Application for development approval

SHIRE OF MERREDIN
INNOVATING THE WHEATBELT

Owner details		
Name: DEREK MASON SUPERANNUATION FUND		
ABN (if applicable): 57 356 034 960		
Address: PO BOX [redacted]		
MERREDIN WA		Postcode: 6415
Phone: Work: (08) 9041 4114	Fax:	Email: [redacted]
Home:		
Mobile: [redacted]		
Contact person for cor ence : REK MASON		
Signature: [redacted]		Date: 29/10/2024
Signature:		Date:
The signature of the owner(s) is required on all applications. This application will not proceed without that signature. For the purposes of signing this application an owner includes the persons referred to in the Planning and Development (Local Planning Schemes) Regulations 2015 Schedule 2 clause 62 (2).		

Applicant details (if different from owner)		
Name: DEREK MASON		
Address: PO BOX [redacted]		
MERREDIN WA		Postcode: 6415
Phone: Work:	Fax:	Email: [redacted]
Home:		
Mobile: [redacted]		
Contact person for correspondence : DEREK MASON		
The information and plans provided with this application may be made available by the local government for public viewing in connection with the application. ☑ Yes ☐ No		

Signature: [redacted]	Date: 29/10/2024

Property details		
Lot No: 812	House/Street No:	Location No:
Diagram or Plan No: 61250	Certificate of Title Vol. No: 2704	Folio: 923
Title encumbrances (e.g. easements, restrictive covenants):		
Street Name: GREAT EASTERN HWY	Suburb: MERREDIN	
Nearest street intersection: GOLDFIELDS RD / GREAT EASTERN HWY		

Proposed development	
Nature of Development	☐ Works ☐ Use ☑ Works and use
Is an exemption from development claimed for part of the development? ☐ Yes ☑ No	
If yes, is the exemption for	☐ Works ☐ Use
Description of proposed works and/or land use: EXTRACTION OF GRAVEL	
Description of exemption claimed (if relevant):	
Nature of any existing buildings and/or land use:	
Approximate cost of proposed development:	
Estimated time of completion:	

OFFICE USE ONLY

TAX INVOICE/RECEIPT

Receipt Number: **137934**

Receipt Date: : **29.10.24**

Payer: Derek Mason

SHIRE OF MERREDIN
INNOVATING THE WHEATBELT

ABN: 87 065 676 484

PO Box 42,
Merredin WA 6415
Telephone: (08) 9041 1611
Facsimile: (08) 9041 2379
Email: admin@merredin.wa.gov.au

Receipt Type	Detail	Amount
Miscellaneous	DEVELOPMENT PLAN APPLICATION Extractive industry activity Lot 812 GEH Road Merredin Account: 131006200	$739.00

* GST Exclusive Charge	$739.00
* GST	$0.00

Cash	Cheque	Other
$0.00	$0.00	$739.00

Total	**$739.00**
Tendered	$739.00
Change Given	$0.00
Round Amount	$0.00

TRANS-PLUS
CARTAGE CONTRACTORS
Your Grain / Fertilizer / Stock Specialists

Shire of Merredin
PO Box 42
Merredin WA 6415
Attention: Peter Zenni

RE: 812 Great Eastern Hwy, Merredin

To Peter,

Regarding the renewal of my Development Approval for the above-mentioned property, activities are still continuing and there are no variations from the original Approval. Please extend for a further Five Years.

Thank you,

[redacted]

Derek Mason

[redacted]

Derek Mason Super Fund

ABN 573 560 349 60

Application for a Mineral Extraction Licence

PN 061250 LN 812

"DMSF Burracoppin Gravel Quarry"

Burracoppin District
Merredin Shire
WESTERN AUSTRALIA

August 2019

Prepared and submitted by:

X2M - Exploration to Mining

All enquiries regarding this document should be forwarded to X2M (0428467766)

Author:
Edd Prumm *B.Sc. MAusIMM, MAIG*.
[redacted]

Corporate Endorsement:

"I hereby certify that to the best of my knowledge, the information within this Application for a Mineral Extraction Licence is true and correct.

Name: Derek Mason **Signed:**

Position: Owner **Date:**

Table of Contents

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List of tables

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1.Scope and Purpose

The Application for a Mineral Extraction Licence has been prepared by X2M / Prumm Corporation Pty Ltd in support of a development application for Plan number 061250 Lot number 812, ("the quarry") which comprise the Burracoppin Gravel Quarry (the "Project") of the Derek Mason Super Fund ("DMSF").

The DMSF owns a farmlet, located approximately 20km east of the township of Merredin on the north side of the Great Eastern Highway.

The entrance to the project is via the bitumised portion of the Goldfields Road to the north of the Great Eastern highway (see Figures 1 to 3 below).

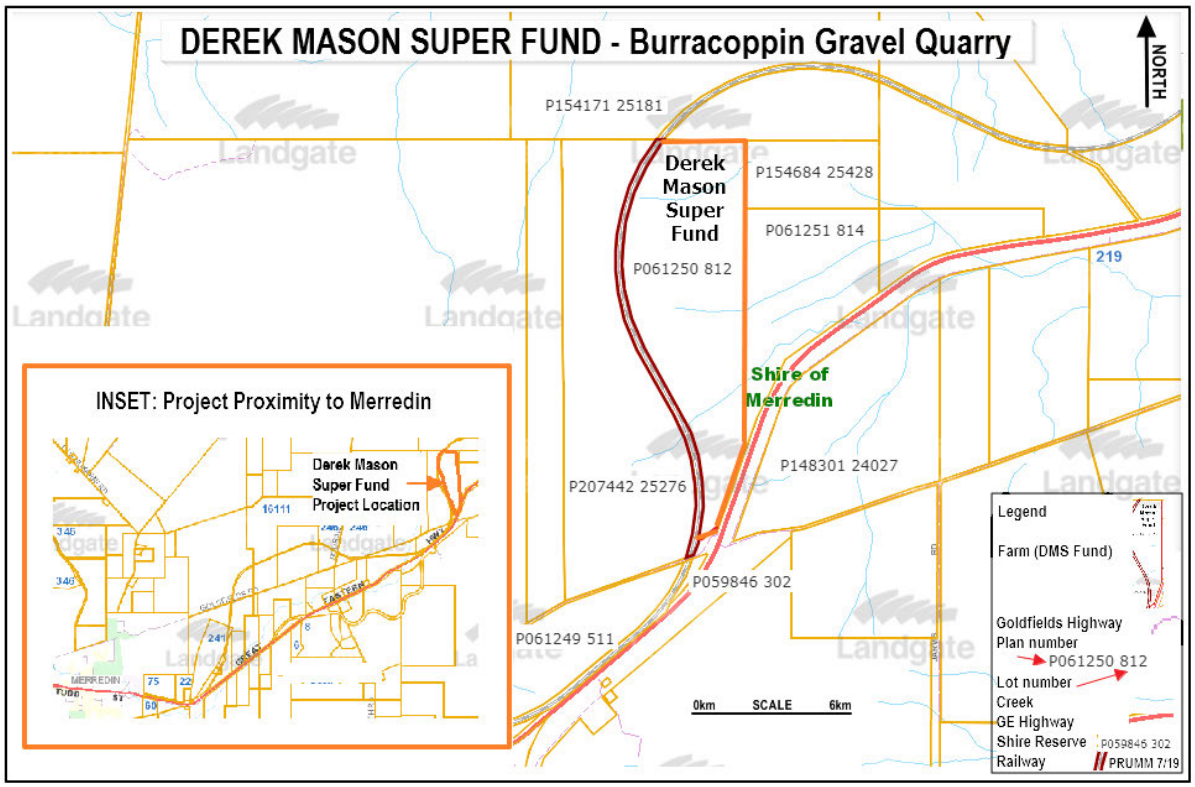


Figure 1 Project Location Diagram

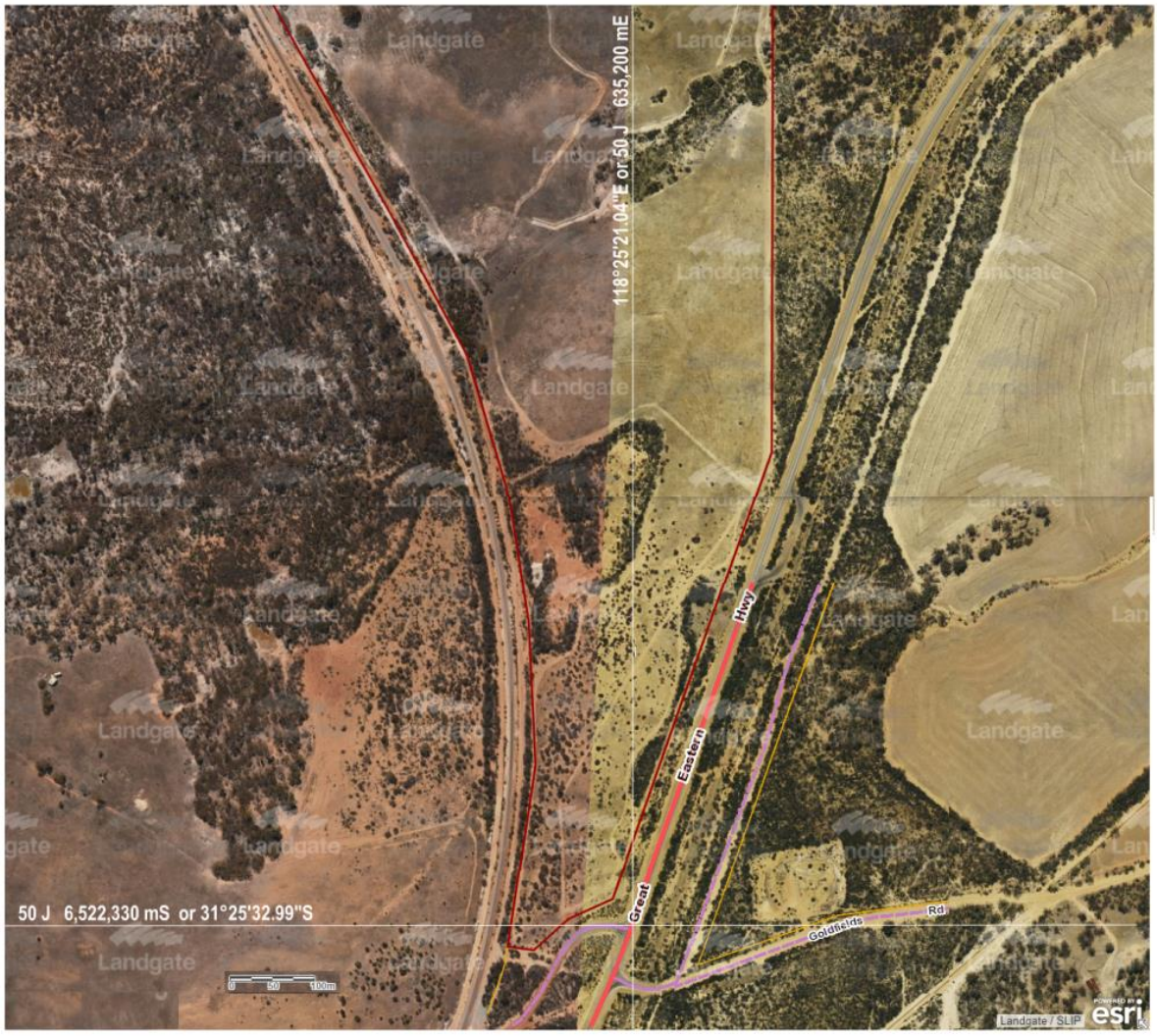


Figure 2 High res image, the proposed Burracoppin Quarry site

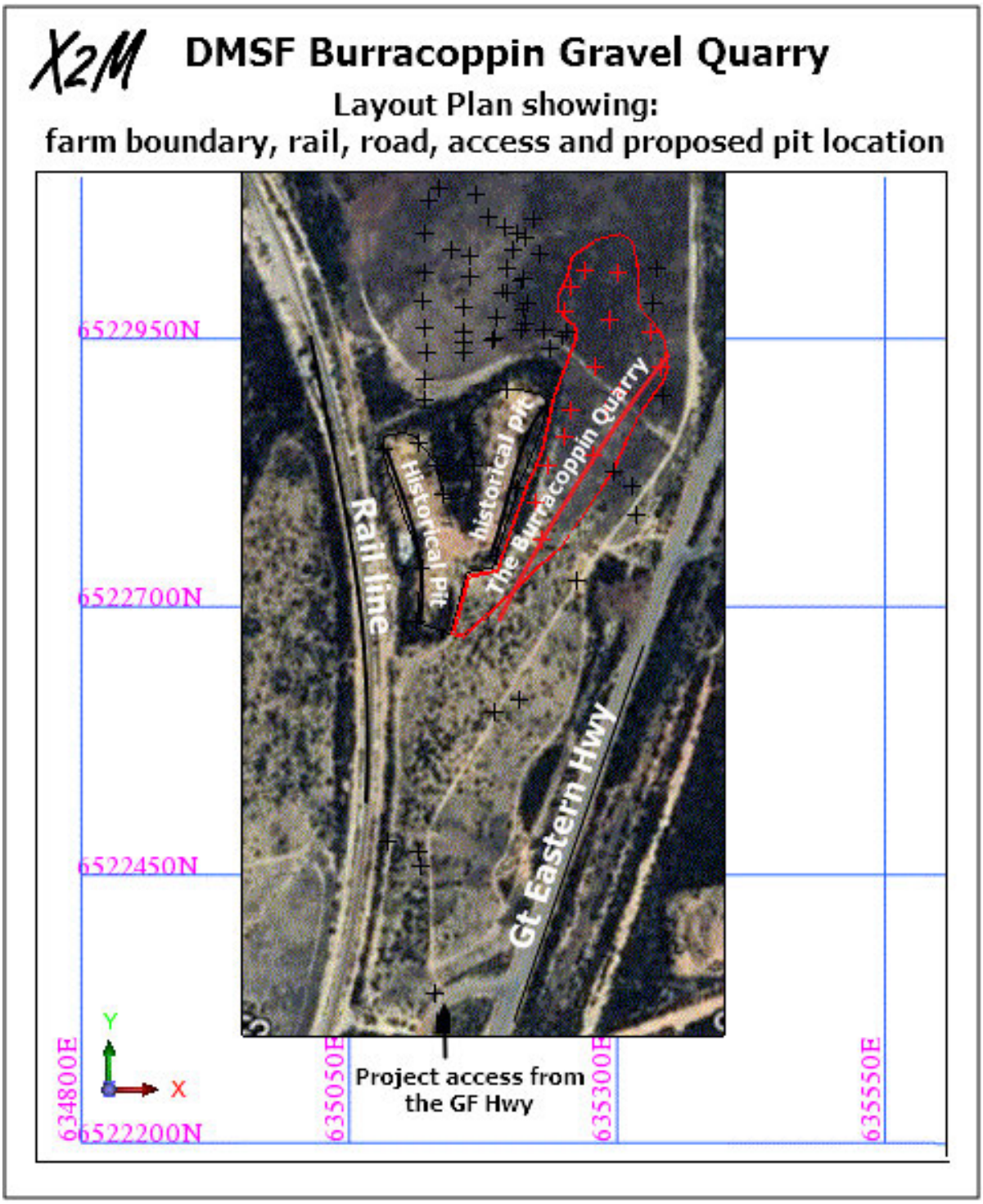


Figure 1 Sample Sites and interpreted Quarry Location

The scope and structure of this Licence application is as follows:

2 Shire forms

3 Plan of the excavation site

4 Works excavation program

5 Rehabilitation and decommissioning program

6 Evidence of the establishment of a surveyed datum peg

7 Certificate and plan from a licenced surveyor

8 Evidence of suitable advertising and notification

9 All land use planning approvals

10 Environmental approvals

11 Geotechnical information

12 Consent in writing of the owner of the site

13 Evidence that a notice has been given to the Commissioner of Soil and Land Conservation

14 Any other information that the local government may request

15 The licence application fee

2.Shire Forms

A copy of all signed and submitted forms is appended as Appendix 1

3.Plan of the excavation site

The plan below displays:

2 the existing and proposed contours based on the Australian Height Datum at 1m intervals

3 the farm boundaries on which the excavation site is located

4 the external dimensions of the land

5 the location and depth of the existing and proposed excavation of the land

6 the location of vehicle access and egress, proposed and existing access routes

7 the location of roads, rail, survey stations and power poles
   a. there are no telephone cables, poles, pipelines, sewers, bridges, cables, reserves and registered grants of easement or other encumbrances on or in the vicinity of the proposed development.

8 the location of existing watercourses, fences and proposed warning signage
   a. There are no dams

9 the location of the removed and stored overburden

the location of the mined ore stocks ready for sale will be explained as part of the mining process. (Refer section 4.6.2)

Briefly, in order to reduce costs via double handling and minimise over clearing, clearing of the OB & TS will occur within 6 designed panels and contained to within the pit design. This effectively breaks the 300m long pit into 6 panels. (refer figure 4)

Each panel is approximately 50m long and will be mined from the South to North.

Within each of the 6 proposed panels, OB & TS will be stockpiled on the eastern side of the excavation. The intra panel gravel will be mined in strips between 10 m wide starting from the west, stockpiling the ore on the eastern side.

On completion of a 50m (N-S) panel of gravel removal, the plan is to immediately rehabilitate the panel area, the exhausted portion of the quarry, by pushing the topsoil and overburden back into the shallow excavation, scarifying and reseeding the remnant surface to promote regrowth.

SURVEY PLAN TO BE SET IN HERE

4.Works excavation program

4.1 The Nature and Duration of the Project

The DMSF Burracoppin Gravel Quarry will be mined to a maximum depth of 2.1 meters (refer 4.4), which allows for operator error. The maximum depth of gravel unearthed in the exploration pits shows the gravel to be to a maximum depth of 1.6m with approximately 100 to 200mm of overburden.

The excavated gravel will be "free dig" using a 30 tonne excavator. The term free dig refers to mining without blasting however in this case dozer ripping will also not be required.

The peripheries of the excavation will be mined on a shallow angle, 45 degrees or less. The nature of the gravel deposit is that it is of greatest thickness, (depth), in the middle of the pit and the gravel thins markedly toward the periphery of the open pit.

Logging of the exploration pits, refer figure XXX, displays the periphery of the gravel deposit thinning to less than 300mm and in some cases to 100 mm thickness.

Regarding duration of the project, it is anticipated that the quarry will be spasmodically mined, that is as and when a contract for gravel arises. At this juncture there are no live contracts for gravel, therefore duration of the project is expected to be broadly in the order of 10 years.

DMSF
Burracoppin Gravel Quarry

Plan displaying gravel thickness (m), historical pit, current pit design, mining panels, historical pit & OB & topsoil stocks

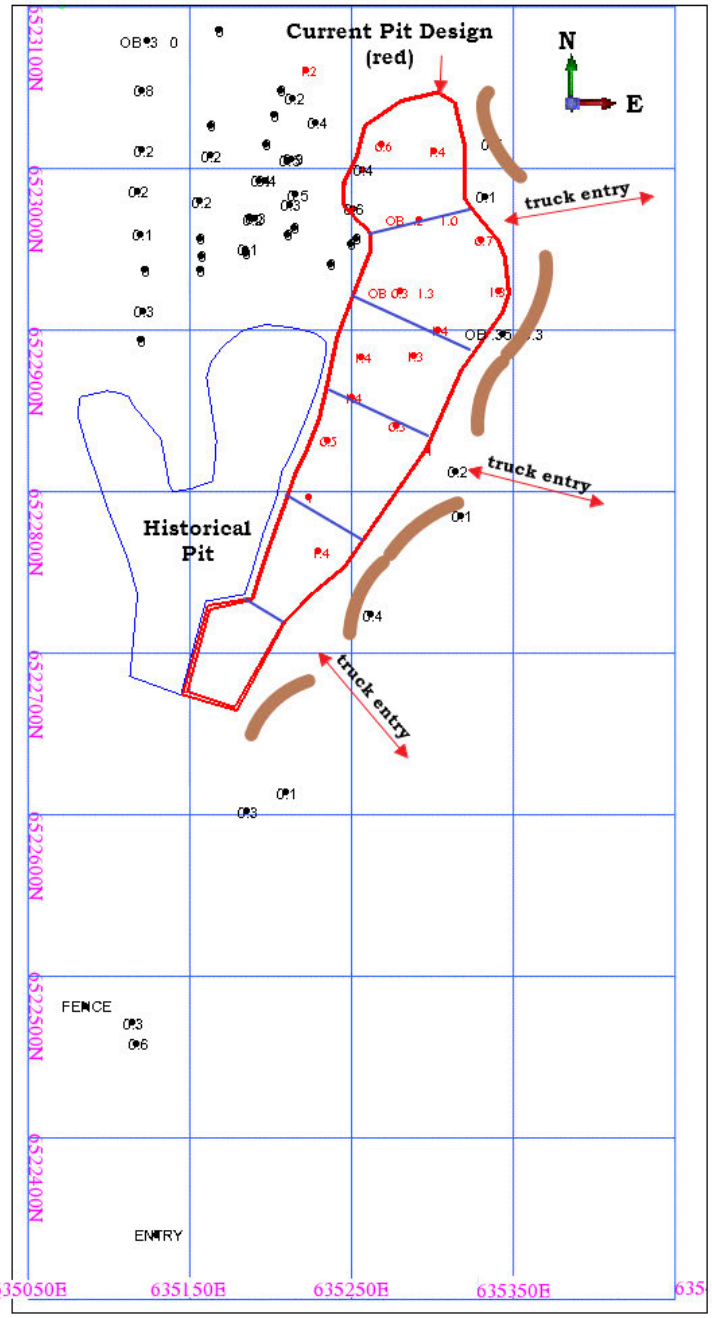


Figure 2 Burracoppin Gravel Quarry - mine layout

Figure 3 Burracoppin gravel Quarry - Ortho-rectified mine layout

4.2 Excavation stages & timing

As stated in 4.1 above the DMSF has no live contracts for gravel and it is likely that advertising, both paid and word of mouth, should provide sales (volume unknown) within the initial 6 months post excavation.

The excavation plan is, as mentioned in 3.9a above, refer to figure XX below.

1 to remove the overburden from the initial (50m S-N) panel of gravel. The overburden and topsoil will be stockpiled on the eastern side of the excavation.

2 The ore will then be mined in strips approximately 10m wide starting from the south west corner and completing in the north east corner of the panel. The mined ore will be stockpiled immediately adjacent from where it was excavated, essentially sitting on-top of the next strip of ore to be mined from the same panel.

3 Therefore one strip of the panel will be opened and available for sale and when the strip of stockpiled gravel is sold and removed the next strip of gravel can be excavated.

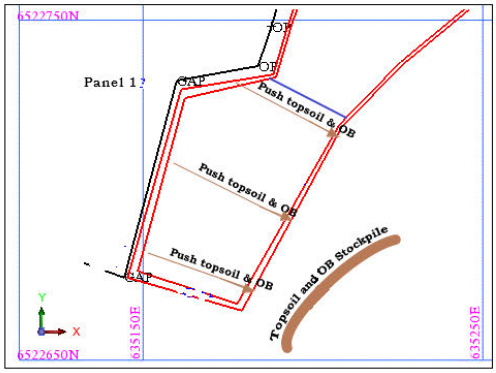
4 Once exhausted, each panel of the pit will be rehabilitated.

Timing depends on sales and at this stage sales estimates are unknown.

DMSF - BURRACOPPIN GRAVEL QUARRY
Mining Sequence

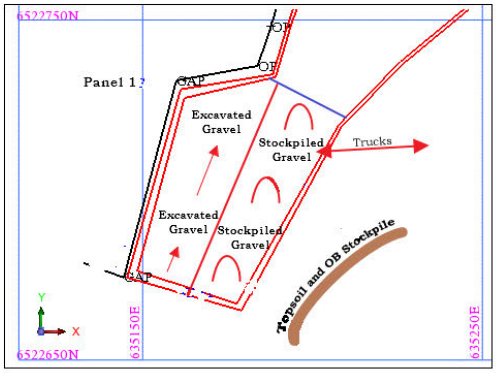
STEP 1

Panel 1
Remove the topsoil & OB from the pit area and deposit into a topsoil stockpile.
Do not remove topsoil & OB outside of the pit area



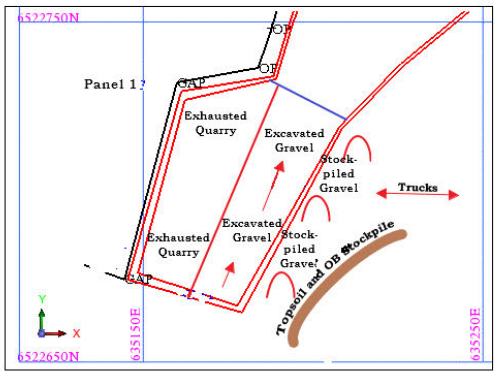
STEP 2

Panel 1
Excavate the gravel from the pit in a 10m wide slice (S to N) and side cast to the east
Remove the gravel from the ore stockpile via loader & truck or excavator & truck



STEP 3

Panel 1
Once sufficient stockpile area has been removed for sale via truck, excavate the 2nd 10m wide strip side casting to the east of the excavation



STEP 4

Panel 2
Remove topsoil and OB from panel 2
Panel 1
Once the gravel stocks have been sold push the topsoil and OB stockpile back into the exhausted quarry panel 1, scarify and seed with local native vegetation

Continue with the excavation and rehabilitation cycle

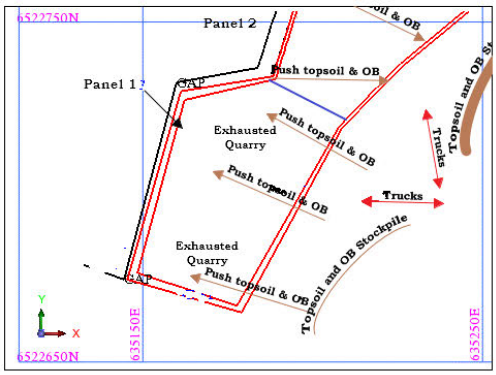


Figure 4 DMSF Mining Sequence with pit depths and topsoil/OB stocks

4.3 Details of the Mining Method

Mining will utilise a 30 tonne excavator. There will be no drill and blast and no dozer ripping. Mining will be on a free dig basis.

There will be no treatment on site.

The gravel horizon will be excavated and stockpiled adjacent to the excavation. On sale, the gravel will be loaded onto trucks using either the 30 tonne excavator or a 24 tonne front end loader. Bucket tonnages measured with a weigh scale.

4.4 Depth of the Historical and Proposed Excavation

The DMSF owned farmlet was historically mined for gravel, date unknown. The historical workings are roughly 0.4 to 1.3m deep and the outline of the historical quarry is displayed in figures 2 to 5 above.

The maximum depth of gravel unearthed in the exploration pits shows the gravel to be to a maximum depth of 1.6m with approximately 100 to 200mm of overburden (refer plans 4&5 above).

Therefore allowing for the following below, it is expected that the DMSF Burracoppin Gravel Quarry will be mined to a maximum depth of 2.1 meters.

1 1.6 m maximum depth
2 0.2 m maximum overburden
3 0.3 m operator error, (allowance)
4 Total = 2.1 m

4.5 Depth and nature of the overburden

The exploration pits, show the soil profile to be a thin zone of largely yellow to greyish gritty clay 100 to 150mm in thickness with minor (5 to 12%) gravel residues. The overburden appears to be a weathered to clay residue of the underlying granite.

The strongly weathered granite penetrates up to 2 meters depth within the proposed pit area.

In 2 separate locations the overburden increases to a maximum of 300mm however this is more of a local anomaly than common place within the proposed pit area.

The entire pit has an area of 25,500m2, hence at an average of 150mm in thickness and a bulk density of 1.6t/m3 the total topsoil and OB for the project = 6,000 tonnes or approximately 1,000 tonnes per mining parcel. This volume will easily fit into the proposed TS & OB windrow stockpiles.

4.6 Method by which existing vegetation, TS & OB will be removed

DMSF - Burracoppin Gravel Quarry

Ortho-rectified Plan displaying gravel thickness (m), OB & TS stocks, historical pit, tracks roads, fences and the current pit

Figure 5 The ortho-rectified image of the mine layout

4.6.1 Existing Vegetation within the proposed mining area

Figure 7, below, accurately & clearly displays the vegetation within the proposed mine layout area.

The majority of the area (approximately 70%) is completely cleared of vegetation and would be immediately suitable for farming. The southern portion was completely cleared however has a few years of regrowth. My comment on this area is "It is as though when the farmer aged he couldn't be bothered to squeeze his machinery into the tight southern portion."

The area of regrowth is consistent with the classification of "Scattered Vegetation" depicted in Table 1 (page 6, not referenced) within the Native Vegetation Handbook for the Shire of Merredin, authored by Sarah J Weaving.

Scattered Vegetation is defined by S Weaving as:

- No understory
- Parkland cleared, ie at most scattered single trees
- No significant signs or chance of regeneration

The sparse vegetation consists of scattered bushes and shrubs and also some poison weed that is detrimental to sheep and cattle.

Table 1.

Vegetation classed as "remnant vegetation" has one or more of the following characteristics (Beeston *et al.*, 1993) :

- Most closely reflects the natural state of vegetation for a given area.
- Has an intact understorey (if forest or woodland).
- Has minimal disturbance by agents of human activity.

Vegetation classed as "modified vegetation" has one or more of the following characteristics:

- Degraded understorey (ie. reduction in the number of native species, includes weeds).
- Obvious human disturbance- clearing, mining, grazing, weeds.
- Affected by salt.
- Narrow corridors of vegetation (usually along roads and railway lines or windbreaks), which are more likely to be affected by edge effects.

Vegetation classed as "scattered vegetation" have:

- No understorey.
- Parkland cleared ie. are scattered single trees
- No significant signs or chance of regeneration.

researchlibrary.agric.wa.gov.au/cgi/viewcontent.cgi?article=1015&context=nat_veg

Table 1 Remnant Vegetation Classification Table (Beetson et al 1993)

4.6.2 Method of clearing OB and topsoil

As a commodity, gravel is sought after however does not command a high price. Therefore, in order to reduce additional costs, ie double handling of the gravel the mining plan is to compartmentalise the mining into 6 panels of approximately 50m in length, N to South.

The overburden and topsoil from each mining panel, 1 panel at a time, will be stockpiled on the eastern side of the excavation as shown in Figure 4 above.

It is planned that the scrub, the topsoil and the overburden contained within the pit boundary for each separate panel will be removed, scraped off using a either front end loader or an excavator.

The topsoil will then be stored in windrows, at a distance of approximately 10m east of the pit. The plan is to allow the excavator to excavate the gravel from the last slice of the panel and side-cast onto the strip between the pit design and the windrow enabling access for trucks to remove the remaining excavated gravel.

The ore will be mined in strips approximately 10 m wide starting from the west and stockpiling the ore on the eastern side. Once a 50m (N-S) panel of gravel is removed the plan is to immediately rehabilitate the exhausted panel of the quarry.

Rehabilitation will be completed by pushing the scrub remnants, the topsoil and the overburden back into the shallow excavation and then scarifying and seeding the remnant surface and the quarry to promote regrowth.

4.7 Access, thoroughfares to be constructed and truck volume

4.7.1 Project Access

Access will be through a farm boundary gate, in the southern portion of the property, via the bitumised portion of the Goldfields highway, north of the Great Eastern Highway (refer figure 5 above).

4.7.2 Project roads

Figure 5 also displays the existing farm track that will be upgraded and used as the mine road. Truck turning areas will be required and constructed at the windrow openings to enable access for trucks to remove the stockpiled gravel.

4.7.3 Number and size of trucks and the route leaving site

It is difficult to forecast the average number of trucks entering and exiting the site. Many factors influence this forecast, sales volume, duration to complete the round trip (quarry to destination and return) and sales frequency. If one estimates the maximum set at 2,000 tonnes per day this equates to 33 trucks per day.

The trucks that will be used are 50 to 60 tonne side and rear tippers, truck and trailer. They are industry standard trucks for the Wheatbelt and they will either go east on the Gt Eastern highway or they will head west.

Gravel use is widespread throughout the Wheatbelt and the gravel will likely be used by farmers, small business and the local government.

4.8 Improvements

There is no plan for any buildings, water supply, treatment plant, tanks or other improvements to be built on the mining project.

4.9 Drainage

The proposed quarry sits on the shoulder of a broad and gently sloping hill and as such has excellent drainage into an existing dry creek bed (refer figures, 2 to 5).

On completion the quarry should present an excellent trap for modest amounts of meteoric water. There will not be enough volume for standing pools or dams of water however there will be additional to promote regrowth in the rehabilitation areas.

4.10 Measures to minimise nuisance, erosion and general public safety issues

4.10.1 Sand drift and dust

Sand drift is not expected to present an issue as there is no distinct sand that will be mined. The gravel to be mined has a proportion of inherent clay and once the stocks get wet the clay forms a crust which inhibits the creation of large volumes of dust that might create an issue.

Also, the quarry is approximately 100m from the boundary fence therefore is highly unlikely to impact outside of the farm.

There are no adjacent neighbours, only the highway to the east and the railway to the west.

There will be signage at the main and only entrance to the project. The Signage will stipulate the (PPE) personal protective equipment measures to be used by personnel on site and approved visitors whilst the quarry is operational.

4.10.2 Erosion

The proposed quarry will be mined to a maximum depth of 2.1 m with the walls on a slope angle of 45 degrees. The natural rill angle for this material is 38 degrees therefore the potential peripheral erosion of the pit is close to nil.

4.10.3 Watercourse siltation

This is not applicable. There is a creek bed nearby however this is for rain event runoff and does not contain water for 99.99 % of the year.

4.10.4 Dangers to the General Public

There will be signage at the main and only entrance to the project restricting access to the project and warning of potential hazards. The Signage will stipulate the (PPE) personal protective equipment measures to be used by personnel on site and approved visitors whilst the quarry is operational.

4.11 Measures to comply with the Noise Regulation Act 1997

Table 2 below provides a chart of allowable noise limits from the Noise Regulation Act 1997.

Environmental Protection (Noise) Regulations 1997
Part 2 Allowable noise emissions
Division 1 General provisions
r. 8

Table 1

Type of premises receiving noise	Time of day	Assigned level (dB)		
		$L_{A\,10}$	$L_{A\,1}$	$L_{A\,max}$
Noise sensitive premises: highly sensitive area	0700 to 1900 hours Monday to Saturday	45 + influencing factor	55 + influencing factor	65 + influencing factor
	0900 to 1900 hours Sunday and public holidays	40 + influencing factor	50 + influencing factor	65 + influencing factor
	1900 to 2200 hours all days	40 + influencing factor	50 + influencing factor	55 + influencing factor
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays	35 + influencing factor	45 + influencing factor	55 + influencing factor
Noise sensitive premises: any area other than highly sensitive area	All hours	60	75	80
Commercial premises	All hours	60	75	80
Industrial and utility premises other than those in the Kwinana Industrial Area	All hours	65	80	90

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Published on www.legislation.wa.gov.au

Table 2 Noise Regulation Act 1997

And table 3 below provides the maximum noise levels from construction equipment.

The equipment proposed complies with the noise regulation act of 1997 as does all roadworks construction and earth work activity.

1.1.1. Table A17.1 provides indicative construction equipment and typical noise levels associated with the activity.

Table A1.1: Indicative Construction Equipment and Associated Noise Levels

Phase	Activity	Equipment	Quantity	Sound Power (dBA)	ONTIME (percent)	ONTIME CORR (dB)	Corrected Sound Power (dBA)	Combined Sound Power for Activity (dBA)
Advance Works	Utility Diversions	Vibrating Roller Small	1	102	10	-10	92	**105.0**
		360 Excavator, 15T	1	97	50	-3	94	
		Hiab	1	105	25	-6	99	
		Dumper, 2T	1	105	50	-3	102	
		Pick up	1	102	25	-6	96	
Road Works	Site Set-up	Hiab	1	105	25	-6	99	**108.8**
		Small Vibrating Roller	1	102	50	-3	99	
		360 Excavator, 15T	1	97	50	-3	94	
		Dumper, 2T	1	105	50	-3	102	
		Delivery lorry	1	109	25	-6	103	
		front lend loader	1	109	25	-6	103	
		Fork lift	1	99	25	-6	93	
	Earthworks	360 Excavator, 30T	1	103	75	-1.2	101.8	**112.5**
		360 Excavator, 30T	1	103	75	-1.2	101.8	
		360 Excavator, 20T	1	99	75	-1.2	97.8	
		40T Dumper truck	1	107	50	-3	104	
		40T Dumper truck	1	107	50	-3	104	
		40T Dumper truck	1	107	50	-3	104	

A9P12-AMJ-ENV-X_ZZZZ_ZZ-RP-EN-0001 transport.gov.scot/media/42094/appendix-a171-typical-construction-plant-and-noise-levels.pdf A17.1-1

Table 3 Table of indicative Construction Equipment & Noise Levels

A comparison of the tables displays the fact that the maximum volume of the equipment marginally exceeds the allowable limit however the volume measurements were taken from externally on board positions on the machinery. The volume levels drop significantly when the measurements are taken at a distance of 10m from the machinery.

At no time should an employee or visitor be within 10m of the operating machinery.

The Signage will stipulate the (PPE) personal protective equipment measures to be used by personnel on site and approved visitors whilst the quarry is operational.

4.12 Report detailing "the existing vegetation and the anticipated effect the proposed excavation will have on the environment in the vicinity of the land."

4.12.1 Existing Vegetation

The DMSF owned property P061250 Lot 812 was historically was completely clear-felled for farming purposes. After this event there was some regrowth on the periphery of the farm boundary.

Figures 6 & 7, below, and accurately & clearly displays the vegetation within the proposed mine layout area.

As shown in figure 8 below, the majority of the area (approximately 70%) is completely cleared of vegetation and immediately suitable for farming. The southern portion was completely cleared however has a few years of regrowth.

My comment on this areas is "It is as though when the farmer aged he couldn't be bothered to squeeze his machinery into the tight southern portion."

The area of regrowth post farming is consistent with the classification of "Scattered Vegetation" depicted in Table 1 (page 6, not referenced) within the Native Vegetation Handbook for the Shire of Merredin, authored by Sarah J Weaving (refer table 1).

Scattered Vegetation is defined by S Weaving as:

- No understory
- Parkland cleared, ie at most scattered single trees
- No significant signs or chance of regeneration

The sparse vegetation consists of scattered bushes and shrubs and also some poison weed that is detrimental to sheep and cattle.

Figure 6 A photograph of the vegetation on P061250 lot 812 displaying sample pits

4.12.2 The effect of the Quarry on the surrounding land

When calculating the effect of the proposed excavation one must consider the Sir Charles Lyall phrase circa 1830 when he wrote "the present is the key to the past".

There is a historical excavation similar in size to the one proposed herein that has been displayed on many images in this report. (refer image 22 below).

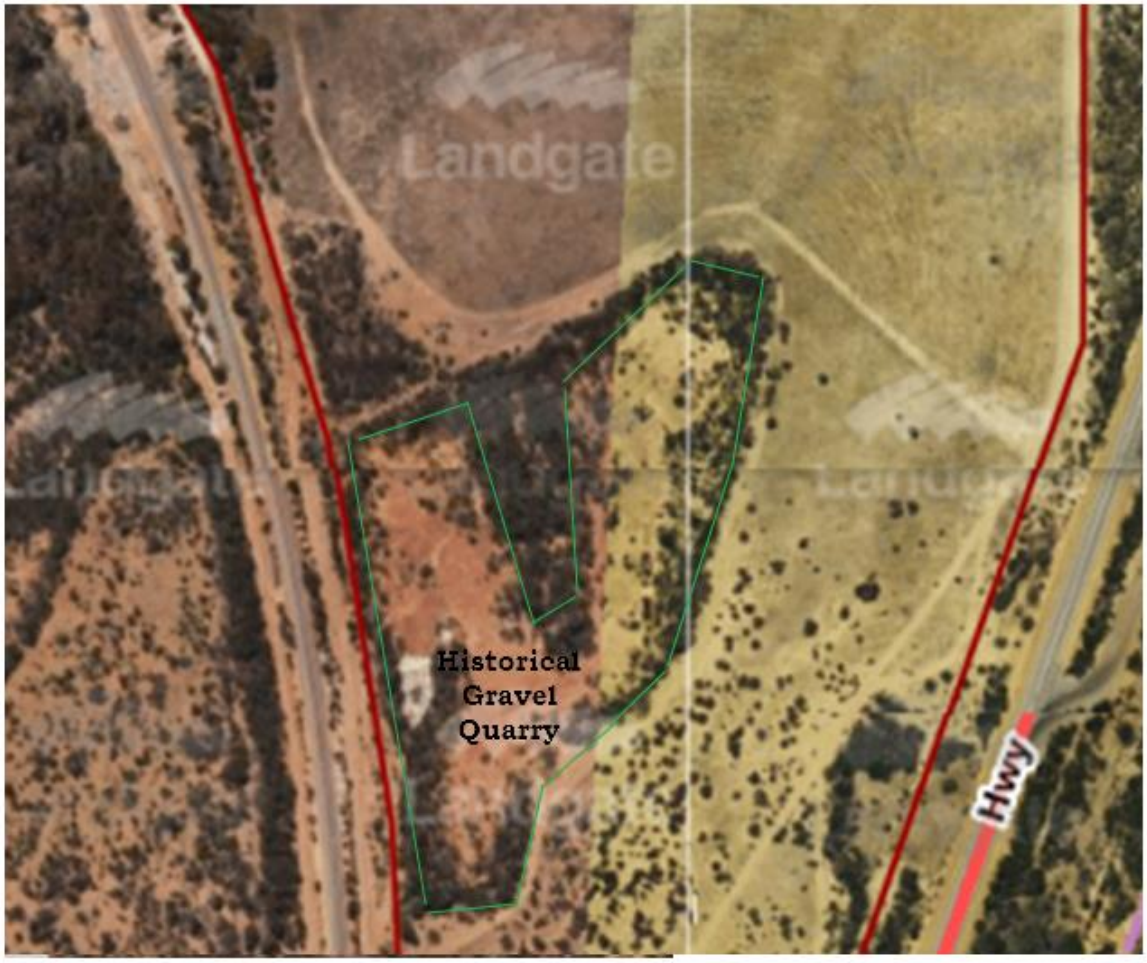


Figure 7 Close up image of the land surrounding the Historical Gravel Quarry

The presence of a historical quarry similar in size to that proposed herein provides certainty that the proposed gravel quarry will have no detrimental effect on the surrounding land.

4.13 Details of the existing shrubs & trees & measures to minimise destruction of existing vegetation

There are no trees on the block, the vegetation consists of regrowth. The dominant species is commonplace in the Merredin and Burracoppin district in sandy gravels:

1 Predominantly (+75%) Acacia bushes and shrubs.
   a. Dominantly Acacia Acuminata
   b. Some Acacia Lafyocalic
2 Minor Casurina bushes
   a. Allacasurina Compustrus
   b. Allacasurina Acudevalvus
3 Grasses weeds
4 Poison bush (Gastrolobium)

Measures to minimise the impact of clearing are as follows:

1 The containment of clearing to within the open pit shell
(Reproduced from point 9 page 8 of this report)
Clearing of the OB & TS will occur within 6 designed panels and contained to within the pit design. This effectively breaks the 300m long pit into 6 panels. (Refer figure 4)

Each panel is approximately 50m long and will be mined from the South to North.

2 The use of existing roads and tracks
The use of existing roads and tracks will minimise additional clearing required.

3 The "Panel" mining style
The panel system ensures that only the required portions of the pit will be cleared and mined, instead of clearing a large area that may be outside of the required and economic boundaries.

4 Not erecting infrastructure
As the mining will be spasmodic, there will be no requirement for infrastructure and this measure will also minimise clearing requirements.

4.14 Measures to Screen the Excavation Site

The excavation site is wedged between a main railway and a main highway the factors listed below will reduce the visibility of the site from both transport systems. (Refer figure 8 below)

1 The location of the quarry is in the middle of the land parcel and therefore the excavation will occur from 140m to a minimum of 70m from the north side of the highway.
2 The Stockpiles of OB and TS are located on the eastern side and will screen the active mining area from the highway. It is expected that the stockpiles will be approximately 3 m high. (refer figure 10 below)
3 There is regrowth vegetation between the pit and the highway at the closest point.
4 The bushy Acacia regrowth in the wet areas provided by the historical pit, on the periphery within and just outside of the historical pit, will provide a bush screen between the pit and the railway line.

DMSF - Burracoppin Gravel Quarry

Ortho-rectified Plan displaying gravel thickness (m), OB & TS stocks, historical pit, tracks roads & proximity to road and rail

Figure 8 Burracoppin Gravel Pit - proximity to road & rail

5 Rehabilitation and Decommissioning Program

This Rehabilitation and Decommissioning Program ("RDP") has been prepared by X2M Exploration to Mining in support of a Extractive industries Licence for the Derek Mason Super Fund (DMSF) owned farm which contains the Burracoppin Gravel Project (the "Project") of DMSF.

The DMSF farmlet, Plan number 061250 Lot number 812, is located approximately 20km east of the township of Merredin on the north side of the Great Eastern Highway.

The entrance to the project is via the bitumised portion of the Goldfields Road to the north of the Great Eastern highway (see Figures 1 to 3 below).

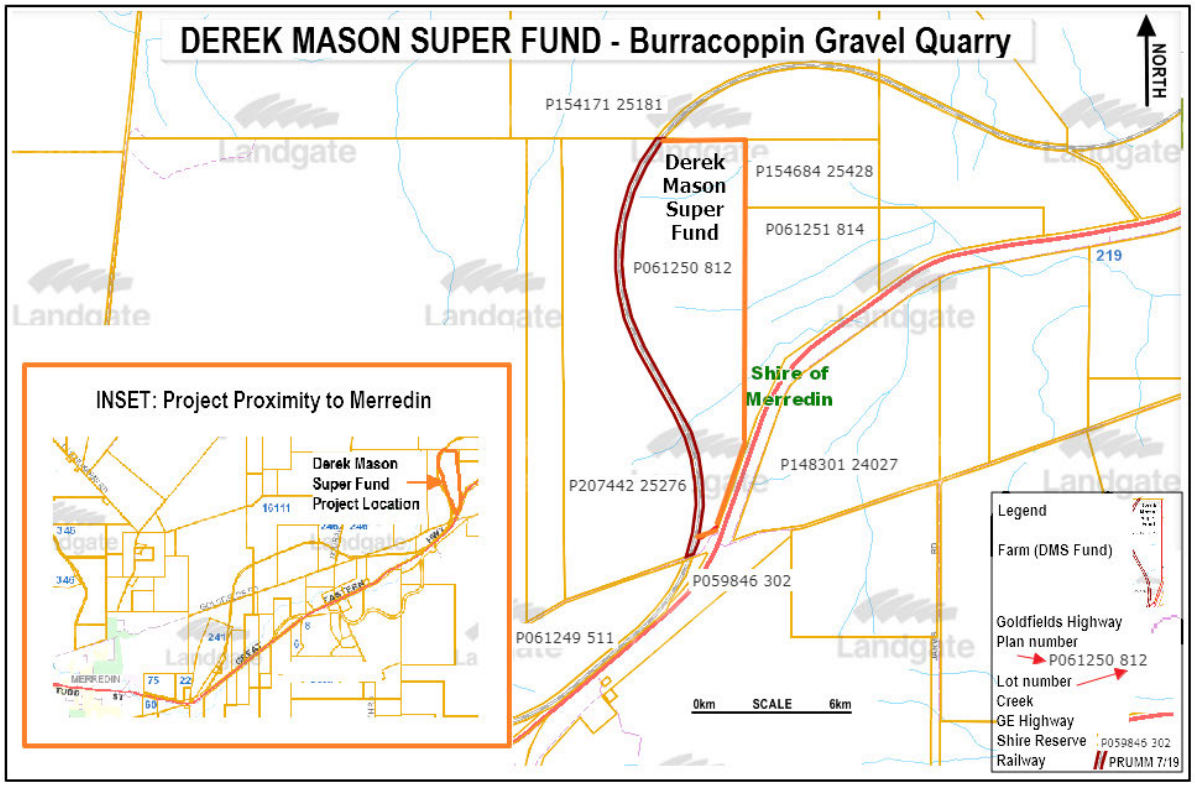


Figure 9 DMSF – Burracoppin Gravel Quarry – Project Location Diagram

The scope and structure of this RDP is as follows:

1 Outline the objectives of the Rehabilitation and Decommissioning Program

2 Whether Rehabilitation will occur progressively or on completion of the project

3 The Restoration Process

   a. How Mining faces are made safe and batters sloped

   b. Top-soil placement and revegetation

   c. Trees and shrubs to be planted and other landscaping features developed

   d. Scarification of unused tracks and disturbed areas

4 Maintenance of rehabilitated areas

5 Removal of buildings, plant, waste and final site clean-up

5.1 The Objectives of Rehabilitation and Decommissioning Program

On completion of the mining, the objective of the Rehabilitation and Decommissioning Program (RDP) the area of will be to allow the area to regenerate to the pre farming natural state.

Decommissioning will consist of removing the excavator and trucks from site once the rehabilitation program is completed. There will be no buildings or infrastructure associated with this quarry.

The following objectives have been derived for rehabilitation and decommissioning of the area disturbed by the project:

- The mine site will be safe to humans and fauna
- Mining and rehabilitation will create a landform that is stable and with land use capabilities and/or suitabilities as determined in the Rehabilitation Management Plan (RDP)
- Mine wastes and disturbed land will be rehabilitated so that they are non-polluting and self-sustaining or to a condition where the maintenance requirements are consistent with an agreed post-mining land use
- Surface and ground waters that leave the project area will not be degraded compared to their condition prior to the commencement of mining operations.
- Current and future water quality, other than water quality impacts associated with subsequent land users, will be maintained at levels that are within defined water quality criteria
- Hazardous materials will be identified and adequately managed to ensure the site is non-polluting
- Revegetation will consist of flora that is suitable for the gravelly granitic soil of the Merredin district

5.2 Restoration timetable of the excavation site

5.2.1 Restoration Timetable

The DMSF Burracoppin Gravel Quarry will be mined to a maximum depth of 2.1 meters (refer 4.4 above), which allows for operator error. The maximum depth of gravel unearthed in the exploration pits shows the gravel to be to a maximum depth of 1.6m with approximately 100 to 200mm of overburden.

The DMSF Burracoppin Gravel Quarry will be mined to a maximum depth of 2.1 meters.

- 1.6 m maximum depth
- 0.2 m maximum overburden
- 0.3 m operator error, (allowance)
- Total = 2.1 m

Regarding duration of the project, it is anticipated that the quarry will be spasmodically mined, that is as and when a contract for gravel arises. At this juncture there are no live contracts for gravel, therefore duration of the project is expected to be broadly in the order of 10 years.

DMSF
Burracoppin Gravel Quarry

Plan displaying gravel thickness (m), historical pit, current pit design, mining panels, historical pit & OB & topsoil stocks

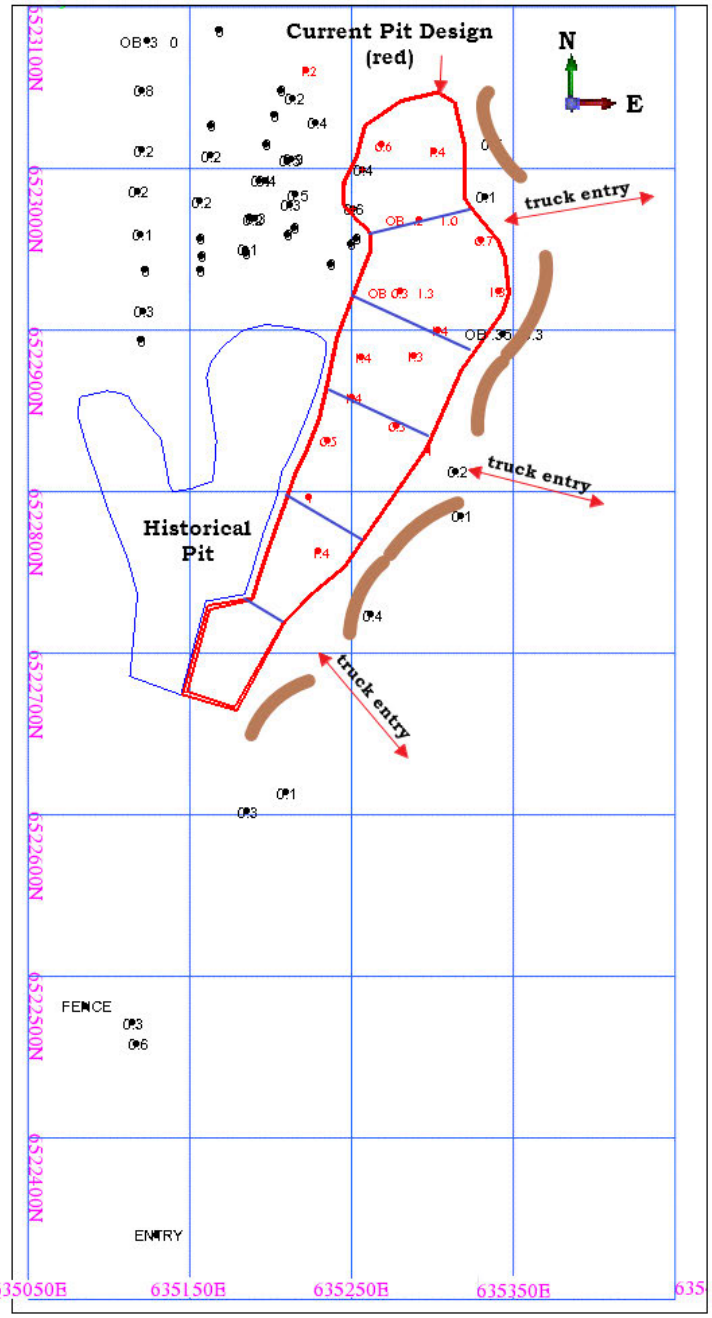


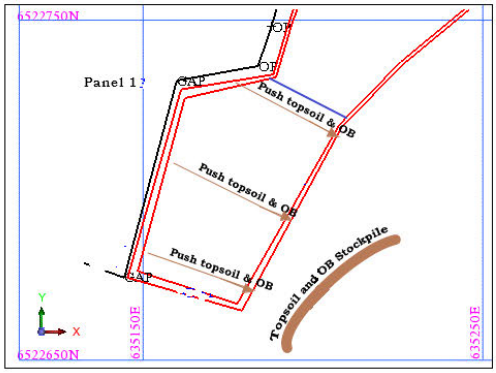
Figure 10 Burracoppin Gravel Quarry - mine layout

Figure 11 Burracoppin gravel Quarry - Ortho-rectified mine layout

DMSF - BURRACOPPIN GRAVEL QUARRY
Mining Sequence

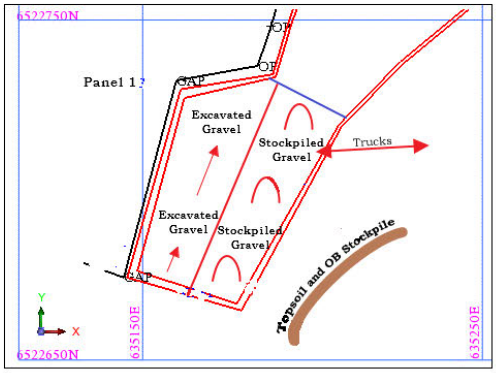
STEP 1

Panel 1
Remove the topsoil & OB from the pit area and deposit into a topsoil stockpile.
Do not remove topsoil & OB outside of the pit area



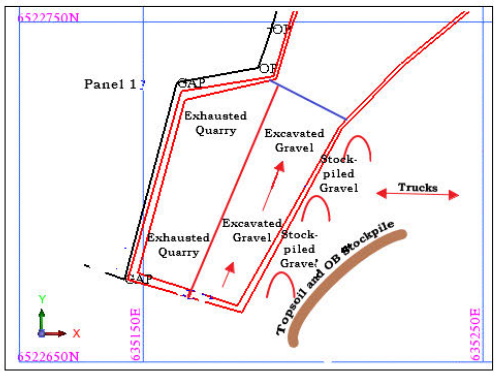
STEP 2

Panel 1
Excavate the gravel from the pit in a 10m wide slice (S to N) and side cast to the east
Remove the gravel from the ore stockpile via loader & truck or excavator & truck



STEP 3

Panel 1
Once sufficient stockpile area has been removed for sale via truck, excavate the 2nd 10m wide strip side casting to the east of the excavation



STEP 4

Panel 2
Remove topsoil and OB from panel 2
Panel 1
Once the gravel stocks have been sold push the topsoil and OB stockpile back into the exhausted quarry panel 1, scarify and seed with local native vegetation

Continue with the excavation and rehabilitation cycle

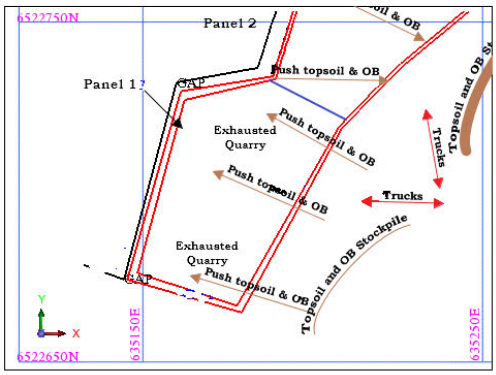


Figure 12 DMSF Burracoppin Gravel Quarry – Diagrammatic Mining Sequence

5.2.2 Progressive Rehabilitation Plan

The DMSF proposes a progressive rehabilitation plan. The progressive plan ensures that lessons can be learnt from the initial rehabilitation episodes. For example the best plant species to suit the gravelly sands and how deep to scarify. The lessons learned from rehabilitation of the initial panels will ensure that when mining is completed in the Burracoppin Gravel Quarry, the area will have effective regeneration of flora.

As stated in 5.2.1 above the DMSF has no live contracts for gravel hence it is expected that the project may last for 5 to 10 years.

The planned pit is approximately 300m long. The plan is to mine 6 panels each approximately 50m long, from the south to North and progressively rehabilitate the panels once excavation and sales of the gravel from that panel is competed.

The excavation plan is displayed in figure 14 above. The sequence will be as follows:

1 Remove the overburden from the initial (50m S-N) panel of gravel. The overburden and topsoil will be stockpiled on the eastern side of the excavation.

2 The gravel will then be mined in strips approximately 10m wide starting from the south west corner and completing in the north east corner of the panel. The mined gravel will be stockpiled immediately adjacent from where it was excavated, essentially sitting on-top of the next strip of ore to be mined from the same panel.

3 Therefore one strip of the panel will be opened and available for sale and when the strip of stockpiled gravel is sold and removed the next strip of gravel can be excavated.

4 Once exhausted of gravel, each panel of the pit will be progressively rehabilitated.

5.3 The Restoration Process

5.3.1 How Mining faces are made safe and batters sloped

Mining faces of the completed quarry will generally be less than 1 meter high to a maximum height of 1.1m. During mining the batters will be sloped to less than the natural rill angle of 38 degrees, using the same excavator that is used for mining.

The angle of <38 degrees over such a shallow height (<1.1m) will provide a stable landform that can sustain regeneration and will pose no threat to humans or fauna.

5.3.2 Top-soil placement and revegetation

Prior to mining, a 50m long (South to North) segment of the pit will be cleared of topsoil (TS) and overburden (OB). The topsoil will be stockpiled as a windrow to the east of the excavation as per steps 1 to 4 of figure 14 above.

Upon completion of a panel for both excavation and sales and then completion of flattening the batter angles, the TS and OB will be re-spread over the excavated pit area by dragging the TS and OB with the excavator bucket. On completion the pit area will be scarified with the excavator teeth. Scarified is when the surface is ripped so that seeds and meteoric water can get trapped, to ensure they don't runoff and accumulate in a main trap area. This will promote seed germination and an even regrowth throughout the mined area.

5.3.3 Landscaping features developed

There are no plans for landscaping features other than making the site safe for humans and fauna and promoting the growth of local vegetation.

5.3.4 Soil type and suitable Flora

Once the topsoil and overburden has been re-spread over the quarry area re-seeding with native seeds will occur. Not all trees can grow in the soil of the DMSF property. Common tree species that can grow well in the sandy granitic soils of the property are:

- ***Eucalyptus loxophleba ssp lissophloia*** **(Smooth-barked York Gum)**
- ***Allocasuarina sp. Sheoak***
- ***Acacia acuminata***
- ***Allacasurina compestrus***

In the Wheatbelt seeds can be collected along less well travelled backroads between the months of January and March. It is at this time that the roadside trees drop their seeds onto the roads.

Seeds will be collected and stored for revegetation after the rehabilitation and decommissioning steps are completed.

There are no plans to plant trees and or shrubs during the rehabilitation. The reason for this is review of the historical excavation site adjacent to the proposed site.

The area was less than optimally rehabilitated however substantial revegetation is visible refer figure 9 above. It is expected that with the substantive proposed measures taken, as above, rehabilitation will take hold swiftly and flourish.

5.3.5 Rehabilitation lessons from the Historical pit

The historical pit (HP) displays areas of both excellent and poor rehabilitation and excellent lessons can be learned from this poignant example.

The peripheral portions of the HP feature excellent regrowth. The main reason for this is obviously the trapping of water, seeds and detrital matter, giving the vegetation the opportunity to take root.

In the central portions of the HP mined area the regrowth has been slow to regenerate. The main issue is the smoothness of the ground surface. In this area the water, seeds and detrital matter run off during meteoric events and do not get trapped.

The proposed scarification will promote regrowth by limiting the runoff. Hence the wind will blow the seeds and detritals in they will get trapped and during meteoric events the ensuing water will provide the opportunity for the seeds to germinate and take hold.

5.3.6 Rehabilitation Plan for the historical pit

As a part of the rehabilitation process of the Burracoppin gravel quarry, the DMSF will ensure that the central portion of the HP, that is currently smooth and lacking regrowth, will be scarified and reseeded with native flora suited to gravelly sandy soil type of the granitic terrane.

This is proposed to occur during rehabilitation of the first mining panel. In that way early understanding of the rehabilitation process will ensure that, on completion of the Burracoppin Gravel Quarry, the entire mined area including the HP area is fully rehabilitated.

5.4 Maintenance of Rehabilitated Areas

On completion of the mining project and rehabilitation of the quarry, the area will be fenced off to stop access to the area. Signage will be erected to deter the entering of humans and or machinery into the rehabilitated area.

All of the tracks, the vehicle access routes and the disturbed areas not in use will be scarified and reseeded.

It is expected that by the end of the first year the initial mining panel (panel 1) will be rehabilitated. It will be increasingly obvious which rehabilitation measures work well and which ones don’t during the ensuing 4 to 9 years of the project.

5.5 The removal of buildings, plant, waste and final site clean-up

Please note, the Burracoppin Gravel Quarry will not have the resources of gravel to become a full time quarry. Best case scenario is that it will be worked spasmodically throughout the year, providing possibly 2 to 3 months of full time work. As such there is insufficient turnover to support setting up and maintaining on site infrastructure.

On completion of the project all buildings plant and waste will be removed from site. All of the cleared areas, tracks and roads other than the main property access road will be scarified and re-seeded to discourage entry by humans.

Appendix 1 Shire Forms

Appendix 2 Evidence of the Datum Peg

Appendix 3 Licenced Surveyors Certificate

Appendix 4 Evidence of clause 2.2(1) & (2) – Advertising the proposal

Appendix 5 Copies of Landuse Planning Approvals

Appendix 6 Copies of Geotechnical information relating to the site

Appendix 7 Consent in writing from the owner of the excavation site