land use of the property is cleared pasture and stock grazing. The site is situated in a Primary Production Zone within the District Council of Grant council area.

The Tenement Holder of MC 4562 is GT Bobcat Pty Ltd

1.12 Proximity to infrastructure and housing

There are no residences situated close to the proposed quarry site. There are 4 residences located some distance from the site and their proximity is shown on the attached Site Locality Plan - Figure 1.

Distances of the 4 nearest residences to the quarry site boundary are as follows:

House 1 is 1070 metres from the boundary of MC 4562

House 2 is 580 “ “ “ “ “ “ “

House 3 is 1000 “ “ “ “ “ “ “

House 4 is 785 “ “ “ “ “ “ “

1.12 Proximity to infrastructure and housing (cont.)

Proposed periodic crushing campaigns will only generate minimal quarry truck movements to and from the site and will have no impact on existing local rural public road traffic movements.

Quarry materials will be trucked from the proposed quarry site via the site entry/exit on Burnda Road which connects to the sealed Carpenter Rocks Road situated approximately 2km south of the site and 2km north to the sealed Cafpirco Road.

An estimate of proposed quarry traffic is provided in **Section 2.5.1** – Access and roads.

There are no overhead electricity power lines located within the property.

The proposed quarry development will not be visually prominent beyond the site. Refer also **Section 2.5.4** – Visual screening and **Section 7** – Maps and Plans – Site Location Plan – Figure 1A, Site Survey Plan – Figure 1B, Proposed Quarry Development Plan – Figured 1C and Conceptual Mining & Rehabilitation Stages Plan – Figure 1D.

1.13 Exempt land

There are no residences within 400 metres of MC 4562.

1.14 Amenity

The proposed quarry is accessed via an existing gate that enters the site off Burnda Road. The proposed quarry development will be excavated below natural surface level and will not be visually prominent from beyond the site. Refer also **Section 2.5.4** – Visual screening.

1.15 Air quality

Adjacent pasture and grazing paddocks are a potential source of local dust during summer months together with an existing quarry that is located approximately 400 metres west of the site boundary fronting Burnda Road. However, the rural location of the proposed quarry site, its orientation and distance from residences ensures this quarry operation will cause minimal disturbance to any residents in the event of any dust emissions.

MC 4562 is located on a deposit of Gambier Limestone and dolomite that can be crushed to a dust under the tracks and tyres of heavy earthmoving equipment. In the event of fugitive dust emissions occurring a water-spray truck can be brought to site to dampen down heavily trafficked areas. However, it should be noted that the limestone dust at the site will dissolve in rainwater, which upon evaporation, precipitates to form a cemented crust up to 3mm thick. This surface crust will cover everything including stockpiles, the quarry pit floor and exposed working faces, preventing dust emissions whilst the crust is preserved.

Potential dust generation sources at the site include;

- Topsoil and/or overburden stripping, carting and stockpiling
- Excavation of limestone and dolomite by dozer/excavator
- Crushing and stockpiling of limestone and dolomite rubble
- Mobile jaw crusher
- Loading quarry products with front-end loader
- Truck movements within quarry and on site access track
- Backfilling and spreading of overburden and topsoil during quarry development and rehabilitation

In the unlikely event that excessive fugitive dust may become a problem during dry summer periods, the operator is able to arrange for a water cart to be brought to site to suppress dust on the site access road, loading and processing areas and stockpiles. The water cart, if needed, will source water from outside the quarry site.

1.16 Noise

Quarry trucks entering and exiting the site together with the occasional use of earthmoving equipment and a small mobile crushing and screening plant will create some noise. However, in the normal course of events this noise is mostly generated within the physical confines of the quarry which may be up to 20m below the natural surface level of the surrounding topography.

Local noise contributions also come from farm machinery used on surrounding pasture/stock grazing areas.

1.17 Heritage (Aboriginal, European, Geological)

There are no known sites of Aboriginal or European heritage significance within MC 4562.

A search of the AAR central archives, which include the Register of Aboriginal Sites and Objects, did not contain any records for Aboriginal heritage within the search area of the proposed new quarry site.

In accordance with Section 20 of the *Aboriginal Heritage Act 1998* any suspected Aboriginal heritage discovered at the site will be reported to the Minister (through AAR) as soon as practicable.

There are no geological monuments or geological features of significance at this site.

1.18 Proximity to conservation areas

The Mount Gambier Blue Lake water reserve and recreation park is located approx. 8km east of MC 4562. Some 18km north/northeast of the proposed quarry site lies the Telford Scrub Conservation Park. The Tantanoola Caves Conservation Park is approx. 21km northwest of the pit and the Ewen Ponds Conservation Park approx. 30km south, and Penambol Conservation Park is approx. 25km SSE . Refer **Section 7** – Maps and Plans Proximity map - conservation areas – Figure 5.

1.19 Pre-existing site contamination and previous disturbance

Historically, the proposed quarry site has only been previously disturbed when originally cleared of native vegetation for agricultural use i.e. cropping and stock grazing.

There is no other known pre-existing contamination or previous disturbance within the proposed quarry site MC 4562.

2. DESCRIPTION OF THE PROPOSED OPERATIONS

2.1 General description

Proposed quarrying of Mineral Lease MC 4562 will be on a campaign basis and comprise an open cut benched quarry with up to two faces. The proposed quarry will be developed to a pit floor depth of approximately 20 metres.

Quarry development will be in six stages commencing with Stage 1 centrally located within the western half of the tenement with site access from Burnda Road. Stages 2 and 3 will extend firstly in a northerly then southerly direction respectively. Stage 4 will extend from Stage 1 in an easterly direction with Stage 5 extending the quarry in a northerly direction and the final stage, Stage 6, extending in a southerly direction from Stage 4.

The aforementioned order of quarry development stages may need to be altered due to unforeseen changes in the geological location of either the limestone or dolomite deposits and differing market demand volumes for either of these quarry materials.

The depth of mining within all quarry development stages of MC 4562 will not extend beyond a minimum final pit floor level of 2m above groundwater.

Refer **Section 7** – Maps and Plans – Proposed Quarry Development Plan – Figure 1C & Typical Cross Sections – Figure 2.

2.2 Resource and products

2.2.1 Resource

Extractive Minerals – Limestone and dolomite. Refer **Section 1.4** – Geological environment.

There has been no detailed geological survey of the MC 4562 site. An estimation of the mineable reserves of available limestone and dolomite at the site is 9.87 million tonnes based on the following calculation:

Approx. 36 ha x 20m depth = 7,200,000m3
Less allowance of 400mm Av. depth of topsoil – say 144,000m3 = 7,056,000m3
7,056,000m3 x 1.4t/m3 (in-situ bulk density) = **approx. 9.87M tonnes**

2.2.2 Production rate and products

The quarried resource will be used for the production of crushed rubble and roadbase materials with sales volumes predominantly going to local construction works.

GT Bobcat Pty Ltd estimates an annual production rate of approximately 15-20,000 tonnes per annum. However, quarry production at the site is very much dependent upon local market demand for construction materials.

The proposed quarry is estimated to have a life in excess of 100 years. However, it should be noted that this figure is an estimate and is reliant upon market demand and the volume of local construction works.

GT Bobcat Pty Ltd has indicated that it would also like to be able to produce an agricultural lime (aglime) product from the quarry if sufficient market demand exists.

2.3 Quarrying activities

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

The proposed quarrying method will comprise an open cut benched quarry with up to two faces developed to a maximum depth of approximately 20 metres. The tenement will be divided into six stages each of similar dimensions (approx. 6 hectares).

It is understood that the limestone material contained within MC 4562 can be raised by mechanical equipment (e.g. excavator and/or bulldozer) and will not require blasting. However, the dolomite deposit (located towards the northern half of the tenement may require drill and blast. The raised materials will be used to produce a range of quarry products suitable for civil construction works including local roads infrastructure.

A suitably sized bulldozer or excavator will be used to extract the in-situ limestone and dolomite deposit from within the proposed quarry development area. A front end loader will also be used at the site for stockpiling and truck loading purposes.

Whilst GT Bobcat Pty Ltd anticipate that no blasting will be required to extract the limestone and dolomite from the site recent drilling for a groundwater bore on an adjacent property encountered very hard rock at depth therefore some blasting may be necessary as the quarry develops at depth. Any necessary blasting will all be conducted in accordance with Australian Standard AS 2187.2 – 2006.

If blasting does become necessary it is expected that only small blast patterns will be required for production purposes. Blast holes will typically be 89mm diameter and drilled up to approx. 10-12 metres deep. Each hole will typically be loaded with ‘Amex’ explosive and capped with aggregate stemming. Stemming has been found to reduce air-blast overpressure by giving superior charge confinement.

Refer **Section 2.3.4** – Use of explosives

2.3.1 Type or types of proposed quarry operation to be carried out (cont.)

Quarrying will be established on a campaign basis using mobile plant and equipment.

The frequency of crushing campaigns is subject to market demand for materials from the site and campaigns may extend for several weeks at a time.

Refer **Section 7** – Maps and Plans – Proposed Quarry Development Plan – Figure 1C, Conceptual Mining & Rehabilitation Stages Plan – Figure 1D and Typical Cross Sections – Figure 2.

2.3.2 Sequence of quarrying and progressive rehabilitation

Quarry Development Stages

It is not possible to determine whether the dolomite resource, situated to the north of the tenement including the north-western part of Stage 1 and the north-eastern part of Stage 4, together with the northern development of Stages 2 & 6, will reach their respective terminal faces ahead of the limestone resource located to the south of the tenement (including the south-western part of Stage 1, the south-eastern part of Stage 4 together with the southern development of Stages 3 & 6. Only the future market demand and sales volumes for each of the aforementioned materials will determine which parts will reach final rehabilitation first.

The boundary between the dolomite resource located to the north of the tenement and the limestone resource located to the south of the site cannot be clearly identified. Similarly, the rate of demand and extraction for either material is indeterminate as is the rate at which each stage of quarry development reaches a terminal face ready for rehabilitation. For this reason a six stage quarry development is proposed.

To minimise the total exposed area of the quarry, terminal faces will be established and rehabilitated as soon as practicable.

Stage 1 quarry development will commence with the construction of a site access road entering from Burnda Road into the central western area of the tenement.

Stage 1 will also include opening up the central western area of the site to provide access to quarry both the dolomite resource situated to the north and the limestone resource located to the south of the tenement. Topsoil and subsoil/overburden stripped during the development of Stage 1 will be used to construct a perimeter screening mound and safety bund within the western and northern roadside site boundaries. Any remaining topsoil and subsoil/overburden will be temporarily stored on undisturbed adjacent areas of the tenement for later progressive rehabilitation use.

Subsequent stripping of topsoil and subsoil/overburden required as a part of each stage of future quarry development will only occur when necessary to meet production requirements. Topsoil and subsoil/overburden will be stockpiled separately in low storage mounds up to 2 metres high on undisturbed areas within the tenement for future progressive rehabilitation use.

Stage 2 will see the extension of quarry development in a northerly direction concurrently with the southerly development of Stage 3.

Upon the near completion of Stages 2 & 3 and prior to the commencement of Stage 4 quarry development, the northern and western terminal faces of Stage 2 will be progressively rehabilitated. Similarly, the southern and western terminal faces of Stage 3 will also be progressively rehabilitated. The final rehabilitation of Stages 2 & 3 will utilise stockpiled topsoil and subsoil/overburden previously set aside for this purpose.

Stage 4 will extend the central area of the quarry in an easterly direction (from Stage 1) ahead of further extensions into Stages 5 and 6, north and south of Stage 4 respectively. As Stages 4, 5 and 6 near completion the eastern, northern and southern terminal faces of each of these stages will be progressively rehabilitated using stockpiled topsoil and subsoil/overburden previously set aside for this purpose.

2.3.2 Sequence of quarrying and progressive rehabilitation (cont.)

Refer **Section 7** – Maps and Plans – Proposed Quarry Development Plan – Figure 1C, Conceptual Mining & Rehabilitation Stages Plan – Figure 1D and Typical Cross Sections – Figure 2.

Progressive Rehabilitation Milestones

The main rehabilitation objectives are:

- Wherever practicable, worked out areas of the quarry will be progressively rehabilitated following each crushing campaign commencing with terminal perimeter quarry faces as they become available.
- Terminal perimeter quarry faces will be battered in situ to form stable final slopes of 1 in 3 gradient or less. Final battered in situ slopes will be spread with available topsoil and subsoil/overburden from adjacent stockpiles previously set-aside for this purpose.

Milestone 1

Following Stage 1 opening up of the central western area of the site to access quarrying of both the dolomite resource situated to the north and the limestone resource located to the south, all stripped topsoil and subsoil/overburden will be used to construct a perimeter screening mound and safety bund around the western and northern roadside site boundaries of the mining tenement. Any remaining topsoil and subsoil/overburden will be temporarily stored on undisturbed adjacent areas of the tenement for later progressive rehabilitation of terminal perimeter quarry faces.

Milestone 2

With the quarry development of Stage 2 extending in a northerly direction from Stage 1 concurrently with the southerly quarry development of Stage 3, terminal perimeter quarry faces will be progressively battered in situ to form a final slope at 1 in 3 gradient or less to rehabilitate the northern and western boundaries of Stage 2 and the southern and western boundaries of Stage 3. Final battered in situ slopes will be spread with available topsoil and subsoil/overburden from adjacent stockpiles previously set-aside for this purpose.

Milestone 3

With the extension of quarry development in an easterly direction from Stage 1 into Stage 4 later followed by the northerly development of Stage 5 concurrently with the southerly development of Stage 6, terminal perimeter quarry faces will be progressively battered in situ to form a final slope at 1 in 3 gradient or less to rehabilitate the eastern boundaries of Stages 4, 5 & 6, the northern boundary of Stage 5 and the southern boundary of Stage 6. Final battered in situ slopes will be spread with available topsoil and subsoil/overburden from adjacent stockpiles previously set-aside for this purpose.

Milestone 4

The final stage of rehabilitation will occur on completion of quarry development Stages 2 – 6. Quarrying operations will be finalised within the Stage 1 area of the site and include battering of in situ terminal faces to form a final slope at 1 in 3 gradient or less to match in with existing terminal perimeter quarry faces along the western boundary of the site. Final battered in situ slopes will be spread with remaining topsoil and subsoil/overburden previously stockpiled for this purpose.

The site entry gate and access track down to the quarry floor are to remain for future use by the landowner.

Rehabilitation Completion

Rehabilitation completion of terminal quarry faces will involve the progressive battering of in situ terminal faces to form final slopes of 1 in 3 gradient or less. Battered final slopes will be

2.3.2 Sequence of quarrying and progressive rehabilitation (cont.)

spread with topsoil and subsoil/overburden from adjacent stockpiles previously set-aside for this purpose. The spread topsoil and subsoil/overburden will be compacted using a bulldozer tracking over the material before being graded and contoured to final level.

Following completion of earthworks the prepared area will be sown with surface stabilising pasture grasses subject to suitable seasonal sowing conditions.

***NOTE:** The rate of terminal quarry rehabilitation is very much dependent upon the rate of quarry development and market demand for quarry materials. It is therefore not possible to provide detailed mining and rehabilitation staged plans for the first 10 years of mining (or any other set period of time). An additional consideration is the fact that this quarry site will be producing two different quarry commodities (dolomite and limestone) extracted from different parts of the tenement adding yet another unknown variable. Consequently, only conceptual quarry development and rehabilitation plans can be provided. Refer **Section 7** – Maps and Plans – Conceptual Mine Closure/Final Rehabilitation Plans – Figure 4, Conceptual Mining & Rehabilitation Stages Plan – Figure 1D and Typical Cross Sections – Figure 2.

2.3.3 Stockpiles

2.3.3.1 Topsoil and subsoil stockpiles

Topsoil and subsoil/overburden will be progressively stripped as each stage (1-6) is developed.

Intended for future rehabilitation use, stripped topsoil and subsoil/overburden will be stockpiled separately in low storage mounds up to 2 metres high to ensure soil biology is not sterilized. The stripped topsoil and subsoil/ overburden stockpiles will be placed on adjacent areas outside of the quarry development stage currently being worked.

It is not possible to estimate the quantity of topsoil and subsoil/overburden available as the depth of this material is variable across the site.

2.3.3.2 Product stockpile

Following each crushing campaign only minimal stockpiles of saleable quarry products will remain. In the event that any product is left over it will be placed within the quarry pit floor area of the currently active quarry development stage.

2.3.4 Use of explosives

Whilst GT Bobcat Pty Ltd anticipate that no blasting will be required to extract the limestone and dolomite from the site some blasting may be necessary as the quarry is developed deeper.

If blasting does become necessary it is expected that only small blast patterns will be required to maintain production output. Typical blast patterns will be 2m x 2m using 89mm diameter blast holes and drilled up to approx. 10-12 metres deep. Each hole will typically be loaded with ‘Amex’ explosive and capped with aggregate stemming. Stemming has been found to reduce air-blast overpressure by giving superior charge confinement.

Quarrying operations will be carried out on a campaign basis and influenced by market demand for product from the site. Therefore blasting, if necessary, will be intermittent and only undertaken on weekdays with blasts initiated during normal operating hours (usually around midday) and only after all neighbors have been notified via telephone.

Only experienced licensed contractors will be engaged to conduct drilling and blasting at the site. All blasting will be in accordance with Australian Standard AS 2187.2 – 2006.

2.3.4 Use of explosives (cont.)

No explosives will be kept on the quarry premises.

Full blast reports will be stored and filed at GT Bobcat Pty Ltd head office.

Complaints

GT Bobcat Pty Ltd will have a blasting procedure in place that has addressed communication with neighbors.

If blasting complaints are received all details and actions will be recorded in a Site Operator Incident Report Book**.**
Refer also **Section 4** – Assessment of Environmental Impacts

2.3.5 Modes and hours of operation

Quarrying operations will be on a campaign basis. The frequency of crushing campaigns is dependent upon market demand for quarry materials. Periodical quarry operating hours will be 6.00am to 6.00pm Monday to Saturday.

Determining factors for initiating and ceasing a crushing campaign are dependent upon seasonal weather conditions and required production volumes.

2.4 Crushing, processing and product transport

2.4.1 Fixed plant

There will not be any fixed plant at the site.

Mobile crushing plant will be used at the site to conduct campaign crushing. Typically, mobile plant will comprise a mobile crushing/screening plant, an excavator and a front-end-loader.

2.4.2 Hours of operation

The frequency of quarrying operations and product transport activities is dependent upon market demand for quarry materials. Proposed quarrying operations are likely to comprise periodic crushing campaigns which will only generate minimal quarry truck movements to and from the site and have little or no impact on existing local rural public road traffic movements. Proposed hours of operation will be 6.00am to 6.00pm Monday to Saturday.

2.4.3 Processing wastes

No processing wastes will be generated or disposed of at the site.

2.4.4 Industrial and domestic wastes

No industrial or domestic wastes will be produced or brought into the site.

Any repairs required to mobile plant during crushing campaigns will be carried out by licensed contractors and all liquid and solid waste materials will be removed from site and suitably recycled or disposed of to a licensed waste facility. No oil or fuel will be stored on site.

2.5 Supporting surface infrastructure

2.5.1 Access and roads

The proposed new quarry site is located approximately 8 kilometres west of Mount Gambier via Carpenter Rocks Road and Burnda Road.

The proposed new quarry site entry/exit is situated off Burnda Road and has good clear sight-lines onto Burnda Road in both directions.

2.5.1 Access and roads (cont.)

Periodic crushing campaigns will generate minimal quarry truck movements to and from the site and will have little impact on the low volume local rural road traffic that uses the well maintained but unsealed Burnda Road.

It should be noted that there are 4 other existing quarries operating within close proximity of this proposed quarry site all of which access Burnda Road.
Refer also **Section 1.12** - Proximity to infrastructure and housing.

Quarry establishment will include the construction of a new site access track within the tenement. With periodic crushing campaigns and anticipated low volumes of quarry trucks to and from the site, fugitive dust is not expected to be a problem.

Quarry materials will be trucked from the site via the Burnda Road site exit generally in single tandem tippers (Av.12t payload) and tandem truck and trailers (Av. 40t payload). Transport routes from the quarry will head either north on Burnda Road to Cafpirco Road or south to Carpenter Rocks Road.

Crushing campaigns are typically intermittent and dependent upon market demand. Estimated average truck movements per operational day is approximately 2-4. During crushing campaigns 6-10 trucks per operational day may be used at say 30 minute rotations. This could equate to a potential maximum of up to 24 vehicles per day or approximately 2 per hour but is dependent upon the cartage distance to the job site.

Refer **Section 7** – Maps and Plans – Site Aerial Photo – Figure 3, Proposed Quarry Development Plan – Figure 1C.

2.5.2 Accommodation and offices

There is not/will not be any buildings or other structures at the quarry site.

2.5.3 Public services and utilities used by the operation

There is no existing surface infrastructure, public services or utilities available at the site of the proposed quarry. Mobile phone coverage is available.

2.5.4 Visual screening

The proposed new quarry site is located in a sparsely populated rural area. The proposed quarry site entrance is located approx. 350 metres south of the intersection of Burnda Road and Mitchell Road. The surrounding topography generally comprises a gently undulating to flat plain.

In Stage 1 quarry development a perimeter screening mound and safety bund will be constructed within the western and northern roadside site boundaries.

2.5.5 Fuel and chemical storage

No fuel or chemicals will be stored at the proposed quarry site.

2.5.6 Site security

The site entrance gate will be kept closed when the quarry is not operating.

Existing perimeter stock fencing around the landowner’s property provides adequate security and will be regularly inspected by the landowner and tenement holder.

2.5.7 Erosion, sediment and silt control

No silt will be produced at the proposed quarry site as there is no requirement for washing of extracted materials and no available water. No silt retention dams are required.

2.5.7 Erosion, sediment and silt control (cont.)

Average annual rainfall is quite high but the proposed quarry workings will drain internally with rainfall run-off captured and contained within the quarry pit floor where it will soak away.

There are no naturally occurring creeks or watercourses within close proximity of the proposed quarry site.

2.6 Vegetation clearance

The site was previously cleared of all native vegetation for agricultural pasture and stock grazing purposes. As none exists, no native vegetation will be disturbed by the proposed quarry development.

2.7 Site water management

No mains water service is available at the proposed quarry site.

Water is not required for the processing of extracted materials at the site.

In the unlikely event that excessive fugitive dust may become a problem during dry summer periods, the quarry operator is able to arrange for a water cart to be brought to site to suppress dust on the site access road, loading and processing areas and stockpiles. The water cart, if needed, will source water from outside the quarry site.

2.8 Description of quarry site at completion

Wherever practicable on the completion of each stage of quarrying (1-6), worked out areas of the quarry, especially terminal perimeter quarry faces as they become available, will be progressively rehabilitated following each crushing campaign.

Terminal perimeter quarry faces will be battered in situ to form stable final slopes of 1 in 3 gradient or less. Final battered slopes will be spread with available topsoil and subsoil/overburden from adjacent stockpiles previously set-aside for this purpose.

The spread topsoil and subsoil/overburden will be compacted using a bulldozer tracking over the material before being graded and contoured to final level. Following completion of earthworks the prepared area will be sown with surface stabilising pasture grasses subject to suitable seasonal sowing conditions.

The quarry site at completion will comprise a final rehabilitated landform that is physically safe and stable and lower than the surrounding undisturbed natural surface. The rehabilitated quarry will drain internally within the former pit floor and return the site to its former land use of pasture cropping and stock grazing.

There will be no quarrying infrastructure left on site.

Refer **Section 7** –Conceptual Mine Closure/Final Rehabilitation Plan – Figure 4.

2.9 Description of workforce and local procurement

- There will be no full-time employee positions working at the proposed quarry site. Local employees already working for GT Bobcat Pty Ltd will make up the required workforce.
- Existing employees working for GT Bobcat Pty Ltd reside in the local community.
- Although currently there are no vacancies available GT Bobcat Pty Ltd would consider assisting Indigenous or local employment at the quarry should such vacancies become available in the future.
- In the event that GT Bobcat Pty Ltd engages any new employees or potential employees GT Bobcat Pty Ltd would provide relevant workplace training.
- There is no immediate requirement for the creation of new positions at GT Bobcat Pty Ltd therefore no timeline can be specified.
- GT Bobcat Pty Ltd already utilises and supports local businesses and the procurement of local goods and services.

2.9 Description of workforce and local procurement (cont.)

Proposed periodic crushing campaigns will provide employment opportunities for locally contracted mobile crushing and screening plant operators together with quarry product haulage truck operators.

Sales of quarry products from the quarry site will provide materials for use in local construction projects and support the local building/construction industry.

The quarry will supply materials for use by the local community for local infrastructure projects and support the economic benefit derived from periodic local employment opportunities.

The landowner will have ready access to the supply of construction materials for use on his property at cost.

The proposed quarry will contribute to state government royalty payments and other government taxes as well as contribute to the local economy.

It is envisaged that on completion of quarrying and final rehabilitation the return of the land to its former pasture and grazing land use will provide a safe, stable landform that yields good quality pasture growth.

Following mine completion and the return of the site to pasture cropping and stock grazing the local rural landscape amenity will be restored.

3.0 CONSULTATION

The nearest town is Mount Gambier which is located approximately 8 kilometres west of the proposed new quarry site. The site landowners have been consulted and indicated they have no objection to the proposed quarry development. GT Bobcat Pty Ltd has obtained a signed Waiver of Exemption agreement from the site landowners. This Waiver of Exemption was submitted to DEM at the time of Mineral Claim application.

Given the rural location of the proposed new quarry development is not close to any residence and the existing low volume of vehicles using Burnda Road, it is concluded that the proposed new quarrying operations are unlikely to cause any harm, nuisance or impact to any individual or the local environment.

4. MANAGEMENT OF ENVIRONMENTAL IMPACTS

Assessment of Environmental Impacts

The following environmental elements have been identified as relevant to this mining proposal:

- Public health and safety
- Heritage
- Weeds, pests and plant pathogens
- Soil
- Waste
- Groundwater
- Surface water
- Amenity
- Blasting
- Air Quality
- Noise
- Protection of Third Party Property
- Traffic
- Fauna

4.1 Assessment of Environmental Impacts - Public health and safety

4.1.1 Elements of the environment

Environmental Element	Views of affected parties	Applicable legislation or standards	Environmental Receptor
Public health and safety	Safety and protection of workers and the public on and around the site	1) *Mining Act 1971 and Regulations* 2) *Mines and Works Inspection Act 1920 and Regulations*	Injury to workers and/or public on and around the site

4.1.2 Potential impact events

ID	Source	Pathway	Receptor	Description of uncertainty	Confirmation of impact events	Description of likely impact
P1	Quarrying Operations	Excavation of ground	Injury to workers and/or public on and around the site	Whether adequate safety fencing exists	A source, pathway and receptor exist, there is a potential for proposed quarry operations to impact upon the environmental element.	Personal injury due to unrestricted site access
P2	Mine completion	None	As above	As above	There is no pathway. A credible impact does not exist.	n/a

4.1.3 Control measures

The following control strategies will apply:

- All contractors & employees will be inducted with regards to public health and safety.
- Tenement holder/Operator and all contractors and employees will ensure all site boundary fencing is in good order and that gates are left closed at all times when the quarry site is not operating.
- Mining operations will be progressively rehabilitated to provide a practical and achievable rehabilitation plan that is safe, stable and consistent with the proposed final land use.
- Following mine completion all terminal quarry faces are either backfilled or battered to form final rehabilitated slopes to a 1:3 ratio or alternative final batter angle approved by DEM.

4.1.4 Description of uncertainty

A survey of existing site fencing indicates that it is in good condition and is adequately safe.

4.1.5 Statement of proposed environmental outcome (Operational)

No public injuries and/or deaths resulting from unauthorised or unrestricted entry to the site that could have been reasonably prevented by the Tenement Holder/Operator.

4.1.6 Draft measurement criteria

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

4.1.7 Statement of proposed environmental outcome (Post Completion)

The tenement holder must demonstrate that post completion, the risks to the health and safety of the public so far as they may be affected by mining operations, are as low as reasonably practicable.

4.1.8 Draft measurement criteria

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

4.2 Assessment of Environmental Impacts - Heritage

4.2.1 Elements of the environment

Environmental Element	Views of affected parties	Applicable legislation or standards	Environmental Receptor
Heritage	Local Aboriginal people may hold sacred sites within this area (applicable to the whole surrounding land not just the quarry site)	1) *Aboriginal Heritage Act 1988* 2) *Heritage Places Act 1993*	Undiscovered heritage artefacts, objects, remains or sites of significance. Non-Aboriginal Heritage sites or structures.

4.2.2 Potential impact events

ID	Source	Pathway	Receptor	Description of uncertainty	Confirmation of impact events	Description of likely impact
H1	Quarrying Operations	Excavation of ground	Undiscovered Aboriginal or non-Aboriginal / geological heritage artefacts, objects, remains or sites of significance	Whether heritage artefacts, objects, remains or sites of significance exist.	A source, pathway and receptor exist, there is a potential for operations to impact upon heritage.	Excavation near a heritage artefact, object, remain or site of significance causes damage to the heritage values.
H2	Mine completion	None	As above	As above	There is no pathway. A credible impact does not exist.	n/a

4.2.3 Control measures

The following control strategies will apply:

- All contractors and employees will be inducted with regards to heritage requirements.
- Tenement holder/Operator and all contractors and employees will carefully examine areas as they are excavated to identify artefacts, objects or sites of potential heritage significance.
- Upon discovery of an artefact, object or site all work will cease until relevant authorities are notified and approval to recommence quarrying operations is authorised.

4.2.4 Description of uncertainty

A search of the DPC Register of Aboriginal Sites and Objects has been completed and an AAR letter confirms there are no entries for Aboriginal sites at this location.

A search of the SA Heritage Places Database has been completed and confirms there are no non-aboriginal heritage and/or geological monuments present within the Tenement.

4.2.5 Statement of proposed environmental outcome

No damage, disturbance or interference to Aboriginal or non-Aboriginal heritage sites, objects or remains unless it is authorised under the relevant legislation.

4.2.6 Draft measurement criteria

Records demonstrate that upon discovery within the mining tenement of any possible Aboriginal or non-Aboriginal sites of significance, objects or remains, that work ceased until the relevant authorities were notified and work recommenced only after authorisation was received.

4.3 Assessment of Environmental Impacts – Weeds, pests and plant pathogens

4.3.1 Elements of the environment

Environmental Element	Views of affected parties	Applicable legislation or standards	Environmental Receptor
Weeds, pests and plant pathogens	The spread or introduction of declared weeds, pests or plant pathogens	*Landscapes South Australia Act 2019*	1) Agricultural pasture adjacent to the mining tenement.

4.3.2 Potential impact events

ID	Source	Pathway	Receptor	Description of uncertainty	Confirmation of impact events	Description of likely impact
W1	Quarrying Operations	Likely sources of infestation may come from grazing stock, vehicles and machinery brought to site.	1. Agricultural pasture adjacent to the mining tenement.	Whether any threat to the local environment exists.	A source, pathway and receptor exist, there is a potential for operations to impact upon weeds, pests and plant pathogens.	Spread or introduction of declared weeds, pests or plant pathogens.
W2	Mine completion	As above	As above	As above	There is no pathway. A credible impact does not exist.	n/a

4.3.3 Control measures

The following control strategies will apply:

- Landowner has indicated that some typical pasture weeds may be present at the site and has implemented a weed management program to control and keep controlled any declared weeds.
- Landowner and Tenement holder/Operator conducts quarterly inspections of the site and determines an appropriate weed control management regime.
- Weed and pest control meets with NRM requirements (or equivalent authorised officer appointed by the relevant regional landscape board under the *Landscape South Australia Act 2019*).
- Only clean machinery enters the site.

4.3.4 Description of uncertainty

Operator will maintain a regular weed and pest management program to control and keep controlled declared weeds and pests.

4.3.5 Statement of proposed environmental outcome

No introduction of new species of weeds, pests (including feral animals) or plant pathogens, nor sustained increase in abundance of existing weed or pest species on the quarry site compared to adjoining land.

4.3.6 Draft measurement criteria

Quarterly site inspections by the landowner demonstrates no spread or introduction of new or declared weeds, pests or plant pathogens and no increase in abundance of existing weeds and or pests when compared to adjoining land.
Operator to maintain a 'Site Report Book' as a record to demonstrate that quarterly site inspections were completed.

4.4 Assessment of Environmental Impacts - Soil

4.4.1 Elements of the environment

Environmental Element	Views of affected parties	Applicable legislation or standards	Environmental Receptor
Soil	Signs of erosion (formation of rill, gullies or other evidence of soil loss).	*Landscapes South Australia Act 2019*	Land adjacent to the mining tenement.

4.4.2 Potential impact events

ID	Source	Pathway	Receptor	Description of uncertainty	Confirmation of impact events	Description of likely impact
S1	Quarrying Operations	Stripped surface soil and stockpiles	Land adjacent to the mining tenement.	Whether there is any need for soil management controls at the site.	A source, pathway and receptor exist, there is a potential for operations to impact upon soil.	Run-off from erosion of disturbed soil.
S2	Mine completion	None	As above	As above	There is no pathway. A credible impact does not exist.	None

4.4.3 Control measures

The following control strategies will apply:

- Surface soil will only be stripped prior to quarry crushing campaigns and stockpiled in low mounds no greater than 2m high to ensure soil biology is not sterilized for use in quarry rehabilitation.
- Landowner and Tenement holder/Operator regularly inspects soil stockpiles to ensure no signs of erosion (formation of rill, gullies or other evidence of soil loss) and vegetation cover is established.
- Mining operations will be progressively rehabilitated to provide a practical and achievable rehabilitation plan that is safe, stable and consistent with the proposed final land use.
- Following mine completion all terminal quarry faces are either backfilled or form final rehabilitated slopes battered to a 1:3 ratio or alternative final batter angle approved by DEM.
- Final rehabilitated surfaces will be available for sowing pasture crops or other suitable surface stabilising agricultural crops as determined by the landowner.
- Machinery will only be refuelled on a hardstand area.
- Spills that occur will be remediated through timely soil removal and appropriately disposed of in accordance with EPA Guideline 378/13 for the disposal of used hydrocarbon absorbent materials.

4.4.4 Description of uncertainty

No soil survey of the existing site has been undertaken so it is unclear whether there is any likelihood for soil management controls at the site.

4.4.5 Statement of proposed environmental outcome

The existing (pre-mining) soil quantity and quality is maintained to ensure availability and successful re-use for quarry rehabilitation.

4.4.6 Draft measurement criteria

Annual inspection records of soil stockpiles will show all stockpiles to have:
- established vegetative cover
- no signs of erosion (formation of rill, gullies or other evidence of soil loss)
- topsoil stockpiles will be no higher than 2 metres.

Maintain a photo comparison record of stockpiles.

4.5 Assessment of Environmental Impacts - Waste

4.5.1 Elements of the environment

Environmental Element	Views of affected parties	Applicable legislation or standards	Environmental Receptor
Waste	Protection of the surrounding environment	*Environment Protection Act 1993*	Land adjacent to the mining tenement.

4.5.2 Potential impact events

ID	Source	Pathway	Receptor	Description of uncertainty	Confirmation of impact events	Description of likely impact
R1	Quarrying Operations	Ground disturbed by quarrying	Land adjacent to the mining tenement.	Whether any waste will be produced or brought to the site.	A source, pathway and receptor exist, there is a potential for operational waste to impact the environment.	Contaminated land
R2	Mine completion	None	As above	As above	There is no pathway. A credible impact does not exist.	n/a

4.5.3 Control measures

The following control strategies will apply:

- No waste will be received on the tenement.
- Site management procedures will include the exclusion and/or removal of all processing, industrial or domestic waste from the quarry site (MC 4562).
- Any general domestic 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.
- Operator will take all reasonable and practicable measures to prevent or minimise environmental harm.

4.5.4 Description of uncertainty

There is no perceived likelihood of waste being produced or brought to site, so it is unclear whether this represents any risk.

4.5.5 Statement of proposed environmental outcome

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

4.5.6 Draft measurement criteria

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

4.6 Assessment of Environmental Impacts - Groundwater

4.6.1 Elements of the environment

Environmental Element	Views of affected parties	Applicable legislation or standards	Environmental Receptor
Public health and safety	Protection of the local groundwater	*Landscapes South Australia Act 2019* *DEWNR (2019) Water Allocation Plan for the Lower Limestone Coast PWA.*	Local groundwater

4.6.2 Potential impact events

ID	Source	Pathway	Receptor	Description of uncertainty	Confirmation of impact events	Description of likely impact
G1	Quarrying Operations	Excavation of ground	Local groundwater	Whether any threat to the local groundwater exists.	A source, pathway and receptor exist, there is a potential for operations to impact upon local groundwater.	Contaminated groundwater.
G2	Mine completion	None	As above	As above	There is no pathway. A credible impact does not exist.	n/a

4.6.3 Control measures

The following control strategies will apply:

- Maintain a minimum buffer of 2 metres between the proposed final quarry pit floor development and groundwater level.
- No mining is undertaken within 2 metres of the estimated highest seasonal groundwater level.

4.6.4 Description of uncertainty

The proposed quarry development is located within the Lower Limestone Coast Prescribed Wells Area (PWA) but is not within a prescribed surface water area.

A local groundwater bore closest to the quarry (7022-11480) is located just east of the proposed quarry site on the eastern boundary of Allotment 10. This bore has a current standing water level (SWL) of 24.75 metres AHD. It is proposed that the quarry will be developed to a pit floor depth of approximately 20 metres.

4.6.4 Description of uncertainty (cont.)

The proposed quarry is unlikely to have an adverse impact on groundwater levels or on groundwater quality. Groundwater will not be extracted for use at the quarry site.

4.6.5 Statement of proposed environmental outcome

No adverse impact upon the quality and quantity of groundwater caused by quarrying operations to existing users including after mine completion.

4.6.6 Draft measurement criteria (Operational)

Monitoring records demonstrate that mining operations do not exceed the maximum depth of mining stated in **Section 1.6** – Groundwater, within this Mining Lease Proposal.

Prior to the commencement of quarrying obtain and record the groundwater level at the nearest groundwater bore No. 7022-11480 located just east of the proposed quarry site.

The groundwater level at the nearest groundwater bore No. 7022-11480 will be measured once a year in Spring and a record maintained in a Site Report Book.

4.6.7 Draft measurement criteria (mine completion)

Audit of rehabilitation activities on the tenement and survey undertaken by a suitably qualified person shows progressive and final rehabilitation has been completed in accordance with rehabilitation stated in **Section 2.3.2** – Sequence of quarrying and progressive rehabilitation, within this Mining Lease Proposal.

4.7 Assessment of Environmental Impacts – Surface water

4.7.1 Elements of the environment

Environmental Element	Views of affected parties	Applicable legislation or standards	Environmental Receptor
Surface water	Protection of the surrounding environment	1) *Landscapes South Australia Act 2019* 2) *Environment Protection Act 1993*	Land adjacent to the mining tenement.

4.7.2 Potential impact events

ID	Source	Pathway	Receptor	Description of uncertainty	Confirmation of impact events	Description of likely impact
A1	Quarrying Operations	Excavation of ground	Land adjacent to the mining tenement.	Whether any threat to the local environment exists.	A source, pathway and receptor exist, there is a potential for operations to impact upon the local environment.	Contaminated land.
A2	Mine completion	None	As above	As above	There is no pathway. A credible impact does not exist.	n/a

4.7.3 Control measures

The following control strategies will apply:

- Operator to ensure all quarry development continues to capture and contain all internal run-off.
- Visual inspections of site operations, pit and site boundaries confirms surface water flows are internally draining.
- In the unlikely event that any contaminated surface water captured and contained within the quarry floor might contaminate groundwater, the groundwater will be tested for compliance against relevant EPA contamination criteria with the date and elevation at which the water table was intersected.
- Machinery will only be refuelled on a hardstand area.
- Spills that occur will be remediated through timely soil removal and appropriately disposed of in accordance with EPA Guideline 378/13 for the disposal of used hydrocarbon absorbent materials.

Refer **Section 7** – Maps and Plans – Conceptual Mine Closure/Final Rehabilitation Plan – Figure 4.

4.7.4 Description of uncertainty

All rainfall run-off and surface water drainage within areas disturbed by the proposed quarry development will be directed into the excavated pit area where it will drain through the permeable quarry floor ensuring no discharge of stormwater run-off from disturbed quarry operations off-site.

Following mine completion the site will be rehabilitated to match the surrounding ground levels using topsoil, subsoil/overburden where available from the site.

There are no distinct creeks or drainage channels in the vicinity of the proposed quarry site.

No contaminated surface water will leave the quarry site and therefore this element does not represent any threat to the local environment.

4.7.5 Statement of proposed environmental outcome

No surface water contaminated as a result of mining operations leaves the site

4.7.6 Draft measurement criteria

Records of inspections prior to commencement of each stage of mining demonstrate that operations are occurring in accordance with the Conceptual Mine Closure/Final Rehabilitation Plan – Figure 4 (refer **Section 7** – Maps and Plans).
Records demonstrate that surface water diversions and road cambers have been established prior to the commencement of each stage of mining and all surface water from disturbed areas is directed into the pit floor.
Photographic records in the Site Report Book, following heavy rainfall events resulting in run-off demonstrate that surface water coming into contact with mining operations is retained within the tenement.

Refer **Section 7** – Maps and Plans – Conceptual Mine Closure/Final Rehabilitation Plan – Figure 4.

4.8 Assessment of Environmental Impacts – Amenity (including visual amenity)

4.8.1 Elements of the environment

Environmental Element	Views of affected parties	Applicable legislation or standards	Environmental Receptor
Amenity	Protection of the surrounding environment and external visual amenity	*Environment Protection Act 1993*	Land adjacent to the mining tenement.

4.8.2 Potential impact events

ID	Source	Pathway	Receptor	Description of uncertainty	Confirmation of impact events	Description of likely impact
A1	Quarrying Operations	Excavation of ground	Land adjacent to the mining tenement.	Whether any threat to the surrounding environment or external visual amenity exists.	A source, pathway and receptor exist, there is a potential for operations to impact upon the surrounding visual amenity e.g. dust	Visual impact, air quality i.e. dust arising from operation of earthmoving equipment, mobile crushing plant and truck movements. Noise and vibration
A2	Mine completion	None	As above	As above	There is no pathway. A credible impact does not exist.	n/a

4.8.3 Control measures

The following control strategies will apply:

- Operator to take all reasonable and practicable measures to avoid any impact upon the visual amenity of the site and the surrounding environment.
- Operator to ensure all terminal quarry faces are progressively rehabilitated.
- Operator to ensure the operational footprint is limited to a maximum of approx. 6ha of land at any one time.
- In the unlikely event that excessive fugitive dust may become a problem during dry summer periods, the landowner/operator will arrange for a water cart to be brought to site to suppress dust on the site access road, loading and processing areas and stockpiles.

Refer **Section 7** – Maps and Plans – Proposed Quarry Development Plan – Figure 1C & Conceptual Mine Closure/Final Rehabilitation Plan – Figure 4.

4.8.4 Description of uncertainty

Terminal faces of the quarry will be progressively rehabilitated and therefore this element does not represent any threat to the surrounding visual amenity or environment.
Noise and dust from quarry operations will be controlled to meet all regulatory standards.

Following mine completion the rehabilitated landform will be physically stable. Ecologically the quarry floor area will be returned to its current pastoral land use suitable for cropping and stock grazing.

4.8.5 Statement of proposed environmental outcome

No negative visual impacts to local landholders or public from quarrying operations.
Upon mine closure the rehabilitated quarry will blend in with the surrounding landscape with no impact on the visual amenity of the site.

The proposed quarry site is located in a sparsely populated rural location ensuring this quarry operation is unlikely to cause disturbance to any distant residents in the event of any noise, vibration or dust emissions.

The quarry development will largely be hidden from external view from Burnda Road and Mitchell Road by the proposed perimeter screening mound and safety bund constructed within the western and northern roadside site boundaries.

4.8.6 Draft measurement criteria (Operational)

All quarry workings are photographed annually from the Burnda Road and Mitchell Road site boundaries to demonstrate minimal visual impact resulting from quarrying operations and progressive rehabilitation has been completed in accordance with that stated in **Section 2.3.2** – Sequence of quarrying and progressive rehabilitation within this Mining Lease Proposal.

Photographic and other records demonstrate that mining operations have not unduly impacted upon the amenity of the site and the surrounding environment and that the Operator / Tenement Holder took all reasonable and practicable measures to avoid any such impacts.

Audit of rehabilitation activities on the tenement and survey undertaken by a suitably qualified person shows progressive and final rehabilitation has been completed in accordance with that stated in **Section 2.3.2** – Sequence of quarrying and progressive rehabilitation within this Mining Lease Proposal.

Maintain a record of all site improvements e.g. progressive rehabilitation in a 'Site Report Book.'

Refer **Section 7** – Maps and Plans – Proposed Quarry Development Plan – Figure 1C & Conceptual Mine Closure/Final Rehabilitation Plan – Figure 4.

4.8.7 Draft measurement criteria (mine completion)

Photographic and other records together with an independent audit by an appropriately qualified person prior to application of lease surrender confirms that final rehabilitation has been undertaken in accordance with that stated in **Section 2.3.2** - Sequence of quarrying and progressive rehabilitation within this Mining Lease Proposal.

4.9 Assessment of Environmental Impacts - Blasting

4.9.1 Elements of the environment

Environmental Element	Views of affected parties	Applicable legislation or standards	Environmental Receptor
Blasting	Safety and protection of workers and the public on and around the site	1) *Mining Act 1971 and Regulations* 2) *Mines and Works Inspection Act 1920 and Regulations* 3) *AS2187.2 – 2006*	Injury to workers and/or public on and around the site

4.9.2 Potential impact events

ID	Source	Pathway	Receptor	Description of uncertainty	Confirmation of impact events	Description of likely impact
P1	Quarrying blasting activities	Excavation of ground	Injury to workers and/or public, on and around the site	Whether adequate safe blasting procedures exist	A source, pathway and receptor exist, there is a potential for quarry blasting activities to impact upon the environmental element.	Personal injury or death
P2	Mine completion	None	None	None	There is no pathway. A credible impact does not exist.	n/a

4.9.3 Control measures

The following control strategies will apply:

- All contractors & employees will be inducted with regards to safe blasting procedures.
- All blasting will be monitored and compliant with AS2187.2 -2006
- All blasting operations will be designed and carried out by suitably licenced contractors
- Tenement holder/Operator, contractors and employees will ensure all site boundary fencing is in good order and site entry gates are kept closed when quarry blasting is in progress.

4.9.4 Description of uncertainty

A review of safe blasting procedures at the site indicates adequate safety measures are in place and are compliant with all regulatory requirements.

4.9.5 Statement of proposed environmental outcome (Operational)

No workers or public injuries and/or deaths resulting from the incorrect or unsafe use of explosives at the site that could have been reasonably prevented by the Tenement Holder/Operator.

4.9.6 Draft measurement criteria

Any blasting complaints are investigated to demonstrate compliance with Australian Standards (AS2187.2 – 2006). Any blasting complaint not resolved with the complainant within 48 hours is investigated by a suitably qualified independent third party within one calendar month (or other time as agreed with DEM Mining Regulation). All incidents involving injuries and/or deaths to workers or the public as a result of the incorrect or unsafe use of explosives at the site are recorded and investigated by a suitably qualified independent third party within one calendar month (or other time as agreed with DEM Mining Regulation) and the results of the investigation show that the worker or public injuries and/or deaths could not have been reasonably prevented by the Tenement Holder/Operator.

Operator to maintain a 'Site Report Book' to demonstrate that any blasting related complaints received were acknowledged within 48 hours and resolved with the complainant within 7 days (or other time as agreed with Mining Regulator).

In the event that a blasting complaint is not resolved the Operator will conduct blast monitoring at the sensitive receptor to demonstrate blasting complies with Australian Standards (AS2187.2) and the EPA Environment Protection (Noise) policy 2007.

4.10 Assessment of Environmental Impacts – Air Quality

4.10.1 Elements of the environment

Environmental Element	Views of affected parties	Applicable legislation or standards	Environmental Receptor
Air quality	Protection of the surrounding environment	1) *Environment Protection Act 1993 and EPA Environment Protection (Air Quality) Policy 2016* 2) *Landscapes South Australia Act 2019*	Nearest residence is 580m east of the mining tenement boundary

4.10.2 Potential impact events

ID	Source	Pathway	Receptor	Description of uncertainty	Confirmation of impact events	Description of likely impact
A1	Quarrying Operations	Excavation of ground and movement of quarry materials	Nearest residence is 580m east of the mining tenement boundary	Whether any threat to the local environment exists.	There is no pathway. A credible impact does not exist.	Air quality
A2	Mine completion	None	As above	As above	There is no pathway. A credible impact does not exist.	n/a

4.10.3 Control measures

The following control strategies will apply:

- Operator to take all reasonable and practicable measures to prevent or minimise environmental harm or nuisance impacts from air emissions and/or dust generated by quarry operations.
- In the unlikely event that water is required for dust control, a water cart can be brought to site if needed.
- In the event of extreme, hot, dry windy conditions causing large volumes of fugitive dust from mining operations (and not surrounding open farm paddocks), quarrying operations may be temporarily suspended until such conditions abate.

4.10.4 Description of uncertainty

Operator will take all reasonable and practicable measures to ensure minimal environmental harm or nuisance.

4.10.5 Statement of proposed environmental outcome

No public health and/or public nuisance impacts from air emissions and/or dust generated by quarry operations.

4.10.6 Draft measurement criteria

Operator to ensure compliance with all applicable regulatory air quality standards e.g.

- PM10 concentrations leaving the tenement are less than 50 µg/m3, when measured over a 24-hour period (midnight to midnight) as specified in the *Environment Protection (Air Quality) Policy 2016.*

- Dust deposition leaving the tenement does not exceed 4g/m_2/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.

Operator to maintain a ‘Site Report Book’ to demonstrate that any dust related complaints received were acknowledged within 48 hours and resolved with the complainant within 7 days (or other time as agreed with Mining Regulator).

An audit of site records demonstrates that mining operations have complied with minimum industry air quality standards and not unduly impacted upon the site and surrounding environment and that the Operator / Tenement Holder took all reasonable and practicable measures to avoid any nuisance caused by such impacts.

4.11 Assessment of Environmental Impacts – Noise

4.11.1 Elements of the environment

Environmental Element	Views of affected parties	Applicable legislation or standards	Environmental Receptor
Noise	Protection of the surrounding environment	1) *Environment Protection Act 1993* 2) *Environment Protection Act 1993 and EPA (Noise) Policy 2007.*	Nearest residence is 580m east of the mining tenement boundary

4.11.2 Potential impact events

ID	Source	Pathway	Receptor	Description of uncertainty	Confirmation of impact events	Description of likely impact
A1	Quarrying Operations	Excavation of ground and movement of quarry materials	Nearest residence is 580m east of the mining tenement boundary	Whether any threat to the local environment exists.	There is no pathway. A credible impact does not exist.	Noise
A2	Mine completion	None	As above	As above	There is no pathway. A credible impact does not exist.	n/a

4.11.3 Control measures

The following control strategies will apply:

- Operator to take all reasonable and practicable measures to avoid environmental harm or nuisance impacts from noise emissions resulting from quarry operations.
- Quarry blasting to have appropriate control measures and measurement criteria (vibration, airblast overpressure and fly rock) based on Australian Standard AS 2187.2 – 2006
- Operator to monitor prevailing wind conditions and delay any proposed blasting in the event that strong westerly winds may carry blast noise towards the nearest neighbour's residence.
- Blasting will only be undertaken on weekdays with blasts initiated around midday when required.
- The nearest residential neighbour will be notified by telephone on days of proposed blasting and advised of likely blast time.
- Operator to ensure compliance with all applicable regulatory noise standards.

4.11.4 Description of uncertainty

Operator will take all reasonable and practicable measures to ensure minimal environmental harm or nuisance.
Noise and vibration from quarry drilling and blasting will be controlled to meet all regulatory standards.

4.11.5 Statement of proposed environmental outcome

No public health and/or nuisance impacts from noise emanating from quarry operations.

4.11.6 Draft measurement criteria

Operator to maintain a 'Site Report Book' to demonstrate that any dust related complaints received were acknowledged within 48 hours and resolved with the complainant within 7 days (or other time as agreed with Mining Regulator).

4.11.6 Draft measurement criteria (cont.)

In the event that a noise complaint is not resolved the Operator will conduct noise monitoring at the sensitive receptor to demonstrate noise emissions comply with the EPA Environment Protection (Noise) policy 2007 and Australian Standards (AS2187.2).

4.12 Assessment of Environmental Impacts – Protection of Third Party Property

4.12.1 Elements of the environment

Environmental Element	Views of affected parties	Applicable legislation or standards	Environmental Receptor
Protection of Third Party Property	Protection of surrounding residences	*Environment Protection Act 1993*	Nearest residence is 580m east of the mining tenement boundary.

4.12.2 Potential impact events

ID	Source	Pathway	Receptor	Description of uncertainty	Confirmation of impact events	Description of likely impact
A1	Quarrying Operations	Excavation of ground	Nearest residence is 580m east of the mining tenement boundary.	Whether any threat to third party property	A source and pathway exist	Nuisance to nearest residences.
A2	Mine completion	None	As above	As above	There is no pathway. A credible impact does not exist.	n/a

4.12.3 Control measures

The following control strategies will apply:

- Operator to take all reasonable and practicable measures to prevent or minimise any environmental harm or nuisance impacts generated by quarry operations upon visual amenity, air quality and noise.
- Operator to take all reasonable and practicable measures to avoid environmental harm or nuisance impacts from noise or dust emissions resulting from quarry operations.
- The proposed final quarry pit floor level will not cause any change to the current water flow (quantity) or quality of local groundwater.
- Operator to take all reasonable and practicable measures to ensure there are no adverse impacts to third-party land use or property on or off the site as a result of quarrying operations.

4.12.4 Description of uncertainty

The depth to groundwater in the vicinity of the proposed quarry development is located within the Lower Limestone Coast Prescribed Wells Area (PWA). A search of WaterConnect revealed a current local groundwater bore No. 7022-11480 is located just east of the proposed quarry site on the eastern boundary of Allotment 10.

Groundwater bore No. 7022-11480 has a current standing water level (SWL) of 24.75 metres AHD. It is proposed that the quarry will be developed to a pit floor depth of approximately 20 metres.

A minimum 2m thickness of limestone will be maintained between the proposed final pit floor level and groundwater within MC 4562.

4.12.4 Description of uncertainty (cont.)

Operator will take all reasonable and practicable measures to ensure minimal environmental harm or nuisance.

4.12.5 Statement of proposed environmental outcome

The tenement holder must ensure no adverse impact upon adjoining properties as a result of quarrying operations including agricultural productivity for third party land users on or off the land as a result of mining operations.

The tenement holder must ensure mining operations or mining related activities do not cause or result in inundation of third party property and infrastructure by surface water (to a greater extent than would be expected to occur prior to mining operations commencing or after mine completion).

The tenement holder must, during construction and operation, ensure no unauthorised damage to public or private property and infrastructure as a result of traffic movements from mining operations.

The tenement holder must ensure the land is progressively and finally rehabilitated to support the future land use agreed by the Director of Mines or another authorised officer.

4.12.6 Draft measurement criteria

Operator to maintain a 'Site Report Book' to demonstrate that any complaints of unauthorized damage to third-party property are recorded and resolved with the complainant.

4.13 Assessment of Environmental Impacts - Traffic

4.13.1 Elements of the environment

Environmental Element	Views of affected parties	Applicable legislation or standards	Environmental Receptor
Accident potential from quarry traffic using local council roads and accessing site affecting a member of the public	Safety and protection of quarry workers, contractors and the public using local council roads to access the quarry site	1) *Mining Act 1971 and Regulations* 2) *Mines and Works Inspection Act 1920 and Regulations* 3) *Road Traffic Act 1961and Regulations 2008*	Quarry workers, contractors accessing the site and/or public road users

4.13.2 Potential impact events

ID	Source	Pathway	Receptor	Description of uncertainty	Confirmation of impact events	Description of likely impact
A1	Quarrying Operations	Quarry vehicles and machinery accessing the site	Injury to quarry workers, contractors and/or public using local roads and at site entry/exit	Whether a potential traffic impact exists.	A source, pathway and receptor exist, there is a potential for proposed quarry operations involving heavy vehicle and machinery movement to impact upon the safety of local traffic.	Personal injury
A2	Mine completion	None	As above	As above	There is no pathway. A credible impact does not exist.	n/a

4.13.3 Control measures

The following control strategies will apply:

- All quarry vehicle operators will be inducted with regards to public health and safety.
- All employees will ensure all site boundary fencing is in good order and that gates are left closed at all times when the site is not operating.
- All quarry vehicle operators will report accidents and near misses to the quarry operator.
- Quarry Operator to keep regular records in the Site Report Book of all traffic accidents involving quarry vehicle traffic in or out of the site.

4.13.4 Description of uncertainty

No traffic survey has been undertaken so it is unclear whether any potential traffic impacts might exist.

4.13.5 Statement of proposed environmental outcome

Results of investigations will show no traffic accidents involving quarry vehicles that could have been reasonably prevented by the quarry operator occurred, and that all near misses were investigated and additional control measures effected if deemed necessary.

4.13.6 Draft measurement criteria

All traffic accidents involving quarry vehicles on at or near the quarry access point are recorded and investigated by a suitably qualified independent third party within 14 days (or other time as agreed with Mining Regulation) and the results of the investigation show that the accident could not have been reasonably prevented by the quarry operator.

Refer **Section 2.5.1** – Access and roads and **Section 1.12** – Proximity to infrastructure and housing.

4.14 Assessment of Environmental Impacts - Fauna

4.14.1 Elements of the environment

Environmental Element	Views of affected parties	Applicable legislation or standards	Environmental Receptor
Fauna health and safety	Safety and protection of fauna on and around the site	1) *National Parks and Wildlife Act 1972*	Injury to fauna on and around the site

4.14.2 Potential impact events

ID	Source	Pathway	Receptor	Description of uncertainty	Confirmation of impact events	Description of likely impact
P1	Quarrying Operations	Excavation of ground, fencing	Injury to native fauna on and around the site	Whether adequate safety fencing exists	A source, pathway and receptor exist, there is a potential for proposed quarry operations to impact upon the environmental element.	Fauna injury due to unrestricted site access
P2	Mine completion	None	As above	As above	There is no pathway. A credible impact does not exist.	n/a

4.14.3 Control measures

The following control strategies will apply:

- All contractors & employees will be inducted with regards to fauna health and safety.
- Tenement holder/Operator and all contractors and employees will ensure all site boundary fencing is in good order and that gates are left closed at all times when the quarry site is not operating.
- Mining operations will be progressively rehabilitated to provide a practical and achievable rehabilitation plan that is safe, stable and consistent with the proposed final land use.
- Following mine completion all terminal quarry faces are either backfilled or battered to form final rehabilitated slopes to a 1:3 ratio or alternative final batter angle approved by DEM.

4.14.4 Description of uncertainty

A survey of existing site fencing indicates that it is in good condition and is adequately safe.

4.14.5 Statement of proposed environmental outcome (Operational)

No fauna injuries and/or deaths resulting from unauthorised or unrestricted entry to the site that could have been reasonably prevented by the Tenement Holder/Operator.

4.14.6 Draft measurement criteria

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

4.14.7 Statement of proposed environmental outcome (Post Completion)

The tenement holder must demonstrate that post completion, the risks to the health and safety of fauna so far as they may be affected by mining operations, are as low as reasonably practicable.

4.14.8 Draft measurement criteria

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

OPERATOR CAPABILITY

GT Bobcat Pty Ltd is a family owned civil earthmoving and demolition contracting business established in 1988. It has grown to having a fleet of over twenty five machines and fifteen employees. The company is located in Mil-Lel South Australia and proudly services the Limestone Coast and Western Victoria region.

GT Bobcat currently operate a limestone quarry on Red Hill Road, Mil-Lel where they also operate an EPA licensed waste recovery and re-processing facility for treatment of inert demolition waste (excluding asbestos and asphalt materials)

GT Bobcat Pty Ltd is a capable, well established and financially stable company with extensive experience in civil construction works.

5. REFERENCES

Australian Government – Bureau of Meteorology – Climate statistics

CSIRO – Environments of South Australia, Province 1, South East - P. Laut et al 1977

Department of Mines and Energy SA – Report Book No. 88/2 – A Review of Gambier Limestone – Geology, Uses, Specifications and Production – Geological Survey by D.J. Flint – January 1988 DME. 148/84

Department of Mines – Geological Survey of South Australia – Bulletin No. 38 (p. 46 & fig. 18) Limestone, Dolomite and Magnesite Resources of South Australia – by R.K. Johns (pub. 1963)

Enviro Data SA – NatureMaps – Department for Environment and Water

Environment Protection Act 1993 – EPA (Air Quality) Policy 1994

Environment Protection Act 1993 - EPA (Noise) Policy 2007

Jeff Lawson – consulting Hydrogeologist

Landscapes South Australia Act 2019

Mining Act 1971, relevant Regulations, DEM Regulatory Guidelines, Ministerial Determination 006 and Determination – Terms of Reference 003

6. APPENDICES

Appendix A – Climate Data

Appendix B – Groundwater Data

Appendix C – Certificate of Title

Appendix D – AAR Search of Aboriginal Sites and Objects

7. MAPS AND PLANS

Figure 1 – Regional Topographic Map

Figure 1A – Site Location Plan

Figure 1B – Site Survey Plan

Figure 1C – Proposed Quarry Development Plan

Figure 1D – Conceptual Mining & Rehabilitation Stages Plan

Figure 2 – Quarry Cross Sections

Figure 3 – Site Aerial Photo

Figure 4 – Conceptual Mine Closure/Final Rehabilitation Plan

Figure 5 – Proximity Map – Conservation Areas

+ Ref. – Historical Regional Geology Maps - Figure 18, 86-570, S18943, S18944 & S19543

Appendix A

Climate Data

Australian Government
Bureau of Meteorology

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Bureau Home > Climate > Climate Data Online > Monthly Statistics

Climate statistics for Australian locations

Monthly climate statistics

All years of record

About Climate statistics | Data file of statistics for this site (csv) | Site selection menu

Summary statistics MOUNT GAMBIER AERO

A summary of the major climate statistics recorded at this site is provided below. There is also an extended table with more statistics available. More detailed data for individual sites is available.

Site information

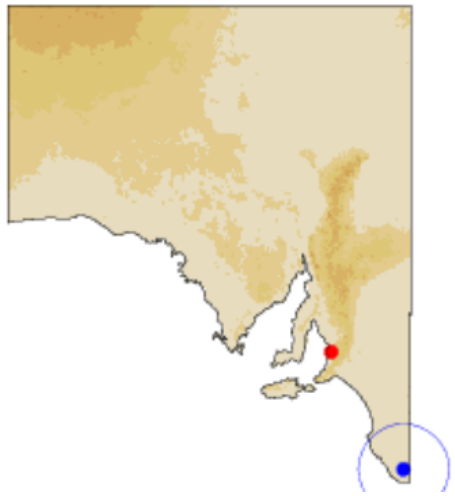
Site name: MOUNT GAMBIER AERO
Site number: 026021
Latitude: 37.75 °S **Longitude:** 140.77 °E
Elevation: 63 m
Commenced: 1941 **Status:** Open
Latest available data: 12 Aug 2021

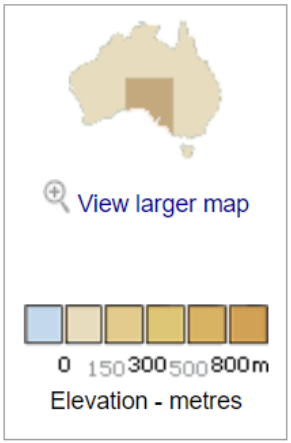
Additional information

Additional site information

Nearest alternative sites

1. 026020 MOUNT GAMBIER POST OFFICE (9.6km)
2. 090092 RENNICK (20.1km)
3. 026036 PENOLA STATE FOREST RESERVE (29.0km)





View: Main statistics All available | Period: Use all years of data | Text size: Normal Large

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years		Plot	Map
Temperature																	
Mean maximum temperature (°C)	25.4	25.3	23.2	19.6	16.1	13.9	13.2	14.2	15.9	18.1	20.6	23.1	19.0	79	1942 2021		
Mean minimum temperature (°C)	11.3	11.8	10.6	8.8	7.4	5.8	5.2	5.5	6.3	7.2	8.5	10.0	8.2	79	1942 2021		
Rainfall																	
Mean rainfall (mm)	27.1	26.6	35.3	54.0	73.0	84.5	100.9	95.6	72.5	60.1	46.4	38.6	713.3	78	1942 2021		
Decile 5 (median) rainfall (mm)	18.8	21.6	27.8	45.3	68.8	81.2	97.4	87.6	70.2	55.4	47.0	34.2	709.2	80	1942 2021		
Mean number of days of rain ≥ 1 mm	4.4	3.9	5.9	9.1	12.1	13.6	16.2	16.1	12.6	10.5	7.9	6.7	119.0	80	1942 2021		
Other daily elements																	
Mean daily sunshine (hours)	9.1	8.6	6.9	5.5	4.4	4.0	4.3	5.3	5.7	7.0	7.5	8.2	6.4	50	1966 2016		
Mean number of clear days	6.6	6.1	4.9	3.6	2.2	1.8	2.0	2.0	2.0	2.7	2.9	3.7	40.5	56	1954 2010		
Mean number of cloudy days	13.4	11.5	15.8	17.4	19.9	18.5	18.4	18.2	18.6	19.5	18.5	17.4	207.1	56	1954 2010		
9 am conditions																	
Mean 9am temperature (°C)	18.3	18.1	16.5	14.2	11.2	9.0	8.3	9.5	11.6	13.6	15.1	16.8	13.5	56	1954 2010		
Mean 9am relative humidity (%)	63	67	71	76	85	88	88	83	77	70	68	64	75	56	1954 2010		
Mean 9am wind speed (km/h)	18.3	17.0	15.2	13.5	12.4	12.5	13.9	15.7	18.1	19.4	18.9	18.8	16.1	68	1941 2010		
9am wind speed vs direction plot																	
3 pm conditions																	
Mean 3pm temperature (°C)	23.4	24.0	21.7	18.5	15.1	12.8	12.1	12.9	14.4	16.4	19.0	21.1	17.6	56	1954 2010		
Mean 3pm relative humidity (%)	44	44	49	56	68	73	72	67	63	59	53	48	58	56	1954 2010		
Mean 3pm wind speed (km/h)	24.3	23.0	21.5	18.9	16.9	17.0	18.7	21.3	22.5	22.7	22.8	23.9	21.1	68	1941 2010		
3pm wind speed vs direction plot																	

red = highest value blue = lowest value

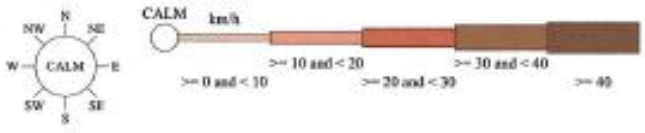
Rose of Wind direction versus Wind speed in km/h (12 Mar 1943 to 10 Aug 2024)

Custom times selected, refer to attached note for details

MOUNT GAMBIER AERO

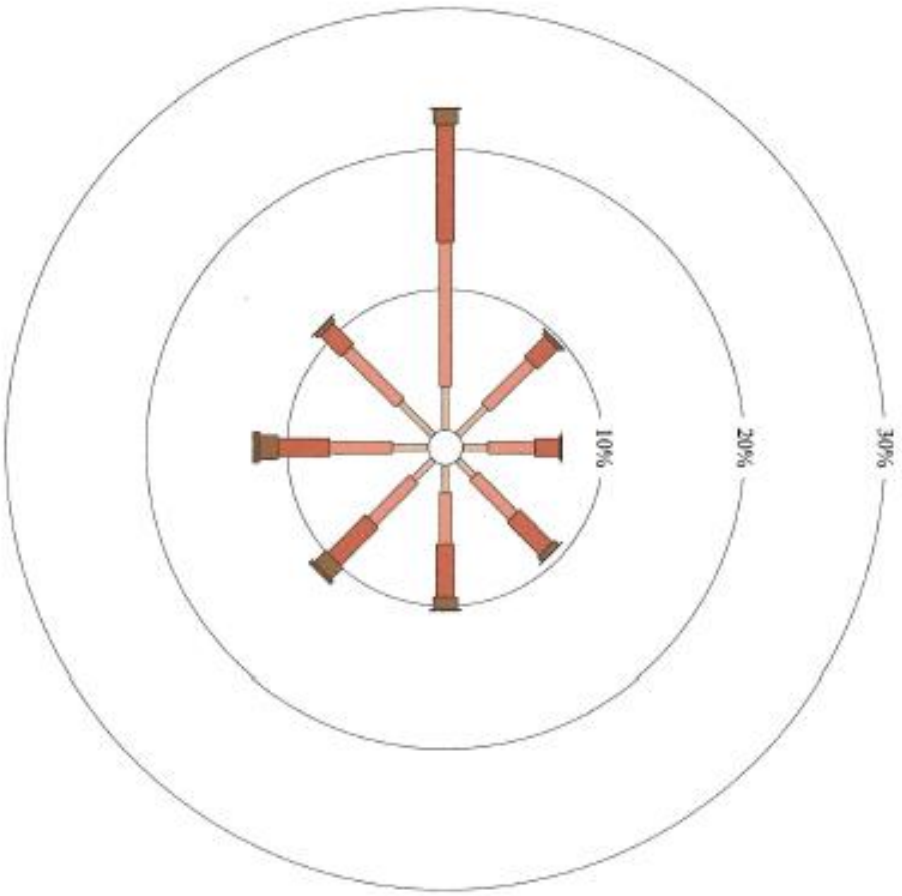
Site No: 026021 • Opened Jan 1941 • Still Open • Latitude: -37.7473° • Longitude: 140.7739° • Elevation 63m

An asterisk (*) indicates that calm is less than 0.5%.
Other important info about this analysis is available in the accompanying notes.



9 am
29148 Total Observations

Calm 6%



Rose of Wind direction versus Wind speed in km/h (12 Mar 1943 to 10 Aug 2024)

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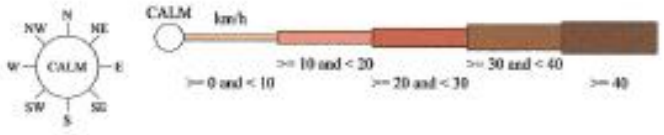
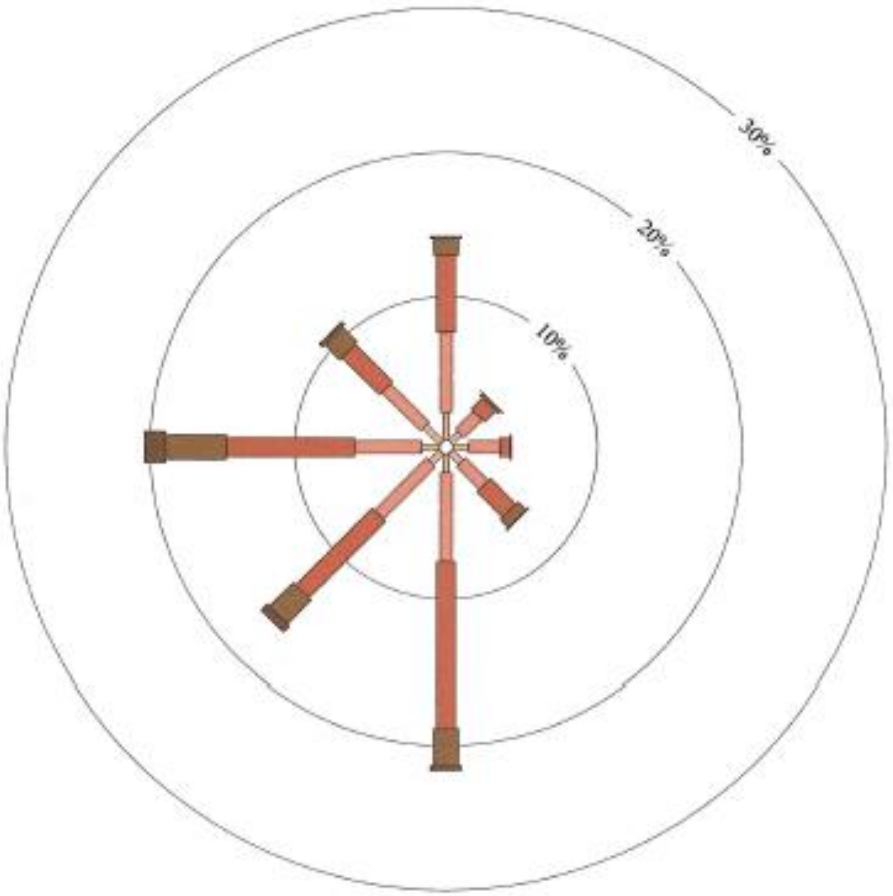


3 pm
29152 Total Observations

Calm 2%



Appendix B

Groundwater Data

WaterConnect

Connect to Enviro Data SA ▶

Search...

Water Management | Flood Awareness | Water Resources | River Murray | Science and Research | Industry and Mining | Data Systems | Government of South Australia

Details

Home » Data Systems » Groundwater Data » Details

Summary | Water Level | Salinity | Well Yield | Water Chemistry | Construction | Elevation | Drillers Log | Lithological Log | Hydrostratigraphic Log | Stratigraphic Log | Photos

Summary: 7022-11480

Help | About | Water Data SA

Drillhole No.	337455	**Name**	
Permit No.	363357	**Network**	
Class	WW	**Obswell No.**	
Water Point Type		**Status**	
Purpose	STK	**Aquifer**	Thg

Depth

Original Drilled Depth (m)	56.4	**Date**	26/05/2020
Maximum Depth (m)	56.4	**Date**	26/05/2020
Latest Open Depth (m)	56.4	**Date**	26/05/2020
Ref Elev (m AHD)		**Date**	19/09/2023
Cased To (m)		**Min Diameter (mm)**	

Latest Groundwater Readings

SWL (m)	26.8	**RSWL (m AHD)**	13.2	**Date**	26/05/2020
EC (µS/cm)	811	**TDS (mg/L)**	446	**Date**	26/05/2020
Yield (L/sec)		**Date**			

Location

MGA Easting	472721.58	**MGA Northing**	5812115.49	**MGA Zone**	54			
Latitude	**Degrees**	37	**Minutes**	50	**Seconds**	16.742	**Decimal**	-37.8379839
Longitude	**Degrees**	140	**Minutes**	41	**Seconds**	23.941	**Decimal**	140.6899836
250,000 map sheet	SJ5406 PENOLA	**100,000 map sheet**	7022 Gambier	**50,000 map sheet**	3	**10,000 map sheet**	32	**2,500 map sheet**	n
Hundred	BLANCHE	**Plan**	D1608	**Parcel**	A11	**Title**	CT5317/438		

Appendix C

Certificate of Title

LAND SERVICES SA

Product	Register Search (CT 5317/438)
Date/Time	12/04/2023 01:51PM
Customer Reference	
Order ID	20230412006211

South Australia

The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.

Certificate of Title - Volume 5317 Folio 438

Parent Title(s)	CT 4051/826				
Creating Dealing(s)	CONVERTED TITLE				
Title Issued	09/01/1996	Edition	6	Edition Issued	13/12/2018

Estate Type

FEE SIMPLE

Registered Proprietor

LOT 10 BURNDA ROAD COMPTON PTY. LTD. (ACN: 629 916 650)
OF L 2 180 FLINDERS STREET ADELAIDE SA 5000

Description of Land

ALLOTMENTS 9, 10 AND 11 DEPOSITED PLAN 1608
IN THE AREA NAMED COMPTON
HUNDRED OF BLANCHE

Easements

NIL

Schedule of Dealings

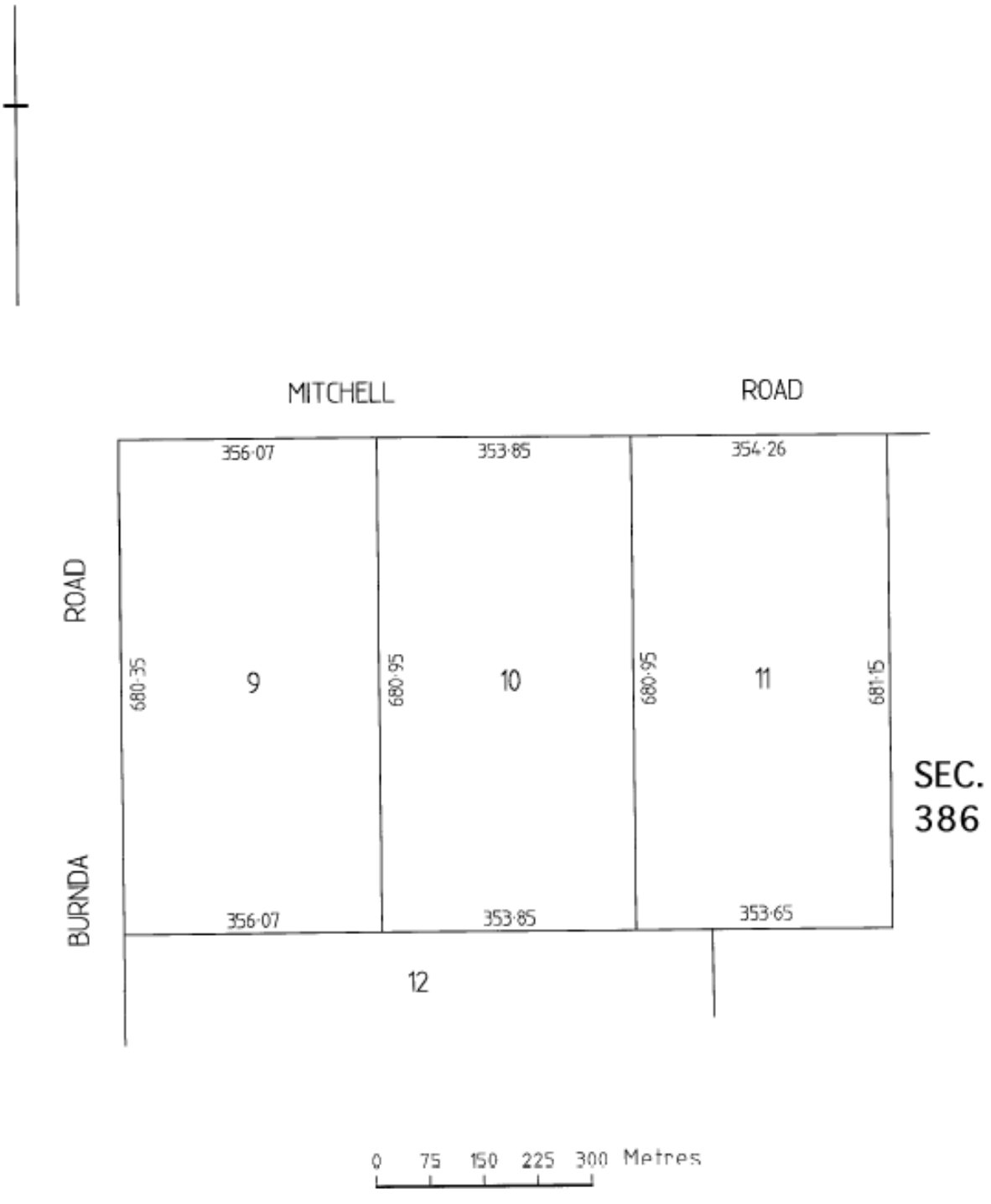
NIL

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL

LAND SERVICES SA

Product	Register Search (CT 5317/438)
Date/Time	12/04/2023 01:51PM
Customer Reference	
Order ID	20230412006211



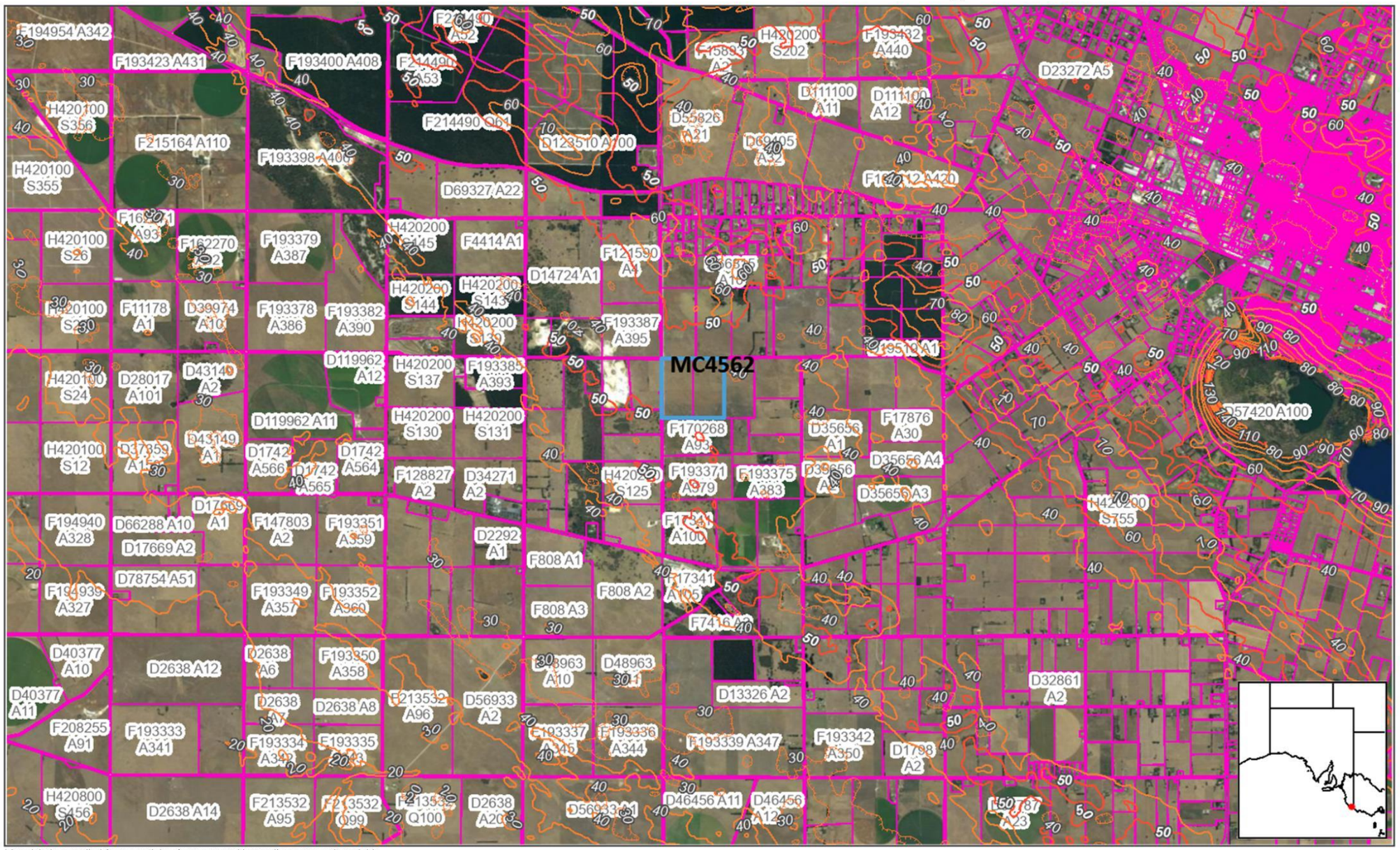
Appendix D

AAR Search of Aboriginal Sites and Objects

Maps and Plans

Section 7

MC4562 REGIONAL TOPOGRAPHIC MAP - Figure 1



Map data is compiled from a variety of sources and hence its accuracy is variable.

N

0 3.0 Kms

Compiled: 24-Oct-2024
Generated at: www.naturemaps.sa.gov.au
Datum: Geocentric Datum of Australia, 2020
Projection: Web Mercator (Auxiliary Sphere)

Government of South Australia
Department for Environment and Water

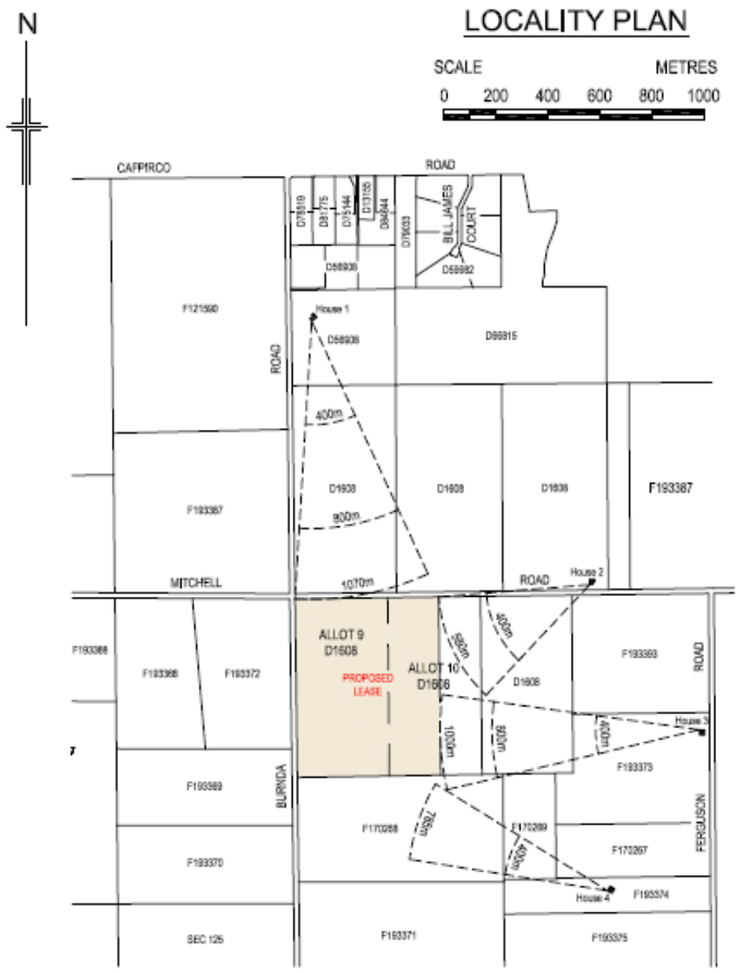


FIGURE 1A

LEASE BOUNDARY DETAILS

LEASE CORNER	EASTING	NORTHING	LATITUDE	LONGITUDE
A	472017.839	5812401.443	-37°50'7.38681"	140°40'55.18851"
B	472571.083	5812408.760	-37°50'7.20990"	140°41'17.82362"
C	472579.774	5811726.619	-37°50'29.34417"	140°41'18.08606"
D	472026.562	5811720.117	-37°50'29.49464"	140°40'55.45050"

cameronlock SURVEYING

45 Helen St Mount Gambier SA 5290
P : 08 8725 8422
www.cameronlock.com.au

Signed: _____ Surveyor

Dated: 3/3/2023

Date of Initial Field Survey : 2nd of March, 2023

GT BOBCAT

PROPOSED NEW MINING LEASE

ALLOTMENT 9 IN D1608 and
PORTION OF ALLOTMENT 10 IN D1608
In the Area named Compton.

Hundred of Blanche - District Council of Grant

	Revisions	Surveyed	Drawn	Approved	Date
2	ADDITIONAL DETAILS ADDED		ACN	MLC	05/11/2024
1	ORIGINAL PLAN	TJC	TJC	MLC	3/3/2023

NOTES:
Horizontal Datum: GDA 2020 Zone 54
Origin: Coordinated PSM 7023-629
Diagonally adjacent Lease Corner (A)

FILE: 28338-01 Proposed Mining Lease-Revision 2.dwg

DRAWING NUMBER	SHEET	REV.
28338-01	1 OF 2	2

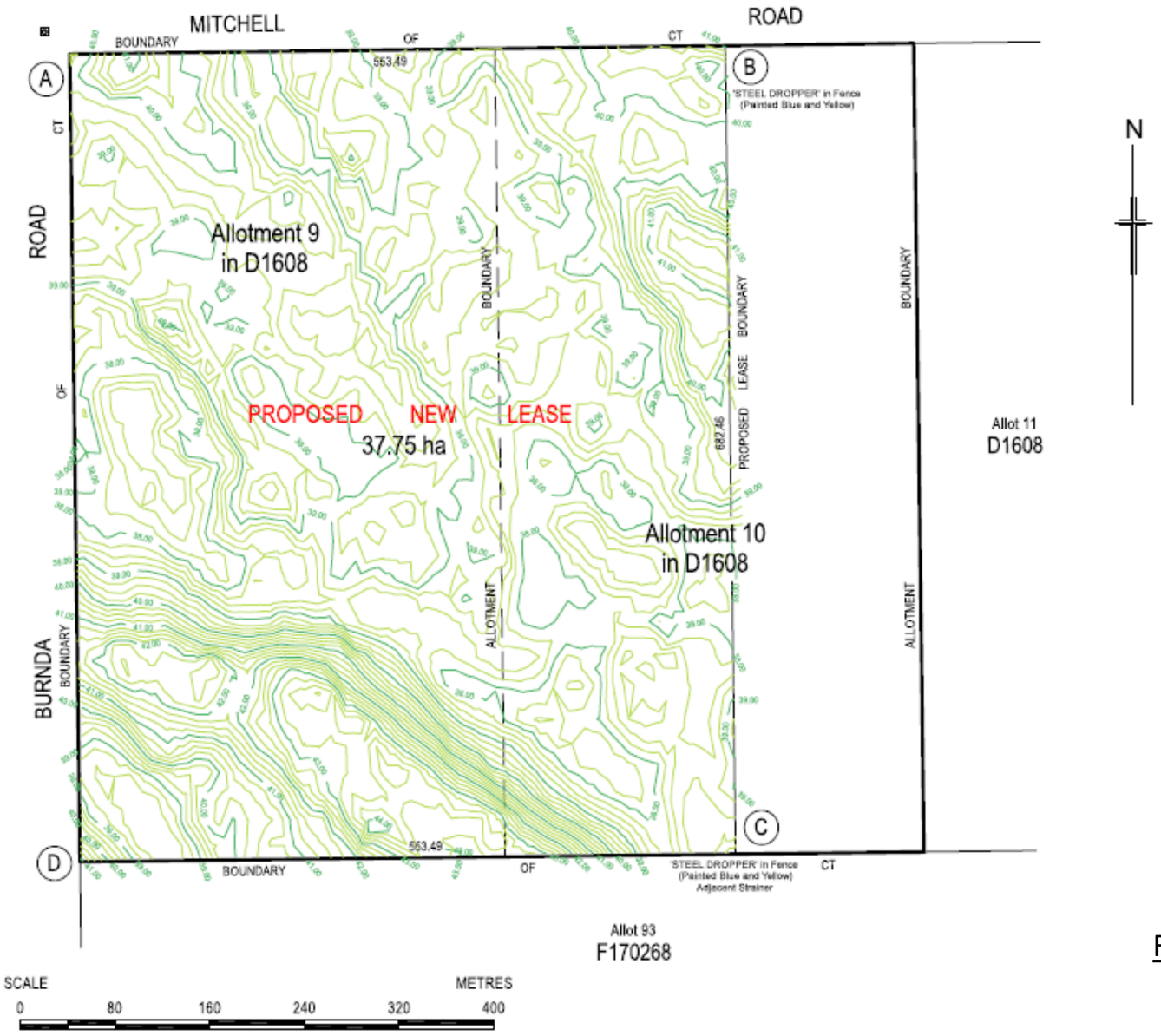


FIGURE 1B

cameron lock SURVEYING

45 Helen St Mount Gambier SA 5290
P : 08 8725 8422
www.cameronlock.com.au

Signed: Surveyor
Dated: 3/3/2023

Date of Initial Field Survey : 2nd of March, 2023

GT BOBCAT

PROPOSED NEW MINING LEASE

ALLOTMENT 9 IN D1608 and
PORTION OF ALLOTMENT 10 IN D1608
in the Area named Compton.

Hundred of Blanche - District Council of Grant

	Revisions	Surveyed	Drawn	Approved	Date
1	ORIGINAL PLAN	TJC	TJC	MLC	3/3/2023

NOTES:
Horizontal Datum: GDA 2020 Zone 54
Origin: Coordinated PSM 7022-629
Diagonally adjacent Lease Corner (A)

FILE: 28338-01 Proposed Mining Lease_030323.dwg

DRAWING NUMBER	SHEET	REV.
28338-01	1 OF 1	1

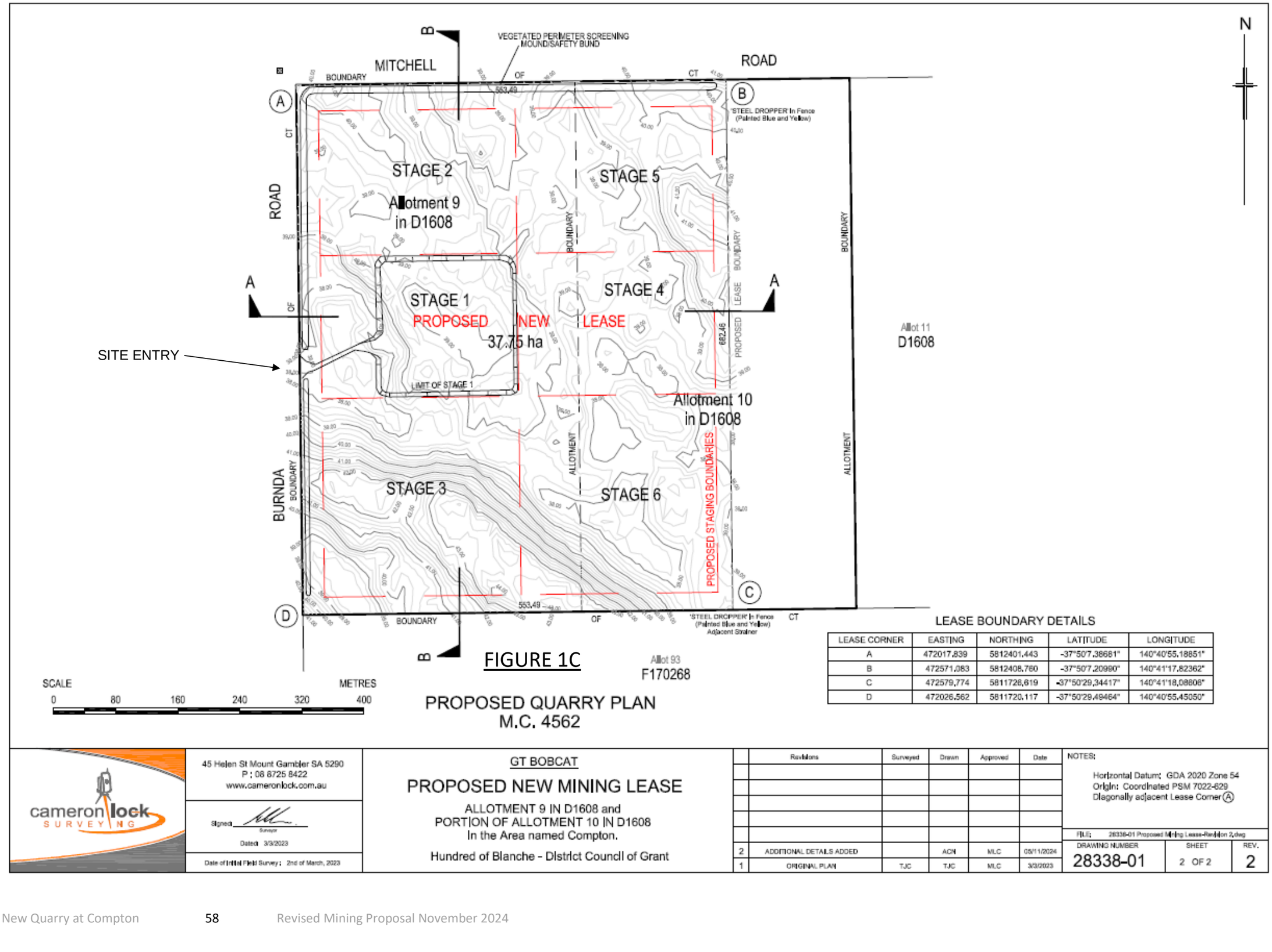


FIGURE 1C

PROPOSED QUARRY PLAN
M.C. 4562

LEASE BOUNDARY DETAILS

LEASE CORNER	EASTING	NORTHING	LATITUDE	LONGITUDE
A	472017.839	5812401.443	-37°50'7.38681"	140°40'55.18851"
B	472571.083	5812408.760	-37°50'7.20990"	140°41'17.82362"
C	472579.774	5811726.619	-37°50'29.34417"	140°41'18.08808"
D	472026.562	5811720.117	-37°50'29.49464"	140°40'55.45050"

cameronlock SURVEYING
45 Helen St Mount Gambier SA 5290
P ; 08 8725 8422
www.cameronlock.com.au

Signed _____ Surveyor
Dated 3/3/2023

Date of Initial Field Survey : 2nd of March, 2023

GT BOBCAT

PROPOSED NEW MINING LEASE

ALLOTMENT 9 IN D1608 and
PORTION OF ALLOTMENT 10 IN D1608
In the Area named Compton.

Hundred of Blanche - District Council of Grant

	Revisions	Surveyed	Drawn	Approved	Date
2	ADDITIONAL DETAILS ADDED		ACN	MLC	05/11/2024
1	ORIGINAL PLAN	TJC	TJC	MLC	3/3/2023

NOTES:
Horizontal Datum: GDA 2020 Zone 54
Origin: Coordinated PSM 7022-629
Diagonally adjacent Lease Corner (A)

FILE: 28338-01 Proposed Mining Lease-Revision 2.dwg

DRAWING NUMBER	SHEET	REV.
28338-01	2 OF 2	2

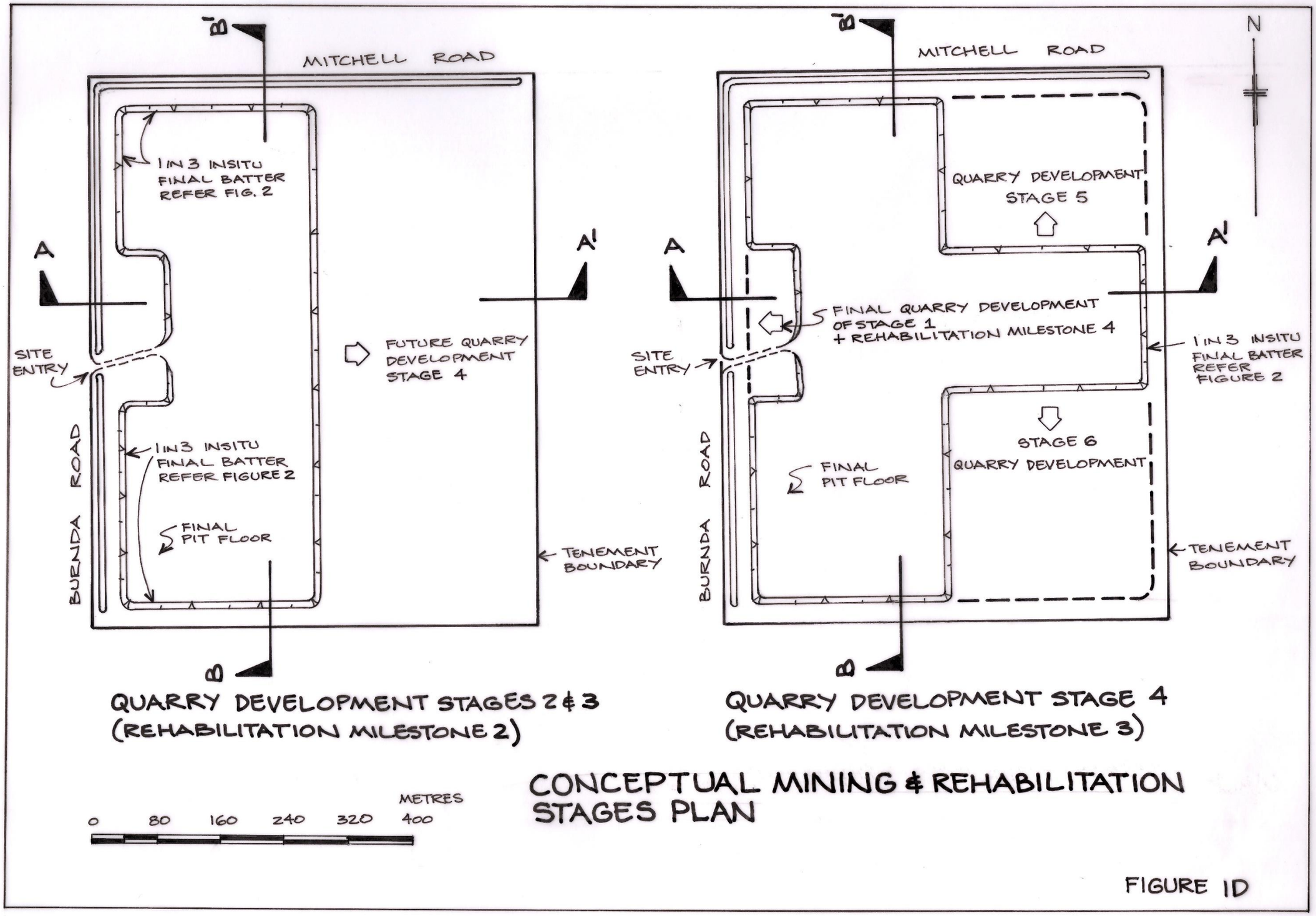
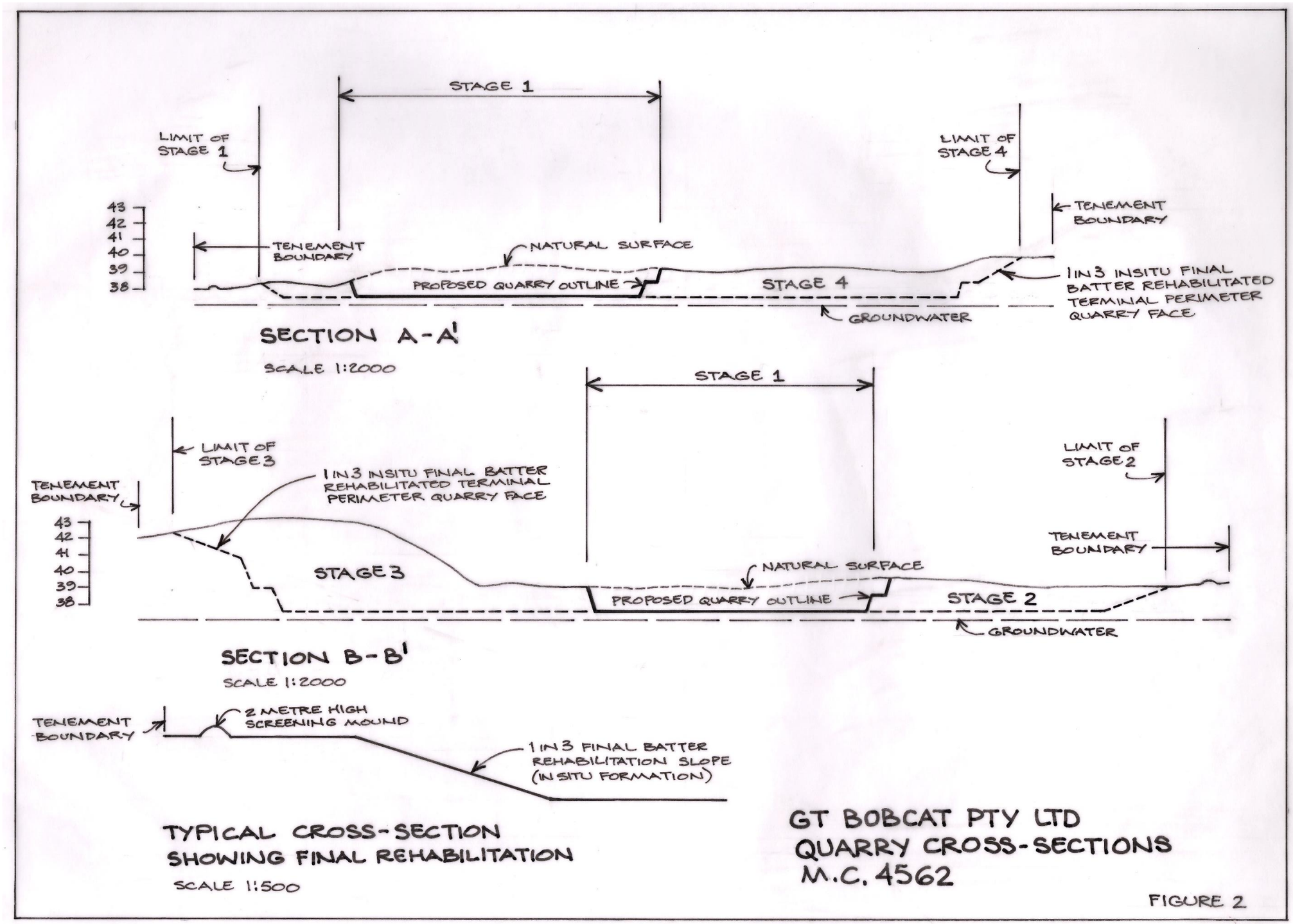
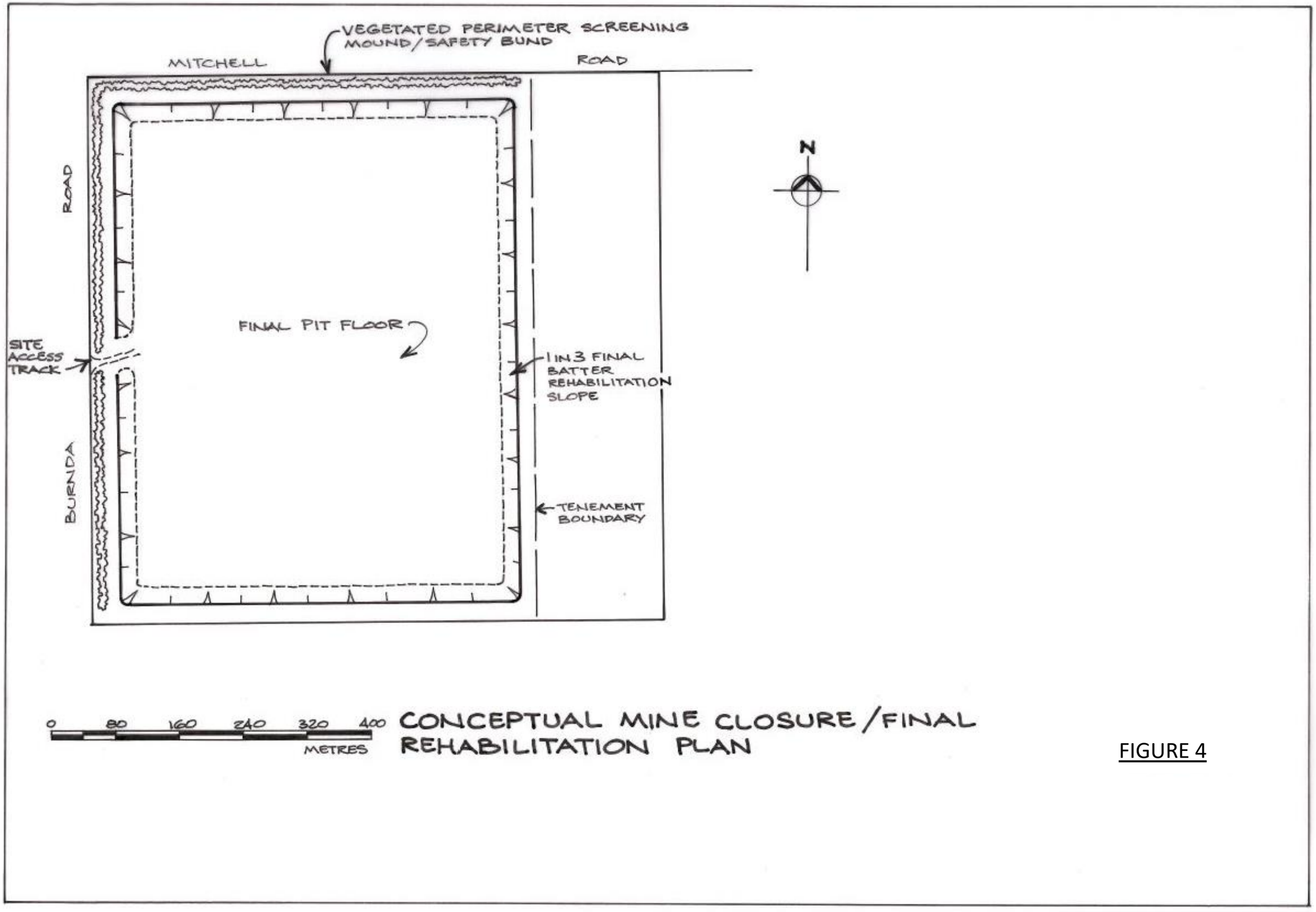

B
MITCHELL ROAD
1 IN 3 INSITU FINAL BATTER REFER FIG. 2
A
A'
SITE ENTRY
FUTURE QUARRY DEVELOPMENT STAGE 4
BURNDA ROAD
1 IN 3 INSITU FINAL BATTER REFER FIGURE 2
FINAL PIT FLOOR
TENEMENT BOUNDARY
B
QUARRY DEVELOPMENT STAGES 2 & 3
(REHABILITATION MILESTONE 2)
B
MITCHELL ROAD
N
QUARRY DEVELOPMENT STAGE 5
A
A'
FINAL QUARRY DEVELOPMENT OF STAGE 1 + REHABILITATION MILESTONE 4
1 IN 3 INSITU FINAL BATTER REFER FIGURE 2
SITE ENTRY
STAGE 6 QUARRY DEVELOPMENT
FINAL PIT FLOOR
BURNDA ROAD
TENEMENT BOUNDARY
B
QUARRY DEVELOPMENT STAGE 4
(REHABILITATION MILESTONE 3)
METRES
0 80 160 240 320 400
CONCEPTUAL MINING & REHABILITATION STAGES PLAN
FIGURE 1D

FIGURE 1D



Cross Sections - Figure 2

Site Aerial Photo - Figure 3



CONCEPTUAL MINE CLOSURE/FINAL REHABILITATION PLAN

FIGURE 4

Conceptual Mine Closure/Final Rehabilitation Plan - Figure 4

Figure 5

Proximity Map – Conservation Areas - Figure 5

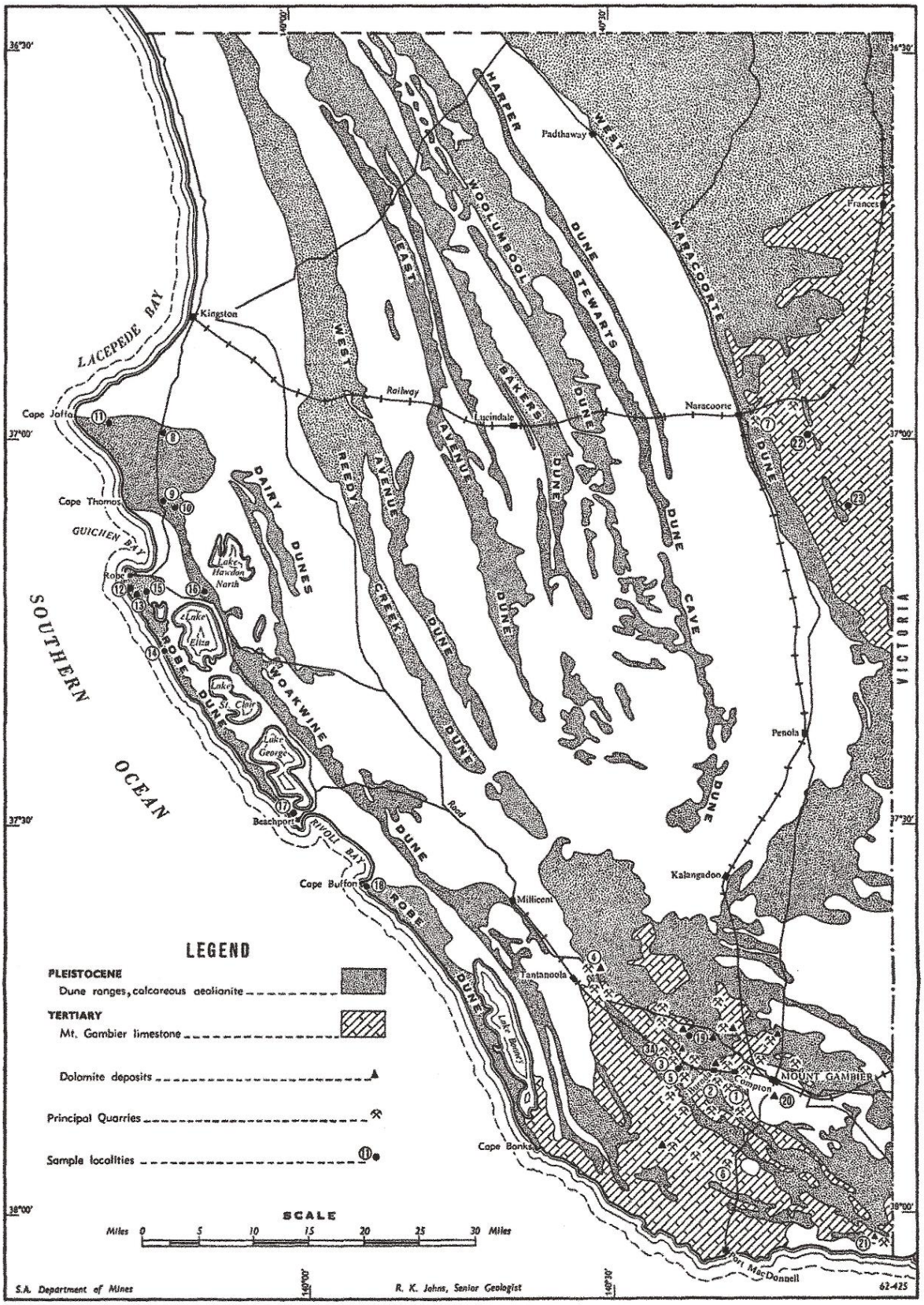
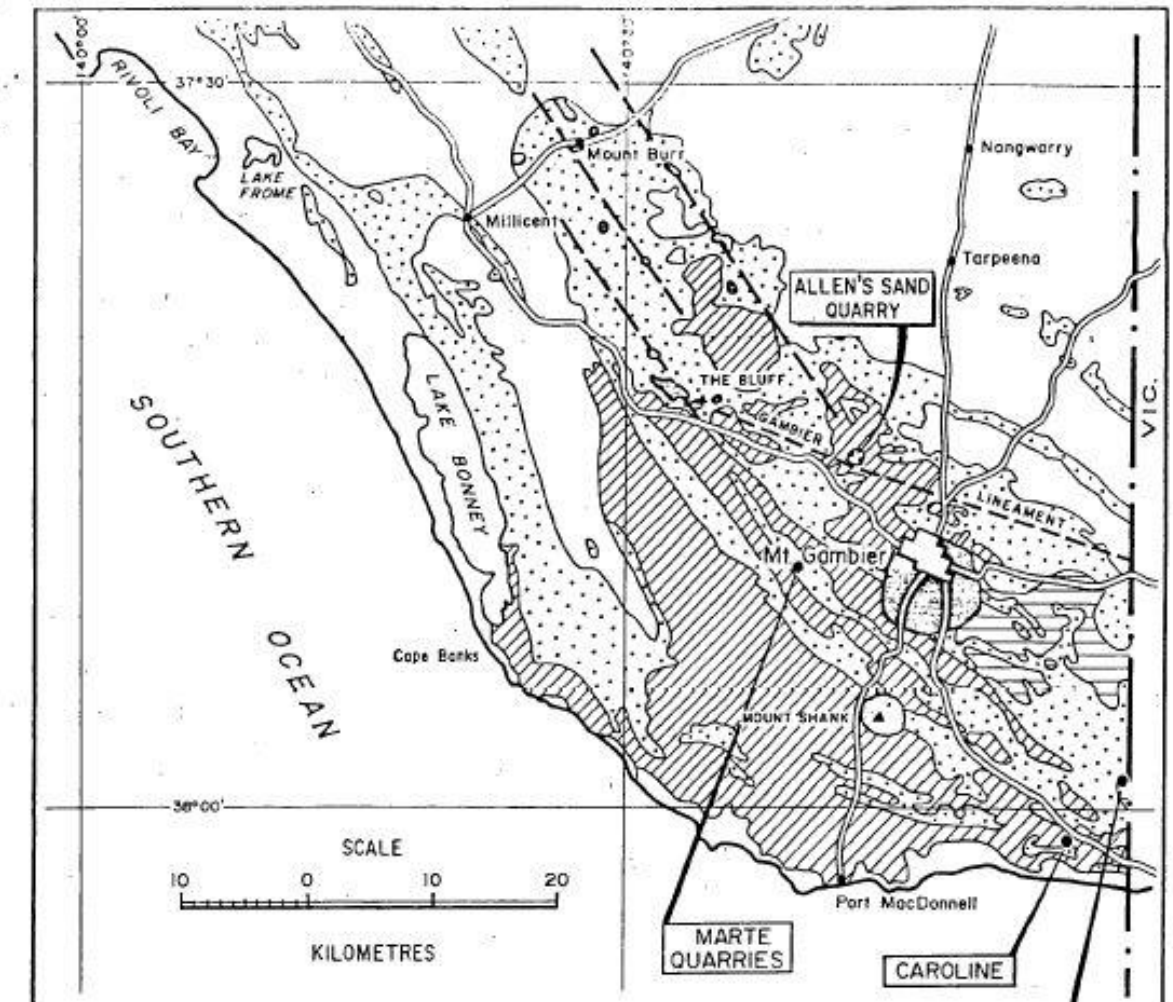


FIG. 18.—MAP OF THE LOWER SOUTH-EAST OF SOUTH AUSTRALIA
Showing geology, limestone and dolomite deposits, quarries, and sample localities

To face page 46]



REFERENCE

Quaternary

- Undifferentiated deposits
- Bridgewater Formation : calcarenite, stranded dune and beach deposits
- Wholers Bluff Formation : sandy limestone
- Volcanics

Tertiary

- Gambier Limestone : pale bryzoal limestone
- Tartwaup Fm : coarse sand, clay and silt exposed in workings at Allen's Sand Quarry

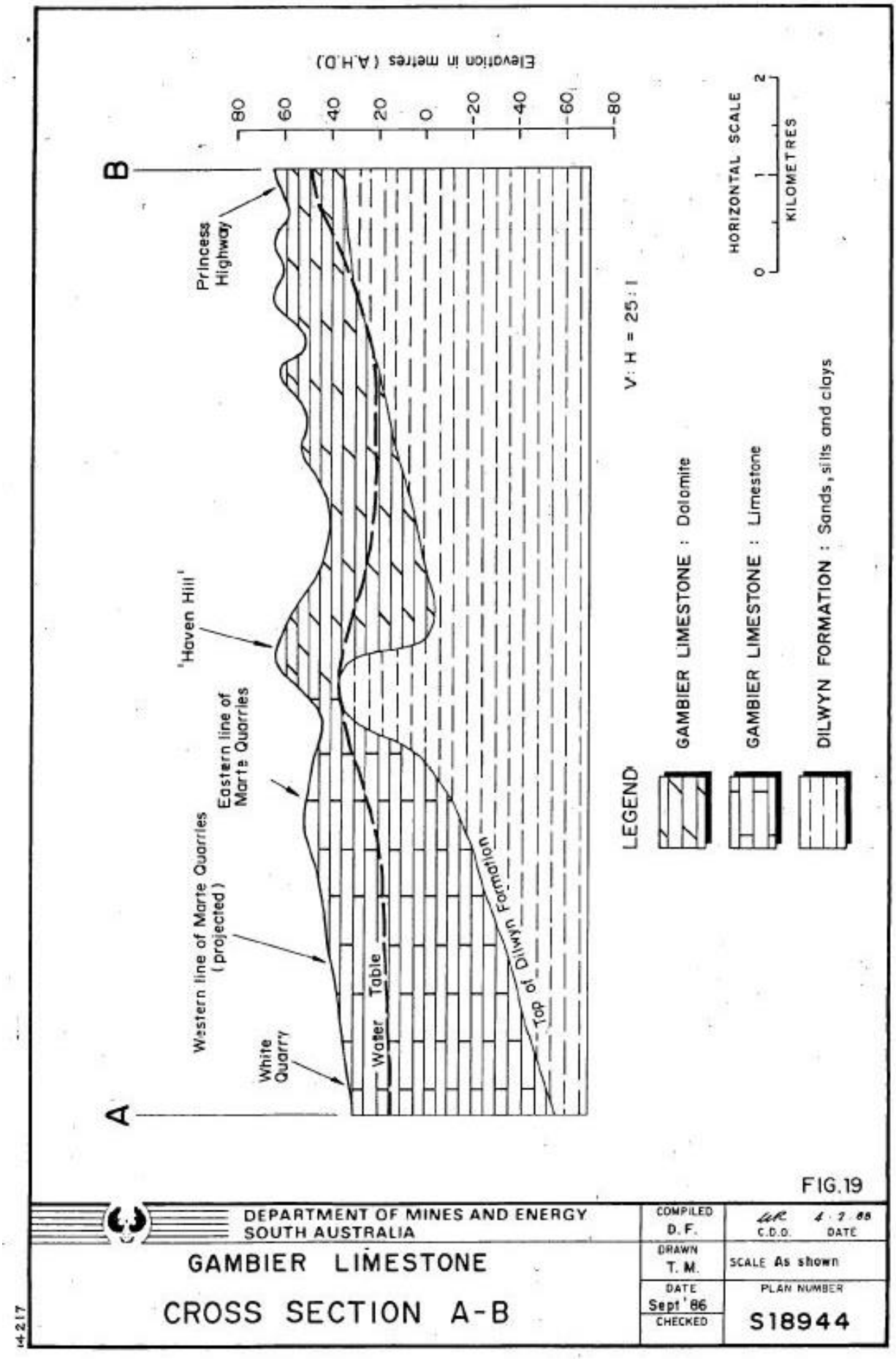
Inferred faults

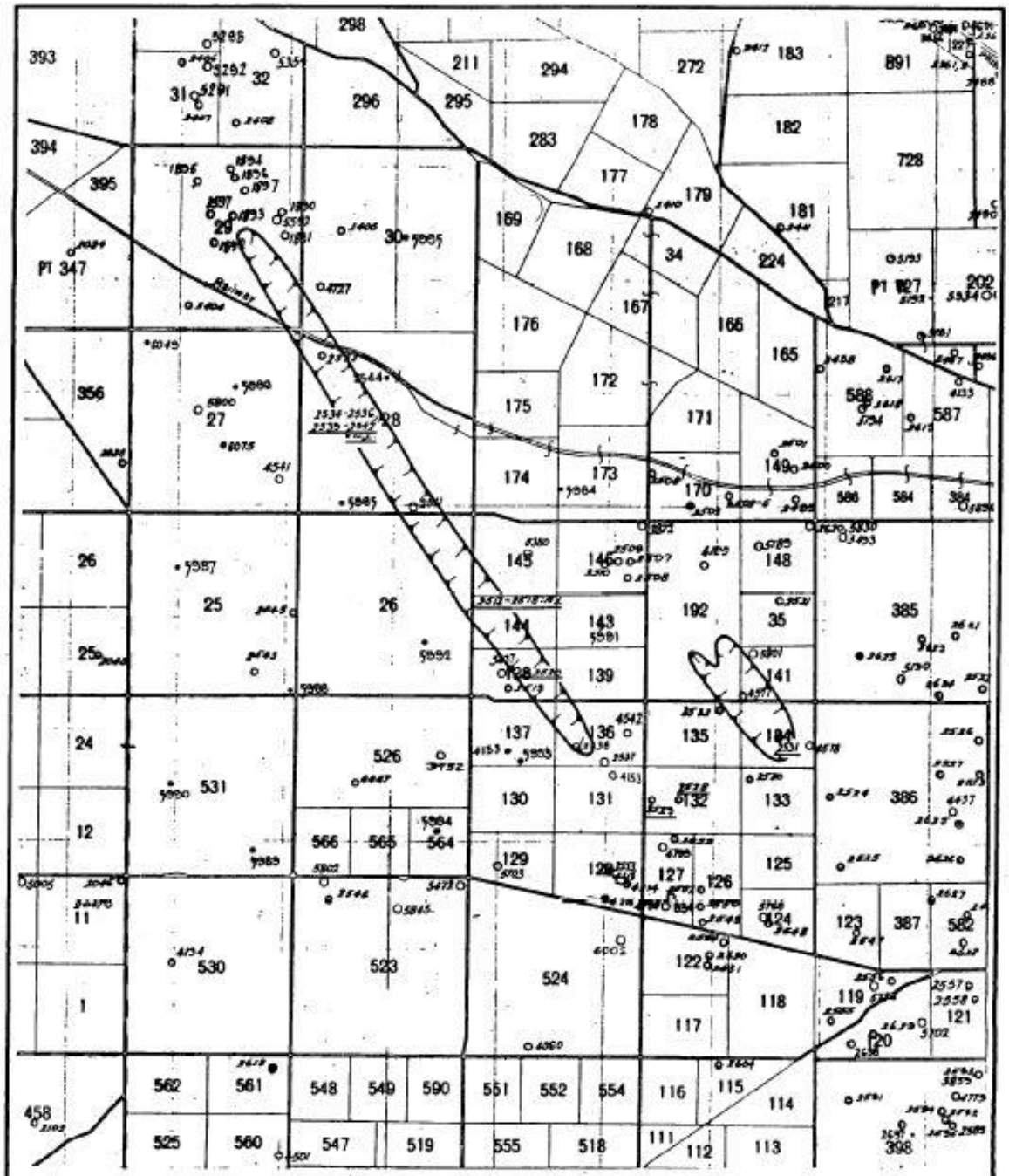
NOTE : Modified from Rogers (1980), Keeling (1983) and Sheard (1983)

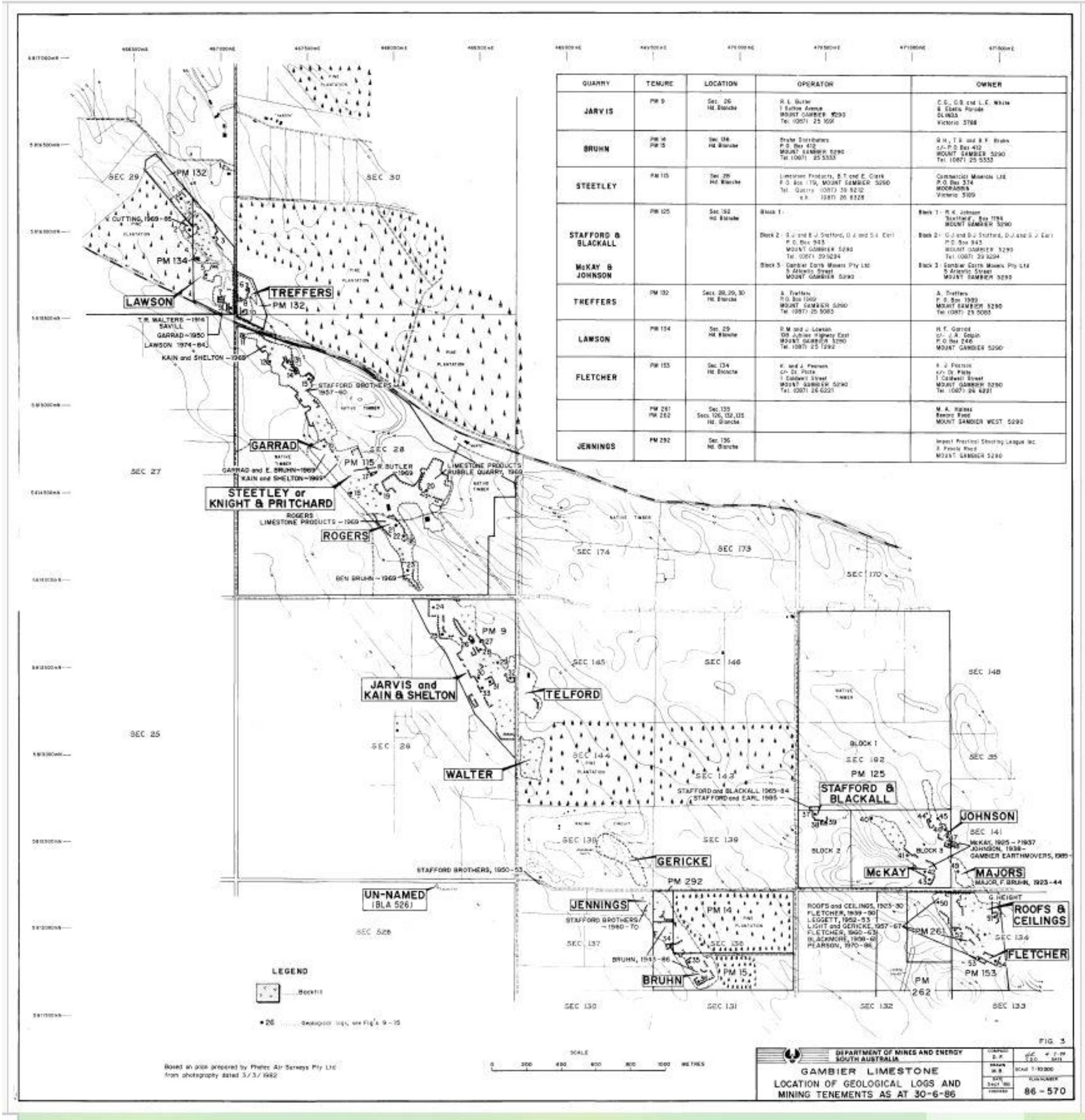
FIG. 1

DEPARTMENT OF MINES AND ENERGY SOUTH AUSTRALIA	COMPILED D.F.	4·2·88 CDD DATE
GAMBIER LIMESTONE REGIONAL GEOLOGY	DRAWN T. M.	SCALE 1:500 000
	DATE Sept '86	PLAN NUMBER S18943
	CHECKED	

4217


Elevation in metres (A.H.D.)
80
60
40
20
0
-20
-40
-60
-80
B
A
Princess Highway
'Haven Hill'
Eastern line of Marte Quarries
Western line of Marte Quarries (projected)
White Quarry
Water Table
Top of Dilwyn Formation
V: H = 25:1
HORIZONTAL SCALE
0
1
2
KILOMETRES
LEGEND
GAMBIER LIMESTONE : Dolomite
GAMBIER LIMESTONE : Limestone
DILWYN FORMATION : Sands, silts and clays
FIG.19
DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA
GAMBIER LIMESTONE
CROSS SECTION A-B
COMPILED D.F.
DRAWN T.M.
DATE Sept '86
CHECKED
C.D.O.
4.7.86 DATE
SCALE As shown
PLAN NUMBER
S18944
H 217


SCALE
0 1 2 3 4 5 KILOMETRES
Water Well and number
FIG. 21
DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA
GAMBIER LIMESTONE
MARTE AREA
LOCATION OF WATER WELLS AND PERCUSSION DRILL HOLES
COMPILED D. F.
C.D.D. 4 - 2 - 88 DATE
DRAWN M. B.
SCALE 1 : 50 000
DATE April '87
PLAN NUMBER S19543
CHECKED
4217



QUARRY	TENURE	LOCATION	OPERATOR	OWNER
JARVIS	PM 9	Sec. 26 Hd. Blanche	R. L. Butler, 1 Sutton Avenue, MOUNT GAMBIER 5290, Tel. (087) 25 1691	C.G., G.B. and L.E. White, 6 Ebelia Parade, OLINDA, Victoria 3788
BRUHN	PM 14 PM 15	Sec. 136 Hd. Blanche	Bruhn Distributors, P.O. Box 412, MOUNT GAMBIER 5290, Tel. (087) 25 5333	G.H., T.R. and B.F. Bruhn, c/- P.O. Box 412, MOUNT GAMBIER 5290, Tel. (087) 25 5333
STEETLEY	PM 115	Sec. 28 Hd. Blanche	Limestone Products, B.T. and E. Clark, P.O. Box 179, MOUNT GAMBIER 5290, Tel. Quarry (087) 39 9212, a.h. (087) 26 8328	Commercial Minerals Ltd, P.O. Box 374, MOORABBIN, Victoria 3189
STAFFORD & BLACKALL / McKAY & JOHNSON	PM 125	Sec. 182 Hd. Blanche	Block 1: Block 2: G.J. and B.J. Stafford, D.J. and S.J. Earl, P.O. Box 943, MOUNT GAMBIER 5290, Tel. (087) 39 9294 Block 3: Gambier Earth Movers Pty Ltd, 5 Atlantic Street, MOUNT GAMBIER 5290	Block 1: R.K. Johnson, 'Scotfield', Box 1794, MOUNT GAMBIER 5290 Block 2: G.J. and D.J. Stafford, D.J. and S.J. Earl, P.O. Box 943, MOUNT GAMBIER 5290, Tel. (087) 39 9294 Block 3: Gambier Earth Movers Pty Ltd, 5 Atlantic Street, MOUNT GAMBIER 5290
TREFFERS	PM 132	Secs. 28, 29, 30 Hd. Blanche	A. Treffers, P.O. Box 1989, MOUNT GAMBIER 5290, Tel. (087) 25 5083	A. Treffers, P.O. Box 1989, MOUNT GAMBIER 5290, Tel. (087) 25 5083
LAWSON	PM 134	Sec. 29 Hd. Blanche	R.M. and J. Lawson, 108 Jubilee Highway East, MOUNT GAMBIER 5290, Tel. (087) 25 1292	H.F. Garrod, c/- J.A. Galpin, P.O. Box 246, MOUNT GAMBIER 5290
FLETCHER	PM 153	Sec. 134 Hd. Blanche	K. and J. Pearson, c/- Dr. Plate, 1 Caldwell Street, MOUNT GAMBIER 5290, Tel. (087) 26 6221	K. J. Pearson, c/- Dr. Plate, 1 Caldwell Street, MOUNT GAMBIER 5290, Tel. (087) 26 6221
	PM 261 PM 262	Sec. 135 Secs. 126, 132, 135 Hd. Blanche		M. A. Holmes, Bemore Road, MOUNT GAMBIER WEST 5290
JENNINGS	PM 292	Sec. 136 Hd. Blanche		Impact Practical Shooting League Inc., 3 Fennis Road, MOUNT GAMBIER 5290