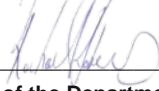


WORK PLAN SPECIFIC CONDITIONS

Work Authority WA007541

<i>Mineral Resources (Sustainable Development) Act 1990</i>	
Tenement Number:	WA007541
Plan Number:	PLN-001536
Work Plan Statutorily Endorsed	
Signed:	
Delegate of the Department Head	
Date:	26/05/2023

EARTH RESOURCES REGULATION

1.1 The Work Authority holder must undertake and provide the department with a copy of a stability assessment once 5m of sand resource is exposed (within the initial excavation) and following this a stability assessment report every 5 years.

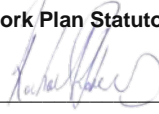
Department of Energy Environment and Climate Action

- 2.1 Before works start, the work authority must advise all persons undertaking the works on site of all relevant conditions and associated statutory requirements or approvals.
- 2.2 Within the area of native vegetation to be retained and any tree protection zone associated with the permitted use and/or development, the following is prohibited:
- a) Any vehicle or pedestrian access, trenching or soil excavation, and
 - b) Storage or dumping of any soils, materials, equipment, vehicles, machinery or waste products, and
 - c) Entry or exit pits for underground services, and
 - d) Any other actions or activities that may result in adverse impacts to retained native vegetation.

**ADVERTISED
PLAN**

**Work Authority WA007541
Work Plan (WA) PLN-001536**

Licence Ownership Details	
Licensee	Lang Lang Sand Resources Pty Ltd
Registered Address	c/- The Practice Level 10, 369 Royal Parade Parkville Victoria 3052

<i>Mineral Resources (Sustainable Development) Act 1990</i>	
Tenement Number:	WA007541
Plan Number:	PLN-001536
Work Plan Statutorily Endorsed	
Signed:	
Delegate of the Department Head	
Date:	26/05/2023

**ADVERTISED
PLAN**

Plan Summary Details	
Project Name	Lang Lang Sand Resources Pty Ltd
Plan Description	See section 1.2 of attached Work Plan Description (WA007541_WP_Description_Feb2023.pdf)

Area Details	
Property Name	Lang Lang Resources
Address	5575 Sth Gippsland Highway
Suburb / Town	Lang Lang
Postcode	3984

Land Tenure (ownership) details	
Land Tenure Type	The site is owned by operator (freehold)
Depth Limitations	Yes
Depth Limits	15.24 metres

Resource Type	
WA Commodity	Sand
WA Primary Commodity	Sand
Total Resource Estimate	13,500,000.00
Unit of Measure	Tonnes

Proposed Final Depth of Extraction

Estimated Max Terminal Depth	30.00 metres
Batter Slope Angle	degrees

Top soil, overburden and subsoil disturbance	
Est Volume of Top Soil	165,000.00
Unit of Measure Top Soil	Cubic metres
Est Depth of Top Soil	0.25 metres
Est Volume of Overburden	5,100,000.00
Unit of Measure Overburden	Cubic metres
Est Depth of Overburden	7.00 metres
Area of Disturbance	84.30 hectares

Operation Type	
Operation Type	Dry open pit; Wet open pit; Dredging
Operation Type – Other	

Plant, Equipment and Method
See sections 4.1 and 4.2 of attached Work Plan Description (WA007541_WP_Description_Feb2023.pdf)

Operating Hours (24 Hour)			
	Above Ground Operations	Sales	Processing
Mon-Fri Start	6:00	6:00	6:00
Mon-Fri End	18:00	18:00	18:00
Sat Start	6:00	6:00	6:00
Sat End	18:00	18:00	18:00
Sun Start	N/A	N/A	N/A
Sun End	N/A	N/A	N/A
Public Holiday Activity	No	No	No
Operational hours Clarification	Works outside of these hours is only for essential maintenance unless otherwise authorised.		


**ADVERTISED
PLAN**



*Mineral Resources (Sustainable Development) Act
1990*

Tenement Number: WA007541

Plan Number: PLN-001536
Work Plan Statutorily Endorsed

Signed: 
Delegate of the Department Head

Date: 26/05/2023

Work Plan Description

for

Extractive Industry Work Authority WA007541

RRAM Designation:- PLN-001536

Lang Lang Sand Resources Pty Ltd



Lang Lang Sand Resources Pty Ltd
GM Strategy & Development:- Kelvin Sargent

Site Address: 5575 Sth Gippsland Highway, Lang Lang

Office: Suite 2 Level 1, 20 English St
Essendon Fields Vic 3041
Ph (03) 9408 0666 Mob 0402 534 467
kelvins@acm.com.au
www.acm.com.au

Project No. A25_005
February 2023

**ADVERTISED
PLAN**

Table of Contents

1. PLAN DETAILS	3	2. AREA DETAILS	18
1.1. INFORMATION.....	3	Property Name:	18
Plan ID.....	3	Street Address:	18
Tenement	3	Area:18	
Plan Type	3	Land tenure:	18
Author3		Depth limitation.....	18
Project name:.....	3	3. MINERALS & EXTRACTION	18
1.2. PLAN DESCRIPTION:	3	WA Commodity.....	18
1.2.1. GENERAL GEOLOGY.....	4	WA Commodity PRIMARY	18
Site Geology	5	Total resource estimate.....	18
Geological Investigation.....	5	Maximum terminal depth of extraction.....	18
Estimated Resource	5	Overall slope angle (maximum of terminal batters, prior to rehabilitation)	18
Current and past land uses.....	6	Top soil volume and unit of measure	18
1.2.2. QUARRY OPERATIONS	6	Topsoil depth.....	18
Size of extraction area.....	6	Overburden volume and unit of measure	18
Method and scale of operation.....	6	Overburden depth.....	19
Sand processing methods and facilities.....	7	Area of disturbance (in hectares).....	19
Waste Disposal Methods and Facilities.....	7	Maximum disturbance at any time (in hectares).....	19
Stockpiling Facilities.....	8	4. OPERATIONS	19
Other Quarry Infrastructure.....	9	Operation type	19
1.2.3. EXTRACTION AREA.....	10	4.1. Plant & Equipment:.....	19
Current Open Area.....	10	4.2. Processing Plant	20
Additional area to be opened	10	Derelict and redundant plant.....	20
Maximum area to be opened at any time.....	10	Equipment Location:	20
Volume of extraction.....	10	Location of topsoils, overburden and product	20
1.2.4. EXTRACTION METHOD AND PROCESSING.....	10	Dewatering equipment:	20
Storage of Clean Water.....	10	Location of water bores and pumps:	20
Storage of Sediment-laden Water.....	11	Infrastructure	21
Storage of processed slimes.....	11	Site Security	21
Depth of extraction:	11	Operation hours:.....	21
Proposed stages of extraction.....	11	5. PLAN RELATED DOCUMENTS	21
Design of extraction pit including number of benches and slope configuration	13	Work Plan Area	21
Groundwater	14	Regional Plan	21
Depth of Groundwater	14	Site Layout Plan Area	21
Dewatering Activities	14	Risk Management Plan	21
Groundwater Management Plan	14	Community engagement plan:.....	22
Vegetation clearing.....	14	Rehabilitation plan:	22
Blasting Activities	15	Indicative time length between completion of extraction and rehabilitation	22
Surface Water Management	15	6. ATTACHMENTS	24
Drainage diversion	15	Work Plan Attachments.....	24
Sensitive Receptors	16	Supporting Documents.....	24
Heritage sites.....	17		
Certificate of Title	17		
Planning Property Reports.....	17		

ADVERTISED PLAN

Revision History

Document Date	Version	Description	Issued By	Reviewed By	Approved By
Jun 2021	V1	1 st preliminary draft of Work Plan	BCA Consulting	K Sargent	
Jan 2022	V2	2 nd preliminary draft of Work Plan	BCA Consulting	K Sargent	
Mar 2022	V3	1 st draft submitted to ERR	BCA Consulting	K Sargent	K Sargent
Aug 2022	V4	2 nd draft submitted to ERR	BCA Consulting	K Sargent	K Sargent
Feb 2023	V5	3 rd draft submitted to ERR	BCA Consulting	K Sargent	K Sargent

1. PLAN DETAILS

1.1. INFORMATION

Plan ID

PLN-001536

Tenement

WA007541

Plan Type

Work Plan (WA)

Author

Basil Natoli / Colin Thornton / Michael Stevenson

Project name:

Lang Lang Sand

**ADVERTISED
PLAN**

1.2. PLAN DESCRIPTION:

This Work Plan describes the development and operation of a green fields sand quarry located at 5575 South Gippsland Highway, Lang Lang for Lang Lang Sand Resources Pty Ltd (LLSR). This Work Plan has been prepared in accordance with the requirements of the *Mineral Resources Development Act 1990* and the *Mineral Resources (Sustainable Development) (Extractive Industries) Regulations 2019* and incorporates the risk based approach described by the Earth Resources Regulation, Department of Jobs, Precincts and Regions, Victoria (the Department), guidelines *Preparation of Work Plans and Work Plan Variations*, December 2020.

Lang Lang Sand Resources Pty Ltd propose to develop a sand extraction and processing operation on private land. The proposal has been assigned Work Authority number WA007541 and Work Plan number PLN-001536, and is located approximately 5km south-east of Lang Lang township, 7km west of Nyora and 80km south-east of Melbourne, see Figure 1 Regional Plan. There are several operating sand pits adjacent and close to this site.

Lang Lang Sand Resources Pty Ltd is a subsidiary of Aurora Construction Materials (ACM) who operate several sites in the Melbourne Region producing aggregates, crushed rocks and concrete for use in construction. This Lang Lang sand resource will further compliment their existing business.

The quarrying will involve, through a series of stages, dry extraction down to approximately 4m depth and then extraction below groundwater down to a maximum depth of 30m (refer to Figure 3 Site Layout Plan). Extraction below the groundwater level will be undertaken by dredge, grab crane or dragline. Terminal batters will be developed to profiles of 1V:3H (approx. 18 deg) above groundwater level and 1V:2H (approx. 26 deg) below groundwater level. The upper batters will be rehabilitated with a beaching bench established at the standing groundwater level. Ultimately, the rehabilitated landform will be a central water body with peripheral land suitable for agricultural activities (e.g. grazing).

A shallow waterway diversion will be required to move the existing minor drainage line running centrally through the site to a constructed waterway along the northern boundary. This will be constructed and rehabilitated early in the quarry development and will remain in that location.

Sand will be either trucked or pumped to a sand washing and processing plant which will be established at the western end of the quarry. The slimes produced will be dewatered and consolidated and then blended

with overburden, interburden and plant oversize / waste materials for onsite use or in pit disposal. Return water from the processing plant, along with runoff from processing and stockpiling areas via a sediment / interceptor trap, will be managed with an in pit water storage walled off from the remainder of the extraction area. The output from WA007541 is expected to range from 250,000 to 350,000 tonnes per year of predominantly fine to medium washed sand products for use in concrete and construction. Based on this anticipated production output, the site could be in operation for 45 years, however it is noted that production may increase as demand requires.

A Virtual Site Consultative Meeting was conducted on 20th October 2020, and attended by representatives from Earth Resources Regulation (ERR) within the Department of Jobs, Precincts and Regions. (DJPR), Cardinia Shire Council (CSC), DELWP, EPA, VicRoads, Melbourne Water (MW), Southern Rural Water (SRW) and AusNet Services.

The purpose of the consultative meeting was to outline the development proposal and introduce the proponent to the referral agencies. The site meeting gave the referral agencies the opportunity to raise any issues or concerns that needed to be addressed in the proposal Work Plan. The issues identified at the meeting, as well as feedback received from these agencies following the meeting have been addressed and incorporated in this Work Plan application.

ADVERTISED PLAN

1.2.1. GENERAL GEOLOGY

The following description is taken from the GHD geotechnical assessment undertaken for this proposal.

The proposed quarry site lies approximately 7 km inland from the eastern shores of Western Port Bay. The area is situated within a tectonic depression, known as the Western Port Sunklands. The sunklands are bounded to the west of Western Port Bay by the Tyabb Fault, and to the east by the Bass and Heath Hill Faults (GeoVic, 2014; Geoscience Australia, 2020), forming a horst (Mornington Peninsula bedrock ridge) and graben (Port Phillip Sunkland, Western Port Sunkland) sequence (McAndrew & Marsden, 1968).

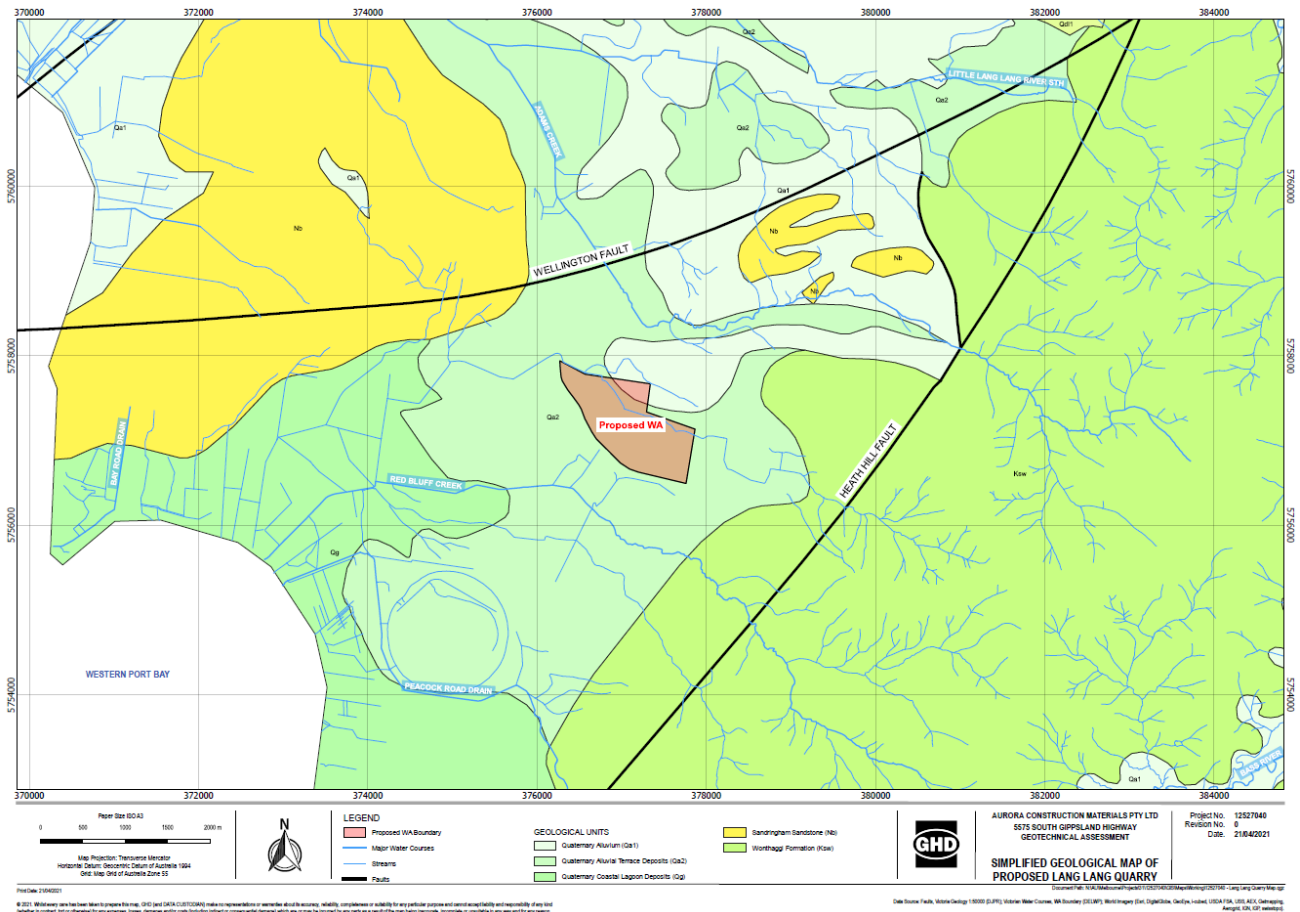
The proposed quarry site is situated on a graben (Western Port Sunklands), downthrown relative to the Mornington Peninsula bedrock to the west and the South Gippsland Highlands to the east. The extents of the sunklands are defined by the Tyabb Fault to the west, and the Heath Hill Fault to the east (GeoVic, 2014). Within the sunklands, the quarry site sits in a slightly elevated zone known as the Lang Lang Lowlands, shown in the geological map below, delineated by the Lang Lang Fault to the north-west and the Heath Hill Fault to the south-east.

The area in the vicinity of the proposed quarry site consists of 3 main stratigraphic units, as follows (from oldest to youngest):

- Wonthaggi Formation (Ksw)
- Sandringham Sandstone, formerly known as Brighton Group (Nb)
- Unconsolidated Quaternary Deposits (Qa2, Qa1 and Qg)

A geological map of the proposed quarry site and the surrounding region is presented below.

Additionally, there is no potential acid sulphate soils shown within proximity of the site in the available geological mapping or the state government acid sulphate soil mapping (Coastal Acid Sulfate Soil Hazard, Warragul sheet, T8021 (2002) or Coastal Acid Sulfate Soils Distribution – Map 3, Central Coast of Victoria). The National Acid Sulfate Soil Atlas indicates a low probability of occurrence for this site.



Site Geology

The geological evaluation for the site has determined the resource to be similar to the geology presented in the nearby pits to the north and east. The sand is predominantly fine to medium with some coarser layers at depth with clay/silt/peat layers and lenses more common in the western portion of the site.

From the geological model developed, the pit strata are expected to consist of:

- 2-300 mm of soil,
- 2-7m of overburden, averaging at 4m,
- Up to 25m of fine-medium sands with interlayered clay/silt/peat lenses.

Coarser sand layers occur mostly below 30m depth. The viability of extracting these will be reviewed later and would be the subject of a work plan variation.

Geological Investigation

In 2013, 26 aircored holes were drilled to depths ranging from 18 to 54m. Drill hole samples were logged and photographed, with potential sand resource intervals sub-sampled and tested for their Particle Size Distribution. The test results and interpretation from the drilling and testing program have been used to develop a geological model for the site which has been used for the proposed pit design and preliminary geotechnical analysis. The sand resource estimates contained within this proposal are presented below.

Estimated Resource

The following estimates have been obtained from the proposed pit design, the resource mapping, local site experience, and extrapolation.

The Fine-Medium Sand Resource contains interlayered clay/silt lenses (interburden) as well as layers of peat/organic material.

The total volume of the excavation is estimated at 14.3 million cubic metres.

- **Soil:- 165,000 cubic metres:** the top 2-300mm of material is treated as soil and will be stockpiled separately for use in rehabilitation (250mm has been used for estimate)
- **Overburden :- 2,600,000 cubic metres:** the next 3-7m of material is clayey granular material, easily diggable and has been classified as overburden. This layer varies considerably across the site from virtually zero in some areas to up to 7m in other areas. An average depth of 4m has been assumed across the extraction areas.
- **Fine-Medium sand:- 13,500,000 tonnes:** the upper levels of the resource is a fine-medium sand, with variable organic content/coatings.
- **Interburden material:- 2,500,000 cubic metres:** the resource is characterised by clayey / organic lenses and bands that occur throughout the deposit in varying thickness from 2-8m, averaging 3m of the total profile. This material is excluded from resource estimates.

Current and past land uses

The site has had a long history of agricultural use and is currently irrigated cleared pasture used for dairy farming. The farming use will continue concurrently with the sand extraction and processing operations.

The land titles comprising WA007541 are currently held by Geoffrey Pate. Under a contract of sale titles will be transferred to ACM on settlement in 2023.

1.2.2. QUARRY OPERATIONS

Size of extraction area

The total proposed extraction area is 65ha.

The total disturbed area, including site access road, access tracks around the crest of the extraction area, screening bunds, water dams and overburden storage is 84.3ha. In addition, 13.5ha will be disturbed to establish the northern waterway diversion early in the operation, which will be immediately rehabilitated to Melbourne Water requirements and then remain as a permanent waterway in the rehabilitated landform. The extent of the extraction area and disturbed area is shown on Figure 3 Site Layout Plan.

The maximum disturbance area at any time is estimated to be 58ha, including the 13.5ha to establish the waterway diversion in the earlier stages of development.

Method and scale of operation.

The expected rate of extraction will be approximately 300,000tpa of sand products, but will always be subject to market demands. Staffing levels at the site will vary according to the level of activity and will typically involve a base load of 5-7 people, with up to 10 people if stripping, washing, dry extraction production, progressive rehabilitation, site maintenance and machine maintenance all happen concurrently. Staffing levels will be a combination of permanent and part time employees and contractors.

There will be no blasting.

The site will use industry standard earthmoving equipment such as (but not limited to) excavators, dozers, scrapers, wheel loaders and off-road haul trucks for extraction above groundwater and floating dredges, grab cranes or drag lines for extraction below groundwater. The site will be operated as a dry open pit down to approximately 4m depth and then extract below groundwater to approx. 25-30m depth. Extracted materials will be moved within the site by trucks, scrapers, conveyors and slurry pipelines.

Raw feed extracted above groundwater will be delivered to the processing plant area for wet processing or dry screening. The sand processing plants will be located centrally within the Work Authority area, see Figure 3 Site Layout Plan.

**ADVERTISED
PLAN**

Soil will be stripped and either hauled directly to prepared rehabilitation areas or stockpiled for later use in rehabilitation. Soil in excess of rehabilitation requirements may be sold.

Overburden will be stripped and hauled directly to areas available for progressive rehabilitation, i.e. partially backfilling completed extraction areas. Overburden and interburden will also have consolidated slimes and process oversize / waste blended with it for use in partial backfilling of excavated areas. If the areas are not available these materials will be temporarily stockpiled for later use in rehabilitation.

Sand processing methods and facilities.

The site will employ both dry and wet processing.

ADVERTISED PLAN

Dry processing involves industry standard dry screening and sizing of the raw feed. Dry screening will commence immediately and will continue in association with dry extraction for the life of the resource. Dry processing will typically occur within the Processing and Stockpiling area outlined on Figure 3 but may also occur within the excavation areas when appropriate. Dry processing typically produces mortar sands, packing sands and select fills. Soil in excess of rehabilitation requirements may also be screened for sale. Multiple mobile processing units may be employed across the site. However, the dry screened products are likely to be only a minor output from this site with most of the sand being wet processed.

Wet processing involves introducing water and attritioning the raw feed to separate clay/silt fines to produce a clean washed sand. Dry extracted sand will be fed into the plant and wet via a feed bin at the processing plant. Sand extracted with a grab crane or drag line will be placed in a dewatering and stockpiling area for trucking and/or conveying to the processing plant. Sand extracted using a floating dredge will be either pumped directly to the processing plant or pumped to a dewatering and stockpiling area for trucking and/or conveying to the processing plant.

Initial extraction will commence directly to the east of the Processing and Stockpiling area (i.e Stage 1A1) to create a void for storing process water and collecting drainage from the processing area. The walls of this in pit water storage will be formed of insitu material, retained to separate the storage from adjacent extraction stages. Overburden from this initial extraction area will be used to form a raised base for the Processing and Stockpiling area, filled and compacted, to maintain drainage away the plant and stockpiles.

The wet processing plant (Wash Plant) will comprise feed bins, attritioners, pumps, pipelines, classifiers, cyclones, conveyors, blending and stockpiling equipment as well as thickeners, sand dewatering equipment and slimes dewatering equipment. Wash Plant processing equipment will be standard industry items and will be updated/replaced as required to maintain plant efficiency, product recovery and slimes treatment (thickening, dewatering and drying).

Wash Plant underflow containing slimes will be directed to a thickener, located adjacent to the Wash Plant. Slimes passing through the thickener will be further treated with appropriate flocculating agents, dewatering and consolidation equipment. Such equipment typically includes slimes buffer tank(s), dewatering equipment (belt press/ plate press/ centrifuges) transportation equipment (conveyors/pipelines/trucks) to produce a dewatered and consolidated waste product.

There will be limited wet slimes storage required during the initial commissioning and evaluation trials to design the most appropriate slimes processing equipment, which will be managed through the in pit water storage (see below).

The site will employ (self-powered) mobile wash plant and slimes treatment units during the final stage of extraction, when the site of the Processing and Stockpiling Area is to be removed. The mobile plant will be located to the north-west side of the pit (refer to Figure 3), on a prepared hardstand for processing and stockpiling.

Waste Disposal Methods and Facilities.

Waste products produced on site include overburden, interburden, plant oversize rejects, unsaleable material and slimes. Overburden, interburden and plant oversize / rejects are natural materials containing

no added chemicals or other harmful waste products. These materials will be used initially in construction of screening bunds, plant and stockpile areas then for partially backfilling completed extraction areas of the quarry, either directly or following temporary stockpiling inside the extraction area. Overburden / interburden classification is undertaken by the Quarry Manager and is based on site experience, market requirements and plant performance and may be supported by physical testing as required. Overburden stockpiles will be located within the disturbance area as indicated on Figure 3 Site Layout Plan.

The use of slimes dewatering and consolidation equipment immediately produces slimes of a 'spadeable' consistency (typically 50-55% solids w/w). This recovers a significant proportion of the process water for reuse and eliminates most of the need for wet slimes storage cells. The consolidated slimes produced on the site will be blended with overburden / interburden and plant oversize / waste for partial backfilling of completed extraction areas, and some may be used, where suitable, in rehabilitation of upper terminal extraction batters and/or rehabilitation of the surfaces of the constructed screening bund. The blended material with consolidated slimes deposited at the bottom of the water body will be distributed so that it remains at least 3m below the seasonal fluctuations (0.25m above and below) in the final, stabilised water's surface. The capacity below RL 15.5m, down to the maximum extraction depth of 30m, below ground level, is approximately 9.0 million cubic metres, which is more than necessary to contain the volume of blended materials to be backfilled into the pit, including allowance for wetting of those materials.

The overburden / interburden, with or without consolidated slimes, may also be blended with other low grade products for sale and use as select fill, and the consolidated slimes themselves could also be sold to be blended with other materials for various select industrial uses (e.g. brick making).

The site will generate a small amount of domestic rubbish and general waste. Domestic waste includes toilet waste, office waste and general food/packaging waste from the office and amenities. Industrial waste includes redundant / discarded plant and equipment, discarded conveyor belting, discarded screen decks, discarded tyres, discarded grease cartridges, discarded oil drums and oily rags.

All domestic rubbish and general waste materials will be removed by contractors authorised to receive the waste.

Stockpiling Facilities

Soil: Stockpiling of soil will take place when the sequencing of stripping, extraction and progressive rehabilitation does not allow direct placement. Initially some soil will be used to establish vegetation on the screening bund. Soil stockpiles will then be located within or adjacent to the extraction area and close to planned rehabilitation areas. A Temporary Materials Storage and Handling Area, which will be relocated as the quarry develops, is indicated on Figure 3 Site Layout Plan for this purpose.

Soil stockpiles will be limited in height to not greater than 2m and will be located around the site at areas close to extraction crests where they will be used in rehabilitation, typically close to the terminal crest and inside the disturbance area. Soil stockpiles will be contoured and stabilised to manage erosion.

Overburden / Interburden: Stockpiling of overburden / interburden will take place when the sequencing of stripping, extraction and progressive rehabilitation does not allow direct placement in bund / hardstand construction or rehabilitation areas. Stockpiling will also occur for the purpose of consolidated slimes blending. The overburden / interburden stockpiles will be located within a Temporary Materials Storage and Handling Area, which is indicated schematically on Figure 3 Site Layout Plan.

Overburden stockpiles will be limited in height to a maximum 10m and will be within the excavation area, and will be located to not impact the overall risk profile of the site. Overburden / interburden stockpiles will have 1V:2H side slopes with a contour drain at the base of the dump to direct any runoff into the site drainage control system. Overburden stockpiles will be contoured and vegetated or otherwise stabilised to manage erosion.

Note that the majority of overburden from initial extraction stages will be used to construct the 5m high screening bund along the South Gippsland Highway (refer to Figure 3, Site Layout Plan for profile), with some overburden temporarily stockpiled on the natural surface until it is required for backfilling.

Consolidated Slimes: The dewatered and consolidated slimes out of the plant will be of a 'spadeable' consistency (typically 50-55% solids w/w) allowing stockpiling without the need for liquid or slurry containment. The consolidated slimes will only need to be temporarily stockpiled for blending with overburden, interburden and plant oversize / waste before disposal back to the pit or use in site rehabilitation. The stockpiling of dewatered and consolidated slimes will occur within either the Processing and Stockpiling area or a Temporary Materials Storage and Handling area (refer to Figure 3), which is relocated as the quarry develops. While in these stockpile areas, further water can drain from the material and such water will pass through a sediment / interceptor trap prior to returning to the in-pit water storage.

The length of time required for stockpiling will be highly variable depending on the availability of space within the pit for backfilling, the availability of overburden, interburden and plant oversize / waste, which in turn are dependent on the staging of quarry development and the variable level of oversize / waste produced from the resource. Therefore, the need for stockpiling of dewatered and consolidated slimes could vary (once suitable space is available within the pit for the backfill) from none (immediate use) up to a maximum of approximately 12 months, as overburden stripping usually occurs in the summer months.

The blending process involves mixing the materials, typically with a front-end loader and/or bulldozer, directly from the stockpiles or as it is delivered directly from the plant (via conveyor). The blended mix of overburden, interburden, plant oversize / waste and consolidated slimes will be transported back to the pit via a conveyor for deposition on the pit floor. This partial backfilling will be distributed by a continually relocated conveyor, either a floating conveyor or a conveyor with an extended boom, so that the material settles to the bottom of the water body and remains at least 3m below seasonal fluctuations in the final water's surface, avoiding any tipping of material down the pit terminal batters.

Product: Product stockpiles will be mostly located within the Processing and Stockpiling area outlined on Figure 3. Some products may also be stockpiled within dry parts of the extraction areas.

Washed sand product stockpiles will be created with dewatering cyclones, stacking conveyors, chutes, or wheel loaders. Product stockpile may be as high as 10m under the plant. Product stockpiles created by wheel loaders will typically be 5m high.

Other Quarry Infrastructure

Other quarry infrastructure is outlined on Figure 3 and includes:-

- Access road which will be sealed to the weighbridge and dispatch office with a wheel wash for trucks leaving the site;
- Managers office and amenities with visitor and worker parking located near the weighbridge;
- Shallow waterway diversion to move the existing drainage line running centrally through the site to a constructed waterway along its northern boundary. This diversion was designed by Spiire Australia Pty Ltd and reviewed by Melbourne Water (see attached flood assessment and waterway diversion design);
- Workshop, stores and maintenance area with triple interceptor trap;
- Site laboratory;
- Fuel storage;
- Mains power and backup generator. Existing power lines to the site will be relocated and upgraded;
- Internal haulage roads, drains, culverts and traffic control structures;
- Slurry and water pipelines;
- Overland conveyors.

**ADVERTISED
PLAN**

Additional activities that typically occur on the site include:

- accepting, sizing, sorting, mixing and blending of processed materials;
- stockpiling,
- materials testing,
- loading for sale and dispatching loaded materials off site.
- maintenance of access roads, haul roads and site tracks;
- maintenance, servicing and upgrading of mobile equipment, mobile plant and the sand processing plant.
- Relocation / realignment of slurry and water pipelines and conveyors

Imported Material: Any material imported as part of the Work Authority's operations will be handled in accordance with the Imported Materials Management Plan. Imported materials will typically be other processed or extracted raw sands for blending to achieve product specifications, other construction materials required for hardstand areas, roadways and ongoing civil works and potentially some 'clean fill' or mulch, if necessary, to supplement site rehabilitation. Imported sand will be stockpiled, if necessary, within the approved disturbance areas of the site but will be quickly utilised in ongoing production of quarry products. The potential impacts related to imported material are considered in the risk assessment included in the Risk Management Plans.

ADVERTISED PLAN

1.2.3. EXTRACTION AREA

Current Open Area

This work plan is for a green fields site and there is no current open extraction area.

Additional area to be opened

The total area to be opened for extraction over the operating life of the site is 65ha. The shallow waterway diversion outlined on Figure 3 will cover an additional area of approximately 13.5ha, consisting of the shallow channel itself (in the order of 1m to 3.5m deep, at its deepest point) and associated marginal surface disturbance (as indicated on Figure 3, Site Layout Plan). This will require separate approval from Melbourne Water and will be revegetated as soon as practicable after completion of construction in accordance with that approval.

Maximum area to be opened at any time

The maximum open area at any time, including the extraction area, plant area, hardstand areas and stockpile area but excluding any progressively rehabilitated areas will be approximately 58ha. This maximum will occur in the earlier stages of development while the northern waterway diversion is being established, involving 13.5ha of disturbance, and also the 5m high screening bund is being established, which involves about 6.2ha of disturbance.

Volume of extraction

The total volume of the extraction is approximately 14.3 million cubic metres insitu – not including the area of shallow excavation for the northern waterway diversion (approx. 120,000 cubic metres).

1.2.4. EXTRACTION METHOD AND PROCESSING

Storage of Clean Water.

Potable Water: There is no mains water supply on site. The weighbridge and office/amenities building(s) will be supplied with water from above ground rainwater tanks and bottled drinking water.

Clean process water will be stored in the existing above-ground ('turkey nest') dam, approx. 65 megalitres, to the west of the processing and stockpile area. This dam continues to be operated on the farm under a Registration Licence (BEE077726) for irrigation purposes with an allowance to harvest up to 90 megalitres of surface water per year. Irrigation of the paddocks will continue on the property for farming purposes while the quarry expands, so the licence will be amended as necessary to allow for industrial/commercial use as

well as irrigation. Process water will be largely sourced from the existing 261.9 Megalitre groundwater allocation (see attached use licences), both from existing licensed bores and from the pit, under the modified groundwater licence (WRK125327), i.e. from the in pit water storage within the initial extraction area shown on Figure 3, Site Layout Plan. The total capacity of these water storages is expected to be in the order of 600 megalitres.

Storage of Sediment-laden Water.

In the context of this site sediment-laden water is defined as that containing natural solids from the sand washing process and includes plant underflow, water draining from washed sand stockpiles and from dewatered and consolidated slimes stockpiles, surface water collecting within the disturbed area that is directed to sediment traps, and water collecting in sumps around the dry excavation areas.

In accordance with the adaptive Surface Water Management Plan for this site (see below), sediment-laden water (plant underflow, surface water flowing over disturbed ground, water returned from slimes, etc) will be directed via sediment / interceptor traps into the in-pit storage within the initial extraction area, next to the processing plant and stockpile area, where it is allowed to settle before being used in dust suppression, sand washing and irrigation.

Storage of processed slimes

As above, the dewatered and consolidated slimes out of the processing plant will be of a 'spadeable' consistency (typically 50-55% solids w/w) and a significant proportion of the process water will be recovered for reuse, eliminating most of the need for wet slimes storage cells. There will only need to be temporary stockpiling for blending with overburden, interburden and plant oversize / waste before disposal back to the pit or use in site rehabilitation.

As above, there will be a limited amount of wet slimes storage in the in pit water storage, to be established in the initial extraction area, to allow for initial production and evaluation trials to design the most appropriate slimes processing equipment. This storage would also be used as a contingency for any break downs in the slimes dewatering equipment. If the slimes dewatering systems are not working, slimes will still be processed through the thickener before being directed to the in pit plant water storage. Any wet slimes placed in the in pit water storage will settle and remain at the base of the storage well below the surface of the water with the water above it continuing to be utilised to supply the Wash Plant. Slimes collected in this storage can be pumped back later to the plant for consolidation if necessary, which will occur if greater than 3m depth of wet slimes were to accumulate in the bottom of the in pit water storage.

The walls of insitu material around the in pit water storage will be largely removed during the final phase of the quarry extraction. Any limited volume of slimes at its base will mix with the much greater volume of surrounding backfill material (i.e. overburden, etc. with blended consolidated slimes), which will have been deposited at the bottom of the water body throughout the operation. The surrounding backfill material, with a total backfill depth in the order of 20-25m, will be moved into the space of the in pit water storage during this final removal of the walls.

Depth of extraction:

The maximum depth of the excavation proposed in this work plan will be 30m, with the elevation of the maximum terminal depth being at approximately RL -10m at the western end of the pit.

Proposed stages of extraction

The progressive development of the extraction area is provided schematically in Site Layout Plan Figure 3.

The basic staging methodology is to start the excavation in the initial extraction area outlined on Figure 3, Site Layout Plan, and use the overburden from this area to commence constructing the screening bund along the South Gippsland Highway frontage. This construction will focus on shielding the nearest residences on the opposite side of the highway and the residence on the adjoining property to the east of the site.

Spoil, other than the topsoil, from the construction of the waterway diversion along the northern boundary of the site (approx. 83,000 m³) may also be used in constructing the screening bund, the base for the processing plant and stockpile area and internal haul roads.

The staging has been designed to allow early progressive rehabilitation of the northern and eastern terminal batters to minimise the visual impact of the operations from the south and west.

The above-ground ('turkey nest') dam will no longer be required for process water once the in pit water storage is established, but will continue to be used for farm irrigation, until ultimately it is removed during Stage 2 or 3. Process water will then be stored only in the in pit water storage (i.e. the initial extraction area). The final Stage 4B extraction will necessitate the relocation of the processing and stockpiling area to an area on the north-west side of the pit. This will be established on a hardstand initially constructed for the Temporary Materials Storage and Handling Area during Stage 3, as shown on Figure 3 Site Layout Plan. Mobile wash and slimes treatment plant will be utilised for this final stage. Once all extraction stages are complete the walls of insitu material retained around the initial extraction area will be largely removed for processing, and the process water will be sourced from elsewhere in the pit during this final phase of extraction.

The balance of land not used for quarrying and ancillary operations, and any rehabilitated areas of the site consistent with requirements, will continue to be managed for agricultural purposes (e.g. grazing) consistent with the Farming Zone of the land.

Land management priorities for the staging include:

- Surface drainage and erosion control
- Maintaining appropriate / effective visual screens through planting vegetation
- Weed control and management;
- Pest animal control and management;
- Fire management;
- Farm access and fence maintenance.

**ADVERTISED
PLAN**

All proclaimed noxious weeds on the site will be controlled in accordance with the Catchment & Land Protection Act (1994) and the recommended herbicide application. The primary objective is to ensure that noxious weeds do not contaminate adjoining land. Noxious Weed control will be carried out in accordance with the herbicide manufacturer's recommendations including the most appropriate time to ensure effective control.

Only those areas approved in the Work Plan will be opened for quarrying and ancillary operations.

The exact timing of the extraction staging will be dependent upon market and resource quality. The staging outlined on Figure 3 is indicative of the progression of the site development but will be subject to operational and resource quality requirements.

A Future Stage 5 is outlined on the Site Layout Plan but this will be subject to further approvals based on monitoring the impact on groundwater levels as the pit develops through Stage 4.

Terminal faces above groundwater will be rehabilitated as soon as practicable after they are established. The end result will be a large waterbody fringed with a 1V:5H beaching zone and a 1V:3H embankment back to natural surface levels. The beaching zone will be planted with appropriate aquatic species to control erosion and provide habitat for native fauna. The embankments will be planted with pasture grasses and scattered trees and shrubs.

The key points for sand extraction and rehabilitation are summarised below.

- Soil removed and used in progressive rehabilitation or stored in temporary stockpiles within the disturbance area. Soil in excess of rehabilitation requirements may be processed for sale;

- Overburden removed and placed in storage areas (initially the visual screening mounds along the South Gippsland Highway and part of the eastern site boundary) then used directly in partial backfilling of the completed extraction areas.
- Construction of the waterway diversion to move the existing drainage line running centrally through the site to a constructed waterway along its northern boundary.
- Dry screened products may be processed and stored in stockpiles within the extraction area or adjacent to the wet processing area.
- Raw sand for wet processing will be extracted above groundwater using conventional earthmoving equipment including excavators and scrapers. Below groundwater raw sand will be extracted using dredges, grab cranes, drag lines or similar equipment.
- Raw sand will be transported to the wash plant using dump trucks, conveyors or slurry pumps and pipelines;
- Consolidated slimes generated by the washing process will be stockpiled and incorporated with the overburden / interburden and plant oversize / waste for use in backfilling around the site.
- Water will be continually drained from any consolidated slimes stockpile areas using gravity, drains, sumps and pumps. Water removed in this manner will be recycled back to the sand washing process.
- Cut of drains, mounds and other surface water management control features will be continually updated and modified to ensure the objectives of the site's adaptive Surface Water Management Plan are met.

The extraction progress and progressive rehabilitation will be reviewed on an annual basis to ensure the visual impact of the operation is minimised and the objectives outlined in the Rehabilitation Plan are achieved.

Design of extraction pit including number of benches and slope configuration

Number of Faces

The maximum number of faces will be three. Typically, this will involve a soil and overburden stripping level averaging approx. 4m depth, then a dry sand extraction face from 2 to 5m depth and wet extraction below groundwater to approx. 20m deeper. The proposed maximum depth of the extraction is up to 30m. Extraction below this depth is not proposed at this stage but approvals may be sought once the feasibility of deeper extraction has been assessed.

Terminal Faces

Terminal batters will be developed to profiles of 1V:3H (approx. 18 deg) above groundwater level and 1V:2H (approx. 26 deg) below groundwater level. The upper batters will be rehabilitated with a 1V:5H beaching bench established at the standing groundwater level. The terminal face profiles have been verified by GHD to be safe and stable, see attached Geotechnical Assessment. However, it is acknowledged that, as a greenfield site, there is some uncertainty regarding material strength parameters and the variability of the materials within the resource. Accordingly, the Ground Control Management Plan includes a commitment to undertake an initial stability assessment review to validate assumed parameters and the slope design, once a suitable depth of material is exposed to allow such a stability assessment to address these uncertainties.

Terminal face profiles are depicted visually on the insets on Figure 4 Rehabilitation Landform.

Working Faces

Working faces and overall working batters may be locally steeper than the terminal batter design and are determined by the excavation method and material type. Working face profiles above and below groundwater are depicted visually on the insets on Figure 3 Site Layout Plan.

Safety bunds will be established along the edge of pit ramps and quarry faces. Safety bunds will be constructed at an appropriate height, width and durability to withstand forces from the vehicles moving through that area.

Working faces that are unattended for a period of greater than 12 months will be treated to manage erosion. Typical controls include diversion drains and bench drains.

All slopes/batters including excavations, roadways, stockpiles and dumps will be constructed and maintained to ensure stability. If there is a significant slope failure event, operations will cease in that area and the relevant authority notified, and the appropriate steps taken to rectify the incident.

The final extraction limit will be surveyed and marked out on the ground with yellow posts.

The extraction boundary, as defined above, is shown on Figure 3 Site Layout Plan.

Groundwater

Depth of Groundwater

Hydrogeological assessment for this proposal was undertaken by Nolan Consulting and is attached. Four groundwater monitoring bores have been installed around the site (see attached monitoring bore licence) and there are two existing licensed production bores with a combined annual allocation of 261.9ML. A fifth groundwater monitoring bore is to be located in the north-east of the site (see Figure 3 Site Layout Plan).

The pit will be operated dry down to the groundwater level which currently varies across the site from less than 1m to approx. 4m in the monitoring bores. The groundwater level will fluctuate seasonally by up to 0.25m above and below the mean level. It is expected that as the extraction area opens up that the groundwater level would reduce in the east. Refer to attached hydrogeological assessment.

Dewatering Activities

Limited dewatering may be undertaken to assist in the pit development, for overburden and interburden removal. Where this occurs the extracted water will be returned to the groundwater system within the site. There will be no off site discharge of groundwater.

Groundwater Management Plan

The adaptive Groundwater Management Plan (Appendix F of attached Hydrogeological Assessment) details an ongoing groundwater monitoring program which will be implemented. This advice also details triggers and a contingency plan which outlines mitigation measures to be undertaken if the trigger events occur (i.e. a Trigger Action Response Plan, or TARP).

Following any periodic reviews or changes in circumstances, additional triggers may be documented in the TARP associated with this Groundwater Management Plan (in accordance with the Hydrogeological Assessment).

Vegetation clearing

An ecological assessment (Norris and Schoeffel report attached) has been conducted of the site, and no areas of assessable native vegetation were identified within the proposed disturbance area. A single large tree was identified close to the eastern Work Authority boundary and the disturbance area was modified to avoid this with a 20m exclusion zone to be established around the tree.

The assessment noted that the existing site farm dam is a DELWP mapped wetland. Advice from DELWP agreeing that this area of 'mapped wetland' can be excluded from assessment is attached. Additionally, the assessment identified a few larger trees just outside of the Work Authority boundary whose Tree Protection Zones (TPZs) intruded within the Work Authority. These TPZs were potentially impacted by the shallow drainage diversion and screening bund, which are necessarily close to the boundaries, but it was found that none were impacted by the proposed disturbance.

ADVERTISED PLAN

Blasting Activities

There will be no blasting.

Surface Water Management

Due to the dynamic nature of the earthworks around the site, the detailed location of water dams, pipes, drains, sumps, pumps and other water infrastructure changes constantly with the progression of extraction and rehabilitation works. The over-riding objective of the adaptive Surface Water Management Plan for this site is to divert surface water runoff from undisturbed areas away from disturbed operational areas and to collect all runoff from disturbed areas in the quarry excavation via sumps and settling pits.

A mapped surface drainage line, Melbourne Water asset DR2504 flows from near the north-eastern corner of the site across its northern portion and exits near the northwest corner. The consulting firm Spiire Australia Pty Ltd, following engagement with Melbourne Water, have undertaken a flood assessment and designed a waterway diversion to separate this asset from the proposed extraction area (see attached flood assessment and waterway diversion design). The diversion design has received in principal support from Melbourne Water (refer to Spiire report) and will ultimately require separate approval from Melbourne Water, including the specifics of design detail and the required revegetation on completion of construction.

Drainage diversion

There are a number of constructed internal drainage lines within the property associated with the farming activities. As the pit develops across the property these will disappear and the northern waterway diversion described in the Spiire report will be constructed to transmit surface water entering the property from the east around the disturbed areas to exit into the existing drainage line near the north-western corner of the property. The diversion is designed with broad areas for floodwater storage and the flood modelling conducted by Spiire shows that the excavation will not be impacted by a 1%AEP event and the excavation will not flood.

Only incident rainfall water will be collected within the disturbance area. Surface water will be managed by the strategic location of swale drains, bunding, sediment traps and sumps to ensure water traversing over disturbed ground does not leave the site but is directed to the broader extraction area (water filled) or the in pit water storage located within the extraction area.

Incident rainfall water outside the disturbance area will be directed away from the disturb areas by the strategic location of swale drains and bunds and will be returned to the environment. Clean water as defined by EPA guidelines may be allowed to leave the site.

The layout of changing perimeter drains, pipelines, bunding and cut off drains across the site to capture water flowing over disturbed surfaces are detailed as the quarry develops in the adaptive Surface Water Management Plan.

The measures adopted when disturbing new ground are consistent with the EPA guidelines with specific actions detailed in the Risk Management Plan.

Quarry Waste - hazardous material

There are no introduced hazardous materials in the resource.

The flocculants used to settle and consolidate the slimes, which will be included in the blended mix of overburden and consolidated slimes that will be deposited in the water filled pit, are industry proven and accepted environmentally safe products. The proportion of flocculants in the blended material will be very small. The water draining from stockpiles of consolidated slimes in the Processing and Stockpiling area or a Temporary Materials Storage and Handling area (Figure 3) will pass through a sediment / interceptor trap prior to returning to the in-pit water storage.

Some of the organic coated sands and lenses of peaty materials may have the potential to generate acid if they are exposed to the atmosphere for a prolonged period. As far as practicable, the exposure of these materials will be minimised and they will generally be retained below water within the pit to avoid acidification. When such materials are extracted from the pit for processing they will be stockpiled within the Processing and Stockpiling area or a Temporary Materials Storage and Handling area (Figure 3), where runoff is collected and directed back to the in pit water storage. Any acidified runoff can be treated, if necessary, either at the interceptor trap or when drawing water from the in pit storage. The treatment utilised will be careful, measured application of neutralising agents, which is necessary, apart from maintaining water quality, to ensure that the water supply does not impact the effectiveness of the flocculants used in the processing plant.

Additionally, the sediment-laden water coming from the wash plant to the thickener will be treated, if necessary, by an automated dosing system to ensure that any acidity does not impact the effectiveness of the flocculants used in the thickener. The acidity of the water supply coming into the plant and water leaving the plant will also be monitored and treated if necessary to maintain, as far as practicable, approximately neutral conditions in the water storages.

A register of MSDS sheets of any chemicals (i.e. hydrocarbons, flocculants, neutralising agents, dust suppressants, herbicides, pesticides, copper sulphate, etc.) used or stored on the site will be maintained at the quarry office.

Sensitive Receptors

The extent of Crown land is shown on Figure 2 Locality Plan. Crown land within the vicinity of the site includes the South Gippsland Highway along its southern boundary and the Adams Creek Conservation reserve which is approx. 500m to the northeast.

Residential properties within 2km of the work authority are shown on Figure 2 Locality Plan. The nearest 4 residences are also outlined on the Site Layout Plan Figure 3.

A noise impact assessment conducted for the proposal by Enfield Acoustics (attached) indicates all aspects of the proposed operation (extraction, processing, sales) can operate in compliance with the recommended noise levels of the EPA.

An air quality impact assessment of the proposed development conducted by WSP (attached) found that the proposal will not exceed current EPA guidelines at the nearest residences.

The Beach Energy Gas Refining Facility (Bass Gas plant) adjoins the north-eastern portion of the site. WA1338 adjoins the northern site boundary and two other sand extraction operations are located just east of the Bass Gas property.

There are underground gas pipelines approx. 340m east of the site and approximately 20m north of the site boundary over a length of approximately 200m as shown on Figure 2 and Figure 3. These pipelines connect to the Bass Gas Plant and the only parts of the proposal within proximity are the proposed waterway diversion and a proposed water monitoring bore. Attached is advice from Beach Energy, dated 4 August 2022, confirming that the works for the waterway diversion are at an appropriate setback from the gas pipeline easement and requiring that the water monitoring bore be at least 30m from the easement.

Roads, bridges, pipelines, powerlines and other public assets within 2km of the site are identified on Figure 1, Regional Plan and Figure 2, Locality Plan with the powerlines and gas pipelines detailed on Figure 3.

There is an electricity easement and power poles transecting the southern portion of the site. The poles and wires are shown on Figure 3 and they will be relocated along the southern boundary before extraction begins in the southern portion of the site (Stages 2 or 3), which will be some years into the quarry operation. The proposed relocated position of the powerlines is also shown on Figure 3. Attached is advice from AusNet Services, as a chain of emails in July 2022, covering a range of considerations for relocating the powerline. AusNet Services have advised that they do not provide site specific advice until there is a formal application

to relocate the powerline, which will not be required for some years. However, the advice provided in response to our queries demonstrates that the powerline can be relocated along the southern boundary of the property generally aligned with the outer toe of the screening bund. AusNet Services advises that taller poles can be used to safely pass powerlines over the 5m high screening bund, where necessary, maintaining a 5m separation distance. While there is no requirement forbidding the planting of trees and shrubs within the future 12m wide easement, it is proposed to limit plantings on the nearest parts of the screening bund to low shrubs to avoid the need for later lopping and maintenance. There will be sufficient access (at least 10m) between the toe of the bund and the property boundary for installation of the relocated power poles and the south-eastern corner of the screening bund is angled to allow space for the redirected powerline from the neighbouring property.

The description of titles and depth limitation are presented in the Area Details Section.

As previously described, Melbourne Water waterway asset DR2504 will be diverted away from the proposed extraction area. A minimum 40m buffer between the extraction and the shallow waterway diversion channel (excluding any surficial disturbance at its margins) will be maintained along its length to ensure it is not impacted by the proposal.

Heritage sites

WA007541 is not impacted by any Aboriginal Victoria (AV) cultural heritage sensitivity areas – refer to the attached CHMP requirement declaration and self-assessment.

The Victorian Heritage register has been reviewed and Heritage Victoria advise that there are no archaeological sites or historic places currently included in the Victorian Heritage Register or Heritage Inventory within the subject area.

Certificate of Title

Copy of titles attached

Planning Property Reports

Planning Property reports are attached

**ADVERTISED
PLAN**

2. AREA DETAILS

Property Name:

Lang Lang Sand Resources Quarry

Street Address:

5575 South Gippsland Highway, Lang Lang

Area:

116.38ha

Land tenure:

Freehold:

Current Registered Proprietor

Geoffrey James Pate of RMB 5575 South Gippsland Highway Lang Lang VIC 3984

To be transferred to Aurora Construction Materials under a contract of sale in 2023.

Depth limitation

15.24m

3. MINERALS & EXTRACTION

WA Commodity

Sand

WA Commodity PRIMARY

Sand

Total resource estimate

13.5 million tonnes

Maximum terminal depth of extraction

Maximum Depth 30m, with the elevation of the maximum terminal depth being at approximately RL -10m at the western end of the pit

Overall slope angle (maximum of terminal batters, prior to rehabilitation)

18deg (1v:3h)

Top soil volume and unit of measure

165,000 insitu cubic metres

Topsoil depth

250 mm

Overburden volume and unit of measure

2.6 million insitu cubic metres plus 2.5 million cubic metres insitu of interburden

**ADVERTISED
PLAN**

Overburden depth

4m average; interburden (total) averages 3m

Area of disturbance (in hectares)

84.3ha, plus 13.5ha to establish the northern waterway diversion early in the operation, which will be immediately rehabilitated and then remain as a permanent waterway in the rehabilitated landform

Maximum disturbance at any time (in hectares)

58ha, including the 13.5ha to establish the waterway diversion in the earlier stages of development

ADVERTISED PLAN

4. OPERATIONS

Operation type

Shallow dry extraction, then wet extraction below groundwater.

4.1. Plant & Equipment:

Buildings and non-processing assets: This Work Plan is for a greenfield site and will require the initial establishment of site infrastructure. The existing site farm access road and intersection will be upgraded to the weighbridge, processing plant and stockpile area. Next will be the office, amenities, light vehicle parking for employees and visitors, truck parking, the weighbridge, workshop, fuel storage and hydrocarbon storage.

Mobile Plant

The earthmoving and mobile processing equipment will vary as demand requires. The earthmoving equipment on the site may comprise scrapers, dozers, excavators, dump trucks, graders and front-end loaders. Excavators, dump trucks and scrapers are used for stripping of overburden and for extracting and delivering raw material from above groundwater to the processing plants or raw feed Stockpiles. Extraction below groundwater can be by excavators, floating dredge, drag lines and grab cranes.

Mobile processing equipment will be self-powered dry processing screening and stockpiling units for production of packing sands, mortar sands and soil.

The front-end loaders are used predominantly for product sales and stockpile duties.

An excavator and/or front-end loader will be used for loading trucks for sales or for delivery of raw feed to the processing plants.

A water tanker truck will be available for dust suppression as required.

A dozer will be used to push up soil prior to overburden removal, push out backfill material, prepare and tidy up the quarry floor and other worked out areas, pushing overburden and for profiling overburden mounds and final rehabilitation batters.

A road grader will be used to maintain all internal roads and for the final profiling of rehabilitated areas.

Other equipment used to move materials about the site will include pumps and both fixed and floating pipelines as well as fixed and floating conveyors,

All mobile equipment will be serviced and operated by qualified personnel. Equipment will be fitted with appropriate spark arrestors, roll over structures and fire extinguishers.

4.2. Processing Plant

The Wash Plant will comprise feed bins, screens, tanks, classifiers, cyclones and thickener with associated conveyors, pump lines, attritioning and dewatering equipment. It is planned to further process the thickened slimes with a belt press or similar dewatering equipment to recover process water and reduce slimes to a 'spadeable' consistency, eliminating the need for wet slimes storage i.e. slimes dams.

The site will employ (self-powered) mobile wash plant and slimes treatment units during the final stage of extraction, when the site of the Processing and Stockpiling Area is to be removed.

Derelict and redundant plant

All derelict and redundant plant, vehicles, machinery and equipment will be stored in a designated area, out of sight of the general public, until removed or sold to a third party.

Equipment Location:

The site will operate with a combination of fixed and mobile processing plant. The location of the fixed Processing Plant and Stockpiling area is shown on Figure 3, Site Layout Plan, and will be established once a raised base has been constructed. The final stage of extraction requires removal of this processing plant and hardstand area and replacement with mobile plant located on a new hardstand area to the north-west of the pit, as indicated on Figure 3.

Mobile plant for dry processing may be located close to the extraction face as well as within the stockpiling areas near the fixed wet processing areas.

Location of topsoils, overburden and product

Overburden and soil removed from the initial extraction area will be used in staged construction of the screening bund along the South Gippsland Highway frontage as well as part of the eastern boundary and to form the raised base for the Processing and Stockpiling Area, as shown on Figure 3. This bund will remain after extraction and rehabilitation works have been completed.

The location of temporary topsoil, overburden / interburden and consolidated slimes stockpiles are shown schematically on Figure 3 Site Layout Plan, i.e. the Processing and Stockpiling Area and the Temporary Materials Storage and Handling Area. These stockpiles are dynamic and will be located within the disturbance area. Note that these stockpiles will be removed at site closure. When sufficient excavation area has been developed then overburden / interburden will be used to partially backfill these depleted areas.

Product stockpiles will be located adjacent to the relevant processing plant, see Figure 3 Site Layout Plan. Any product stockpiles from the mobile plant during the dry extraction will be dynamic, moving around the site as the upper sand is extracted, whilst wet extracted sand stockpiles will be more static, staying in the general vicinity of the Plant and Stockpile area designated on Figure 3, Site Layout Plan.

Plant oversize / waste and consolidated slimes generated from the processing plant will be blended and mixed with overburden / interburden for progressive partial backfilling worked out areas of the site.

Dewatering equipment:

If partial dewatering of excavation areas is required for overburden and interburden removal then this water will be pumped into adjoining excavations using self-powered / self-priming pumps.

Location of water bores and pumps:

There are two pre-existing licensed bores (WRK041821 and WRK066223) located near the current dairy, see Figure 3 Site Layout Plan. As the pit develops much of this licensed allocation will be accessed from the groundwater exposed in the pit, under the modified groundwater licence (WRK125327), being pumped from the water storage within the initial extraction area beside the processing plant, as shown on Figure 3. Equipment/infrastructure to move water around the site will comprise pumps, dams, tanks, pipelines and

constructed features such as swale drains, bunds and sediment dams. The location of these features will be stage dependent and will move about the site as extraction progresses.

Infrastructure

Location of workshop, storage sheds, lunchroom, amenities, site office, weighbridge, training and meeting rooms, maintenance, hardstand and Vehicle wash-down:

A workshop, storage sheds, fuel and hydrocarbon stores, amenities, site office, employee and visitor vehicle parking, weighbridge, maintenance area, hardstand area and vehicle wash-down will be located within and adjoining the Processing and Stockpiling area outlined on Figure 3 Site Layout Plan.

Site Security

Unauthorised access to the site may lead to members of the public being impacted during quarry operations and this hazard is to be managed so that the risks posed to members of the public are minimised as far as reasonably practicable. The operation adjoins sparsely occupied, private agricultural land, as well as other extractive industries and the Bass Gas plant.

The operation implements standard industry control measures for site access, which will be sufficient to minimise the risks posed. Primary site access is limited to the frontage to the South Gippsland Highway which will be signed and gated. Fencing, which will incorporate appropriate signage at intervals, is a combination of security fencing and farm fencing based on the adjacent land use. Additionally, the large screening bund will be constructed at an early stage along the entire frontage to the South Gippsland Highway, restricting access to the managed site entrance.

Operation hours:

Extraction (all earth works, stockpiling and onsite cartage):

6am to 6pm Monday to Saturday, No work Sundays or public holidays.

Sales (movement of transport vehicles into and from the site):

6am to 6pm Monday to Saturday, No work Sundays or public holidays

Processing (screening, washing, etc., incl. cartage from stockpiles):

6am to 6pm Monday to Saturday, No work Sundays or public holidays

Works outside of these hours is only for essential maintenance unless otherwise authorised.

5. PLAN RELATED DOCUMENTS

Work Plan Area

Figure 2 Location Plan

Regional Plan

Figure 1 Regional Plan

Site Layout Plan Area

Figure 3 Site Layout Plan

Risk Management Plan

The Risk Management Plan includes individual Risk Treatment Plans for each hazard and a Risk Register. These identify the quarrying and rehabilitation hazards relevant to this operation, the risks these hazards may pose to sensitive receptors, and provide detailed risk assessment and risk management. The risks are assessed in regard to the sensitive receptors that may potentially be impacted by this operation, being those

**ADVERTISED
PLAN**

in relation to the environment, any member of the public, or land, property or infrastructure within the vicinity of the work. The risk management set out in these documents includes control measures, performance standards and an outline of the relevant management systems, practices or procedures for monitoring and managing the risks.

Refer to the attached Risk Management Plan, including Risk Treatment Plans and Risk Register, for detail.

Community engagement plan:

The aim of the Community Engagement Plan (CEP) is to share relevant information about the Work Authority that may affect the community and providing reasonable opportunities for the community to express their views about activities at the site. The name and contact details of the site manager will be displayed on a sign at the Site Entrance for any members of the community to use for providing feedback. Additionally, feedback may be sent to LLSR's Head Office at Suite 2, Level 1, 20 English Street, Essendon Fields.

The CEP provides reasonable opportunities for the community to express their views about activities at the site, including the establishment and maintenance of a complaints register with the following information to be recorded:

- the date and time of the complaint;
- who the complaint was from;
- the specific issue/s raised in the complaint;
- the actions taken to address the specific issue/s raised in the complaint;
- notifying complainant with outcome.

**ADVERTISED
PLAN**

Refer to the attached Community Engagement Plan for detail.

Rehabilitation plan:

The primary objective of the Rehabilitation Plan for the site is to leave it in a safe, stable and sustainable manner and to a standard suitable for the ongoing use for agricultural activities and passive recreation.

Progressive rehabilitation and land management priorities include:

- Surface drainage and erosion control
- Maintaining appropriate / effective visual screens through bunds and vegetation
- Weed control and management;
- Pest animal control and management;
- Fire management;

All proclaimed noxious weeds on the site will be controlled in accordance with the Catchment & Land Protection Act (1994) and the recommended herbicide applications. The primary objective is to ensure that noxious weeds do not contaminate adjoining land. Weed control will be carried out in accordance with the herbicide manufacturer's recommendations including the most appropriate time to ensure an effective kill. Care will be exercised during weed control works to ensure that any natural regeneration of shrubs and trees will not be sprayed with herbicide.

WA007541 Rehabilitation Plan details the objectives, strategies, monitoring and reporting requirements as well as the criteria for progressive rehabilitation and closure.

Indicative time length between completion of extraction and rehabilitation

Progressive rehabilitation will be integrated into daily operations as much as possible to achieve a successful outcome. Rehabilitation of segments of the terminal faces will not commence until extraction has reached the terminal pit edge and design floor level.

It is anticipated that all earthworks involved in rehabilitation will be achieved within 12 months of the completion of extraction.

The maximum disturbed area at any time is estimated to be 58 hectares.

The rehabilitation concept is illustrated on Figure 4 Rehabilitation Landform.

Key aspects of this rehabilitation plan are:-

- to develop a landform with a central water body and peripheral land suitable for agricultural activities (e.g. grazing).
- to initially encourage revegetation of the final surfaces with plant species to stabilise the surfaces and prevent erosion;
- to actively encourage natural regeneration of local species.
- to continually monitor and evaluate the effectiveness of rehabilitation and revegetation and modify as necessary to continue to achieve the stated objectives;
- to monitor the waterbody health.

Refer to the attached Rehabilitation Plan and Figure 4, Rehabilitation Landform, for detail.

**ADVERTISED
PLAN**

ADVERTISED PLAN

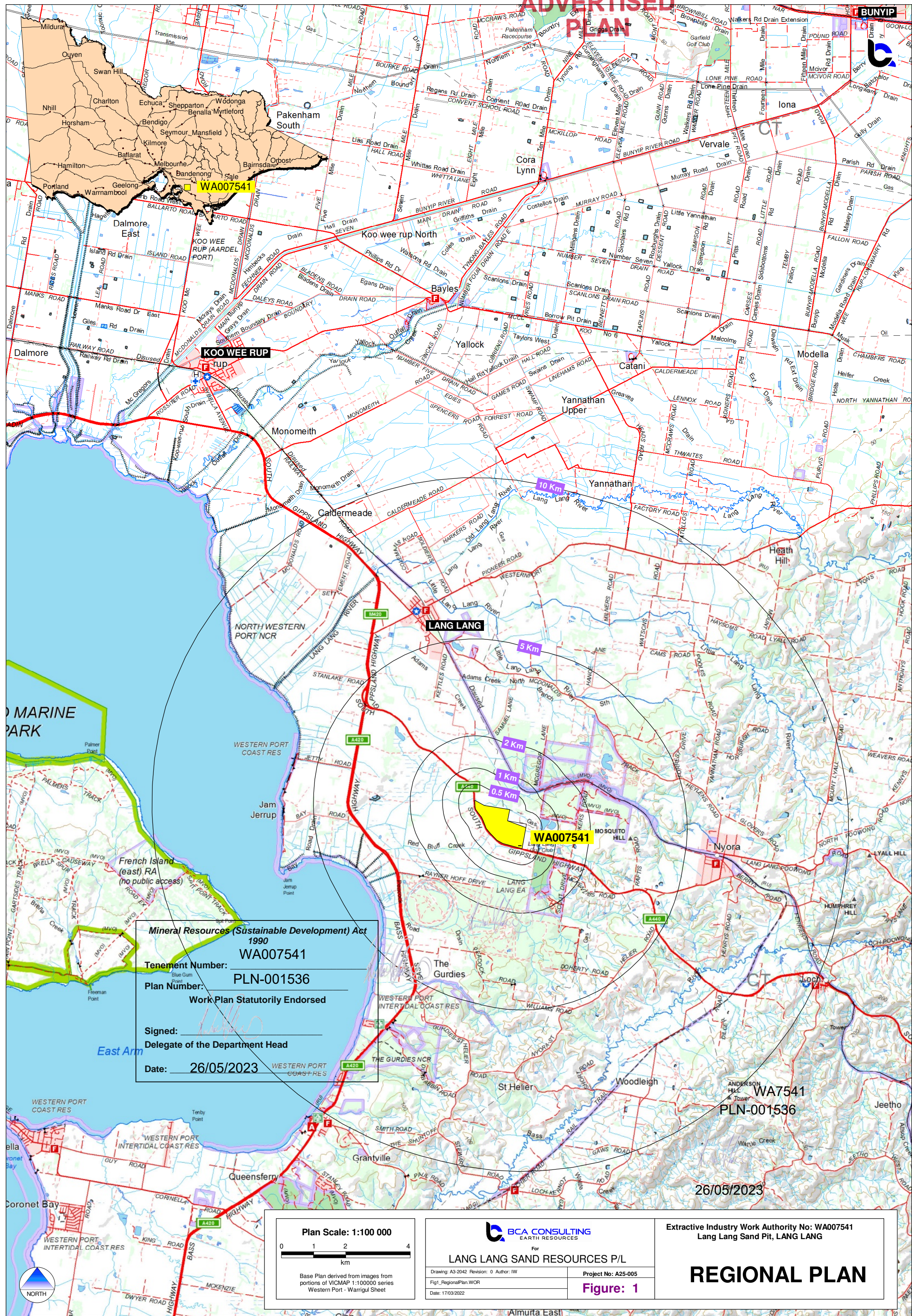
6. ATTACHMENTS

Work Plan Attachments

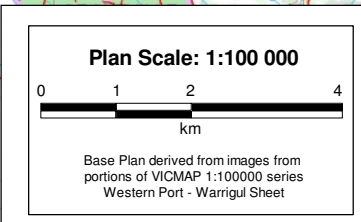
Work Plan Components	
Work Plan Description	WA007541_WP_Description_Feb2023.pdf (<i>this document</i>)
Figure 1, Regional Plan	WA7541 Fig1_Regional Plan_0322.pdf
Figure 2, Location Plan	WA007541_Fig2_Locality Plan_0822.pdf
Figure 2A, Crown Land Status	WA007541_Fig2A_Crown Land.pdf
Figure 3, Site Layout Plan	WA007541_Fig3_SiteLayoutPlan_0223.pdf
Risk Management Plan: Risk Treatment Plans	WA007541_RMP_v06_Feb2023.pdf
Risk Management Plan: Risk Register	WA007541_Risk_Register_v4_Feb2023.pdf
Community Engagement Plan	WA007541 Community Engagement Plan v2 Sep 2022.pdf
Rehabilitation Plan: Text	WA007541_RehabPlan_v5_Feb2023.pdf
Rehabilitation Plan: Figure 4, Rehabilitation Landform	WA007541_Fig4_RehabLandform_0223.pdf

Supporting Documents

Property Documents	
Certificate of Title	5575 Sth Gippsland Hwy consolidated titles.pdf
Planning Property Report	5575-South-Gippsland-Highway-Lang-Lang-Vicplan-Planning-Property-Report.pdf
Other Documents	
Surface Water Management Plan incl TARP	WA007541_SurfaceWaterManPlan_Feb2023.pdf
Flood Assessment and Waterway Diversion Design	308642-REP-SW-03 WA7541 Stormwater Management Plan w Appendices.pdf
Hydrogeological Assessment, incl initial Groundwater Management Plan	LLSR report 2023_02_28.pdf
Groundwater Use Licences – Southern Rural Water	WA007541 GW Works and Take&Use Licences.pdf
Groundwater Monitoring Licences – Southern Rural Water	WA007541 GW Monitoring Works Licence.pdf
Geotechnical Assessment	12527040-RPT-1_5575 South Gippsland Hwy Geotechnical Assessment.pdf
Ground Control Management Plan	12527040-RPT-2_5575 South Gippsland Hwy GCMP.pdf
Ecological Assessment	ACM_NVR_Ecology_Report_2022_08_29_final.pdf
DELWP Mapped Wetland Advice, dated 21 Apr 2021	RemoveWetlandLangLangSandQuarry_WrittenAgreement_Signed.pdf
Air Quality Impact Assessment	Air Quality Impact Assessment PS121740-AQ-REP-000 RevE.pdf
Noise Impact Assessment	V299-01-P Acoustic Report (r3).pdf
Beach Energy Advice, dated 4 Aug 2022	Beach Energy Letter to ACM - 04082022.pdf
AusNet Services Advice, July 2022	AusNet Services Advice - July 2022.pdf
Imported Materials Management Plan	WA007541_IMMP_Dec2022.pdf
CHMP Requirement Declaration and Self-assessment	WA7541 CHMP Dec & AV process list signed.pdf

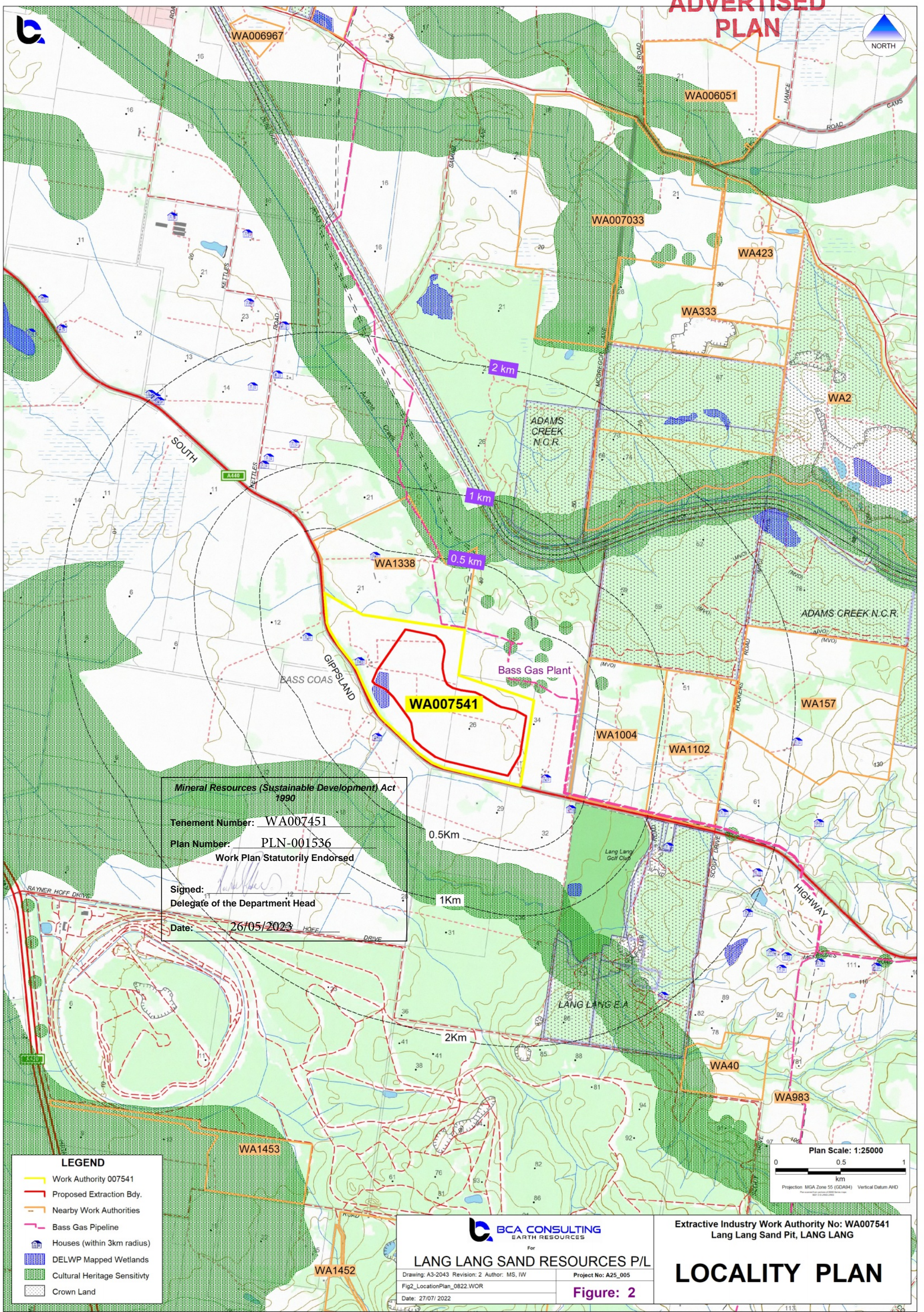


Mineral Resources (Sustainable Development) Act 1990
WA007541
Tenement Number: WA007541
Plan Number: PLN-001536
Work Plan Statutorily Endorsed
Signed: _____
Delegate of the Department Head
Date: 26/05/2023



BCA CONSULTING
 EARTH RESOURCES
 For
LANG LANG SAND RESOURCES P/L
 Drawing: A3-2042 Revision: 0 Author: IW
 Fig1_RegionalPlan.WOR
 Date: 17/03/2022
 Project No: A25-005
Figure: 1

Extractive Industry Work Authority No: WA007541
 Lang Lang Sand Pit, LANG LANG
REGIONAL PLAN
 26/05/2023

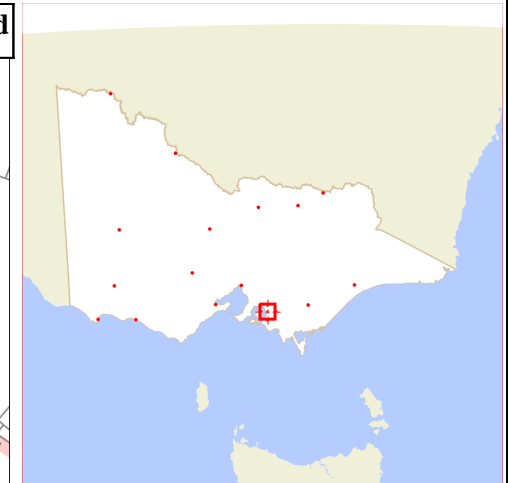
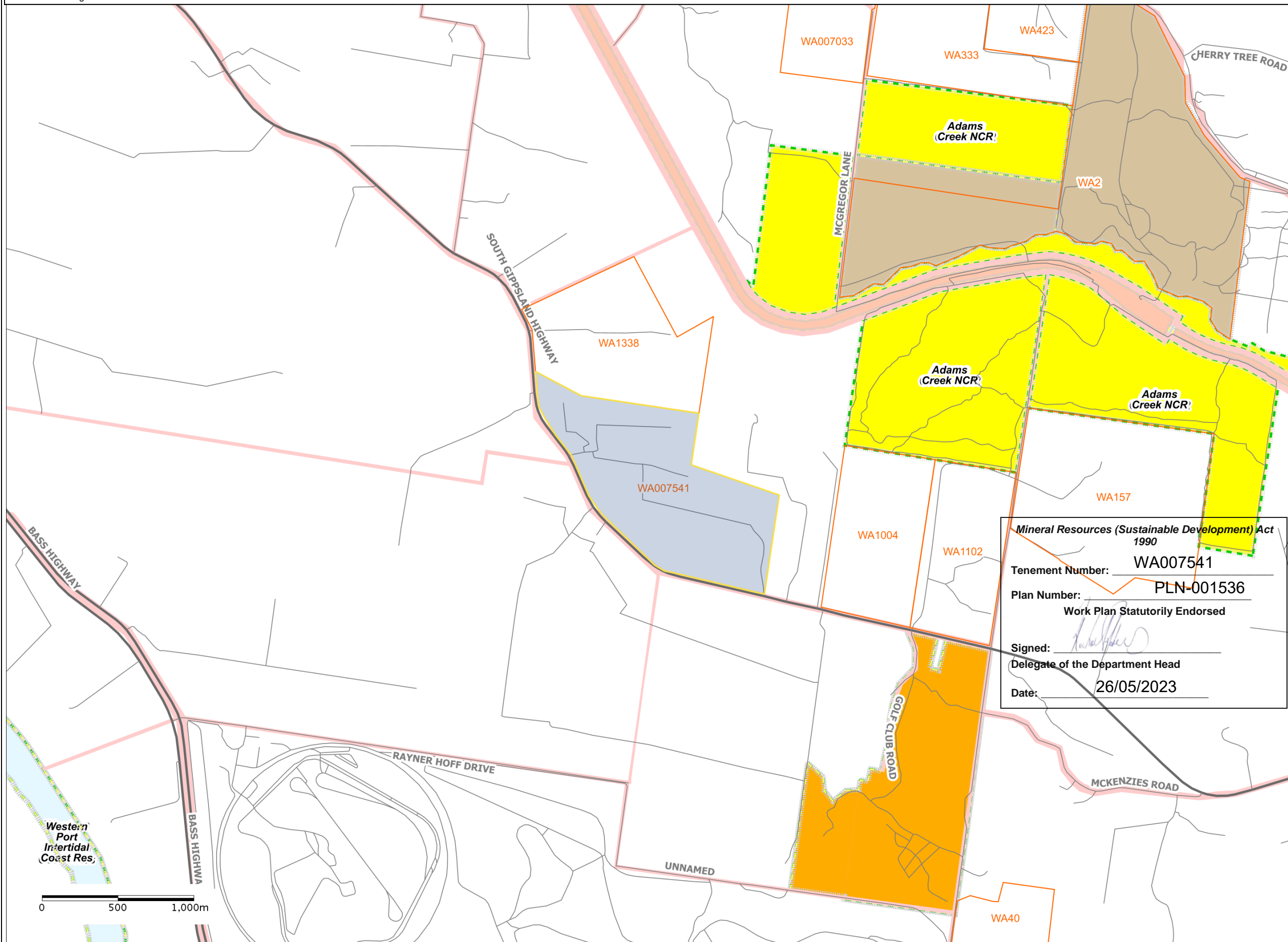


Mineral Resources (Sustainable Development) Act 1990
 Tenement Number: WA007451
 Plan Number: PLN-001536
 Work Plan Statutorily Endorsed
 Signed: *[Signature]*
 Delegate of the Department Head
 Date: 26/05/2023

- LEGEND**
- Work Authority 007541
 - Proposed Extraction Bdy.
 - Nearby Work Authorities
 - Bass Gas Pipeline
 - Houses (within 3km radius)
 - DELWP Mapped Wetlands
 - Cultural Heritage Sensitivity
 - Crown Land

Plan Scale: 1:25000
 0 0.5 1
 km
 Projection: MGA Zone 55 (GDA94) Vertical Datum: AHD

		Extractive Industry Work Authority No: WA007541 Lang Lang Sand Pit, LANG LANG	
LANG LANG SAND RESOURCES P/L		LOCALITY PLAN	
Drawing: A3-2043 Revision: 2 Author: MS, IW Fig2_LocationPlan_0822.WOR Date: 27/07/2022	Project No: A25_005	Figure: 2	



- Legend
- Current Extractive Industry Work Aut
 - Roads (vrntrans)
 - Freeway
 - Highway
 - Main Road
 - Medium Road
 - Other Roads
 - Government Roads
 - Dual Status Government Road
 - Government Road
 - Unavailable Crown Land (MRSDA)
 - Other Public Land Boundary (500K)
 - Public Land Management - Non Park

Mineral Resources (Sustainable Development) Act 1990
 Tenement Number: **WA007541**
 Plan Number: **PLN-001536**
 Work Plan Statutorily Endorsed
 Signed: *[Signature]*
 Delegate of the Department Head
 Date: **26/05/2023**

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

Map Scale: 1:25,000
 Projection: MGA94 55

Generated from GeoVic 3

Map Created Wed Sep 14 2022 17:04:12 GMT+1000 (AEST)



ADVERTISED PLAN

Legend

Other Public Land Boundary (500K)



Public Land Management - Non Park or Reserve

-  Alpine Resort
-  Commonwealth Land
-  Community Use Area
-  Earth Resources
-  Plantation
-  Port and Coastal Facility
-  Services and Utilities
-  State Forest
-  Stream Frontage
-  Uncatergorised Public Land
-  Waterbody
-  Water Production

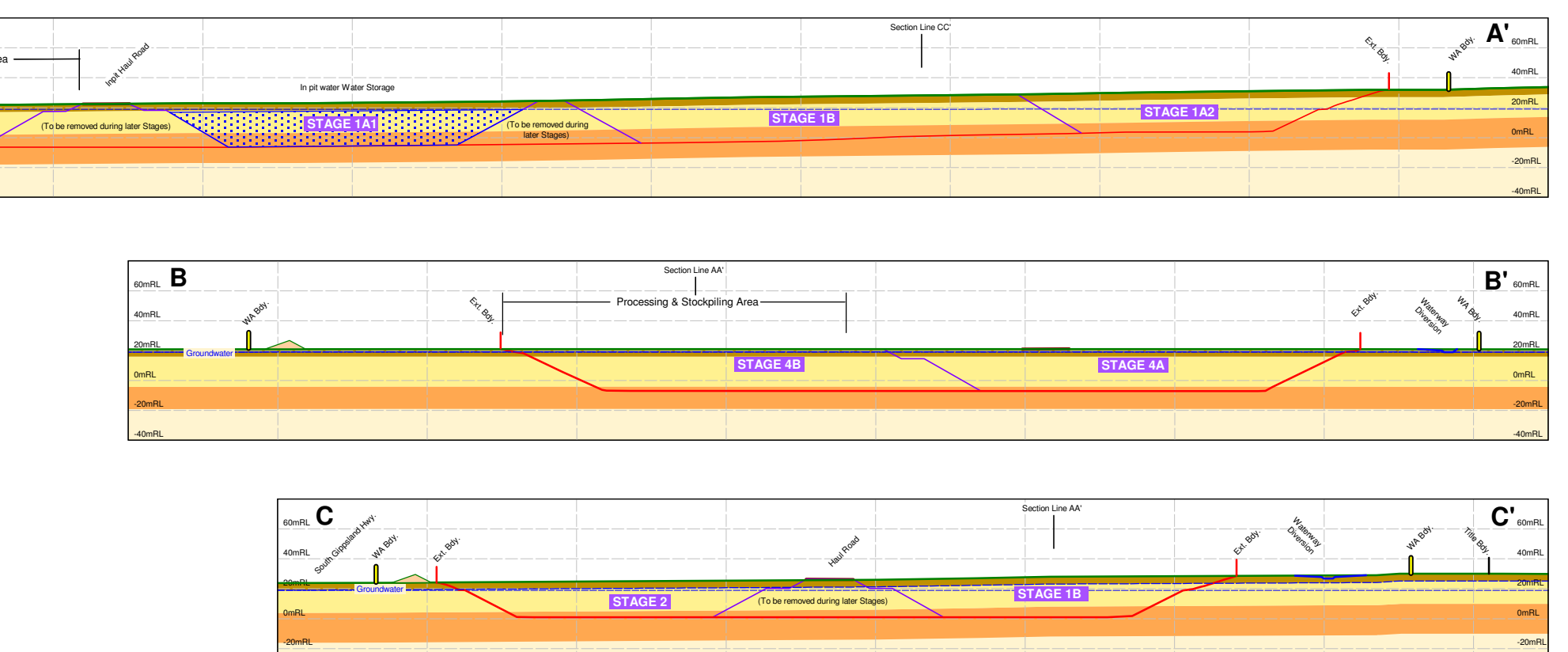
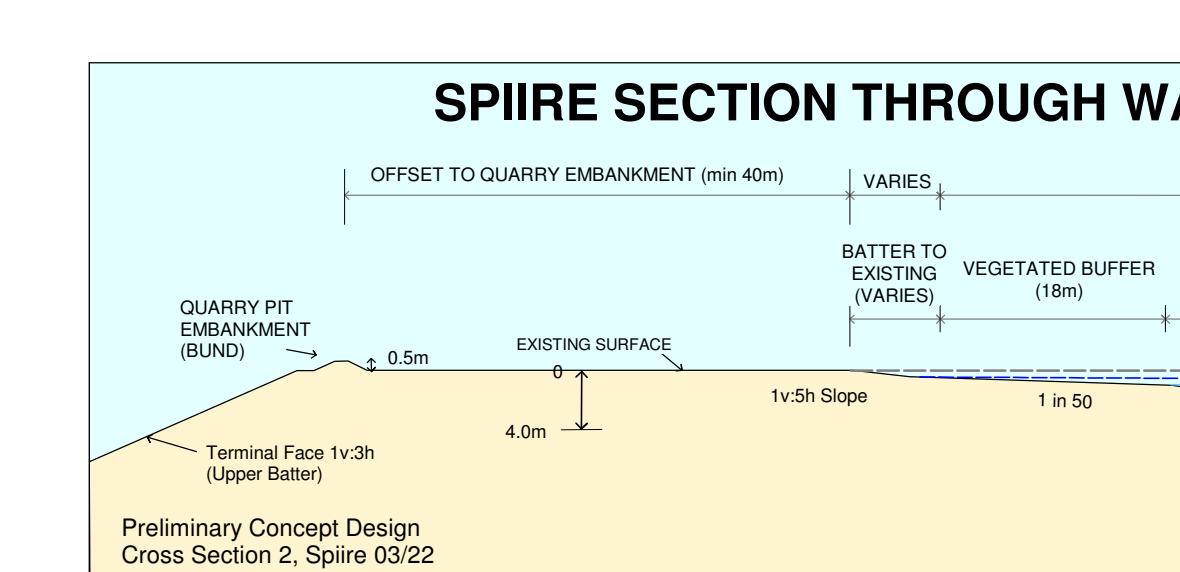
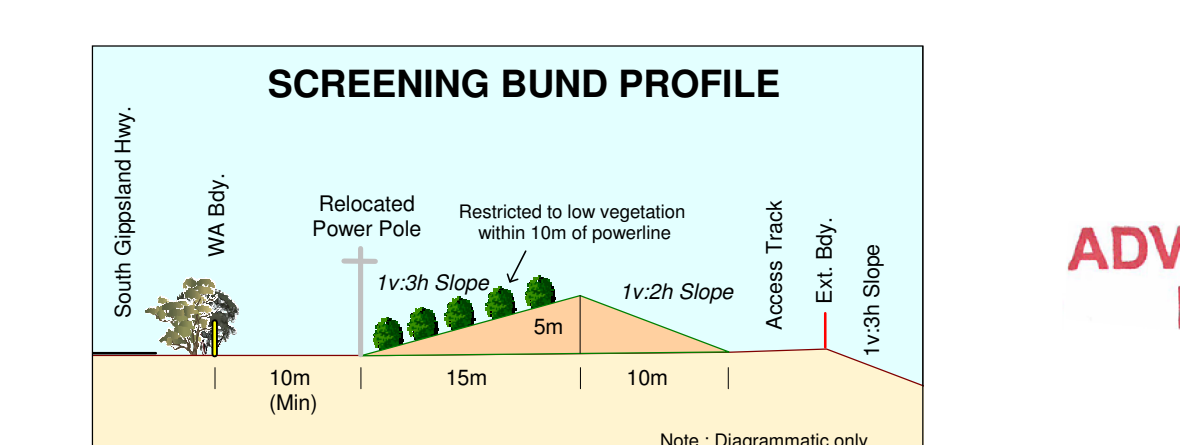
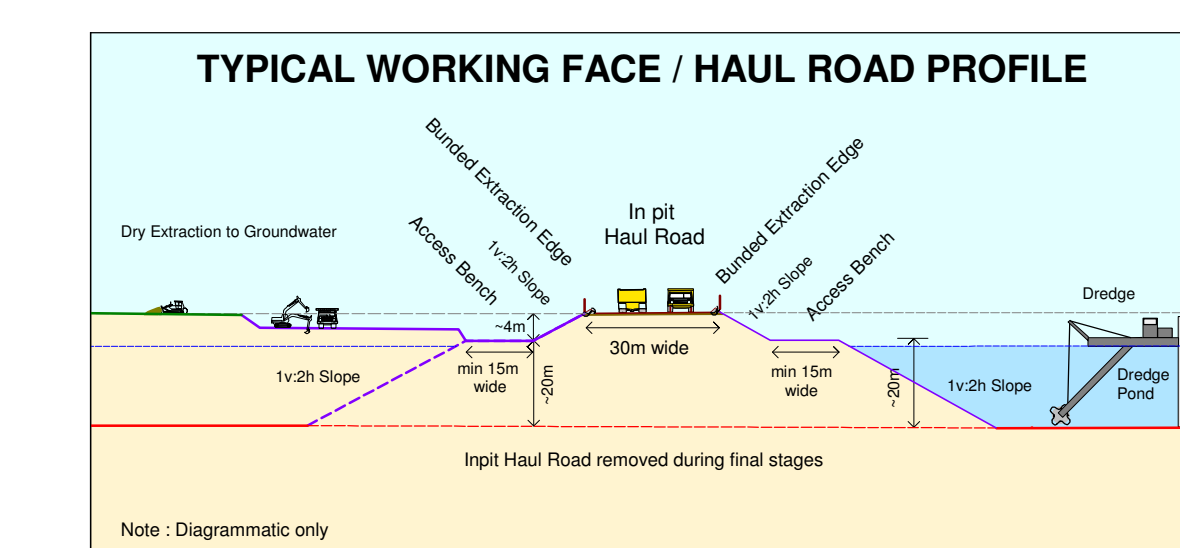
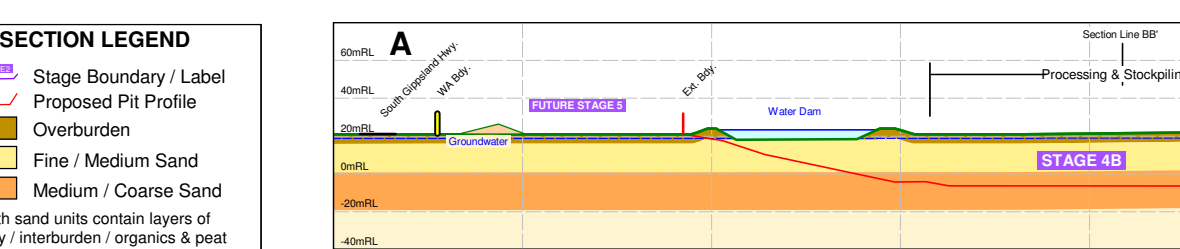
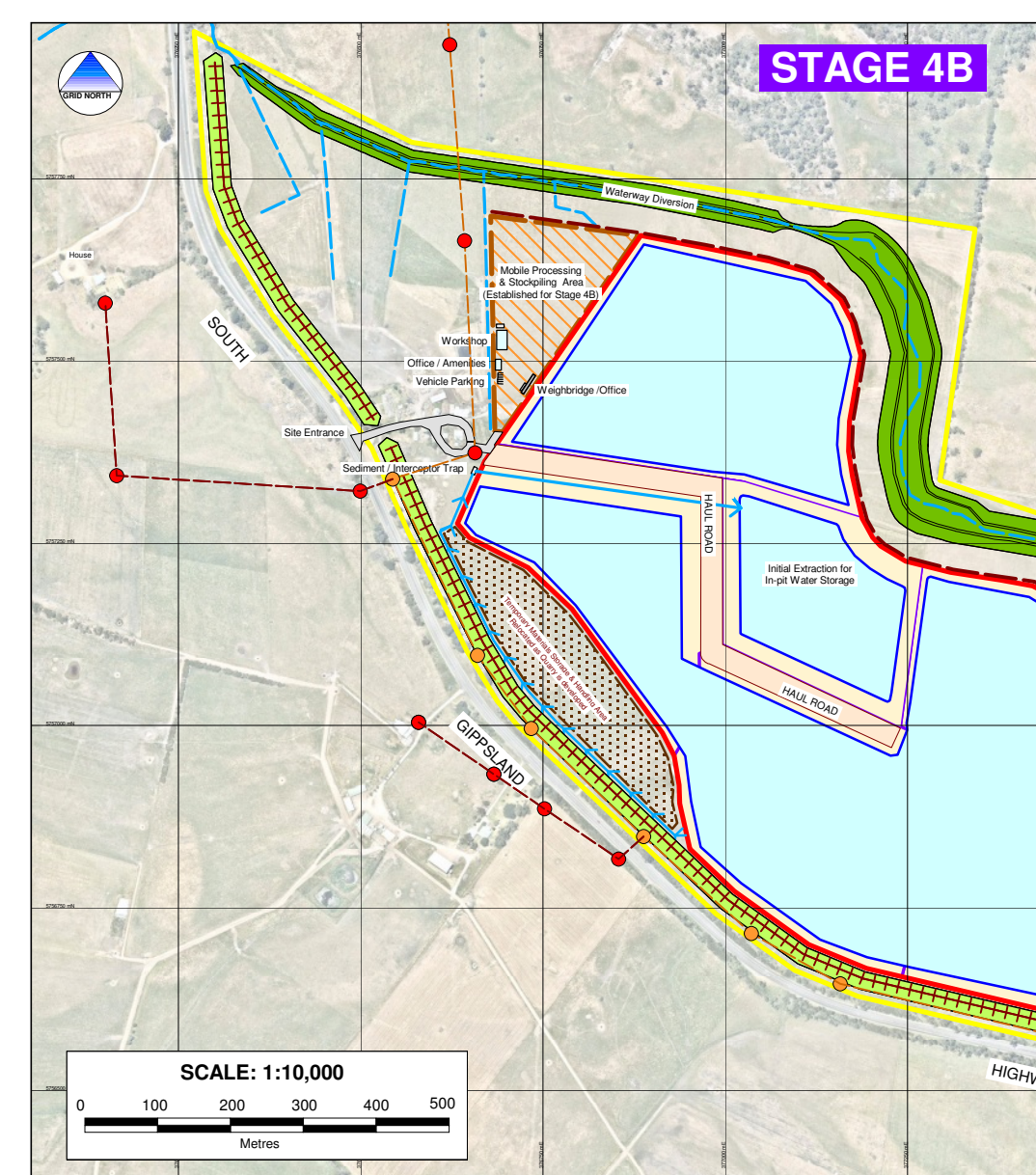
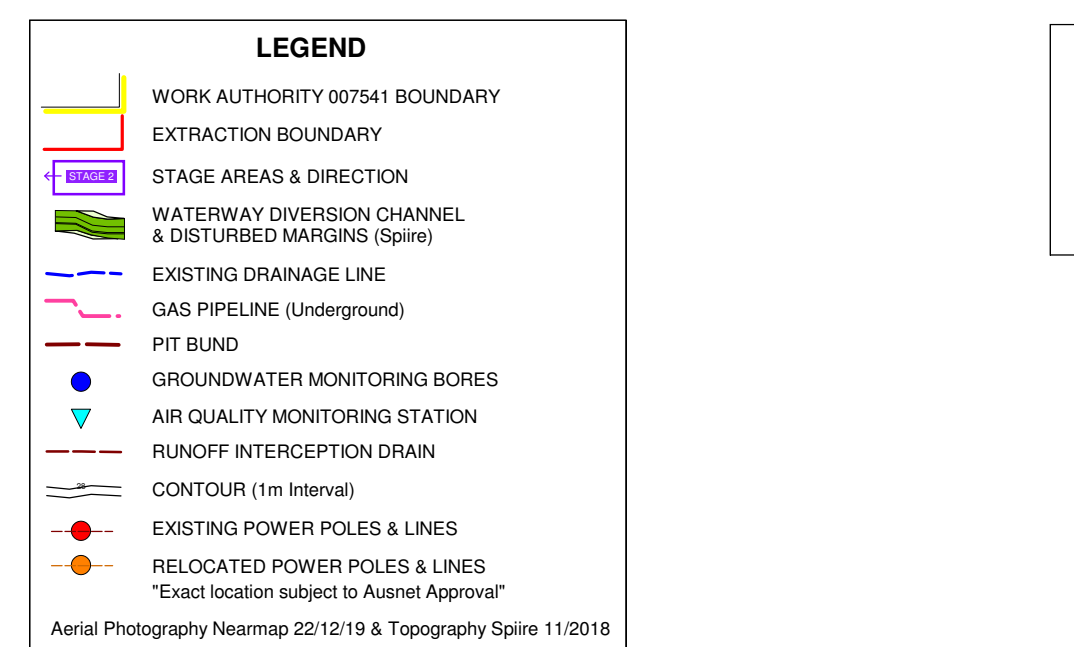
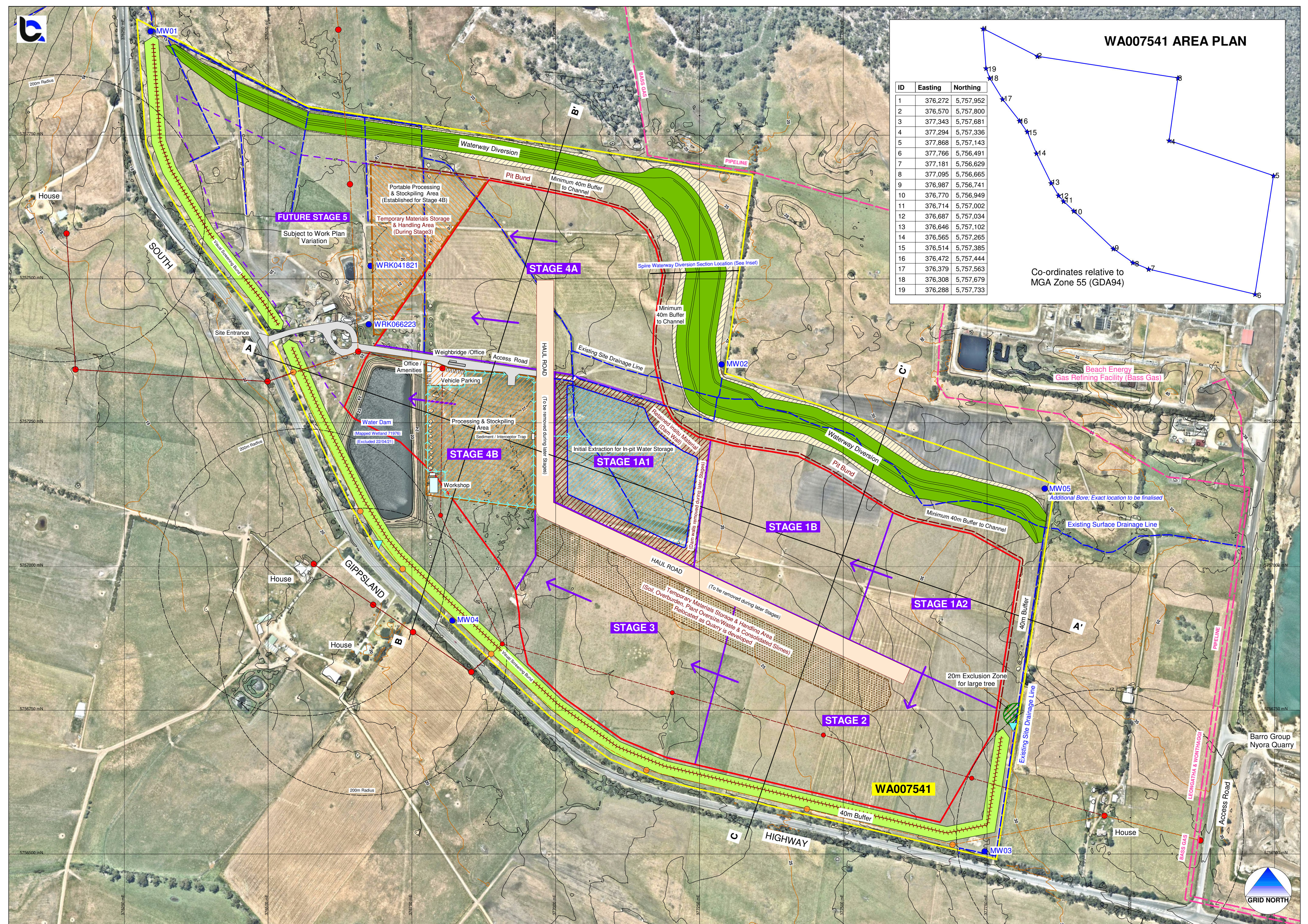
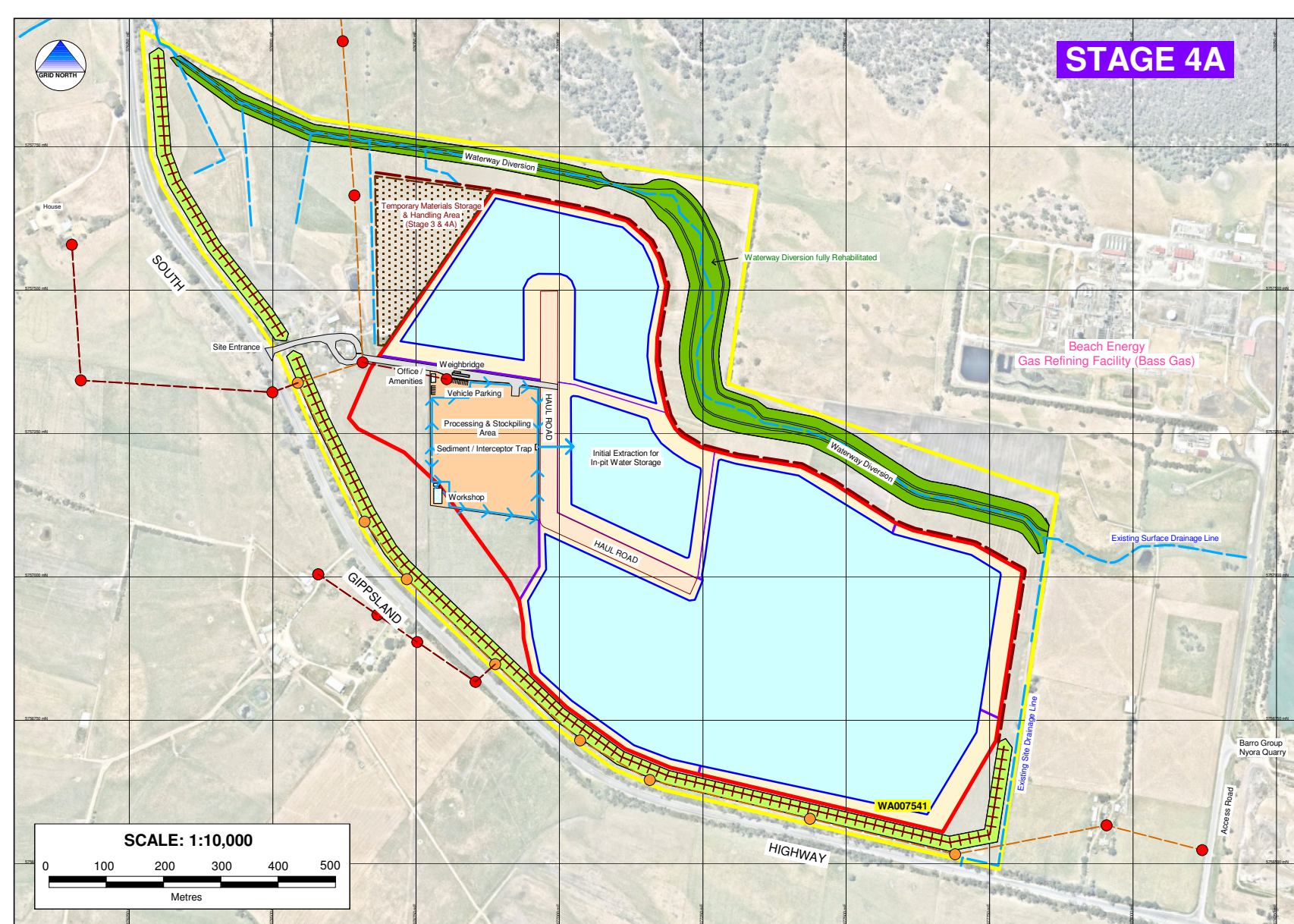
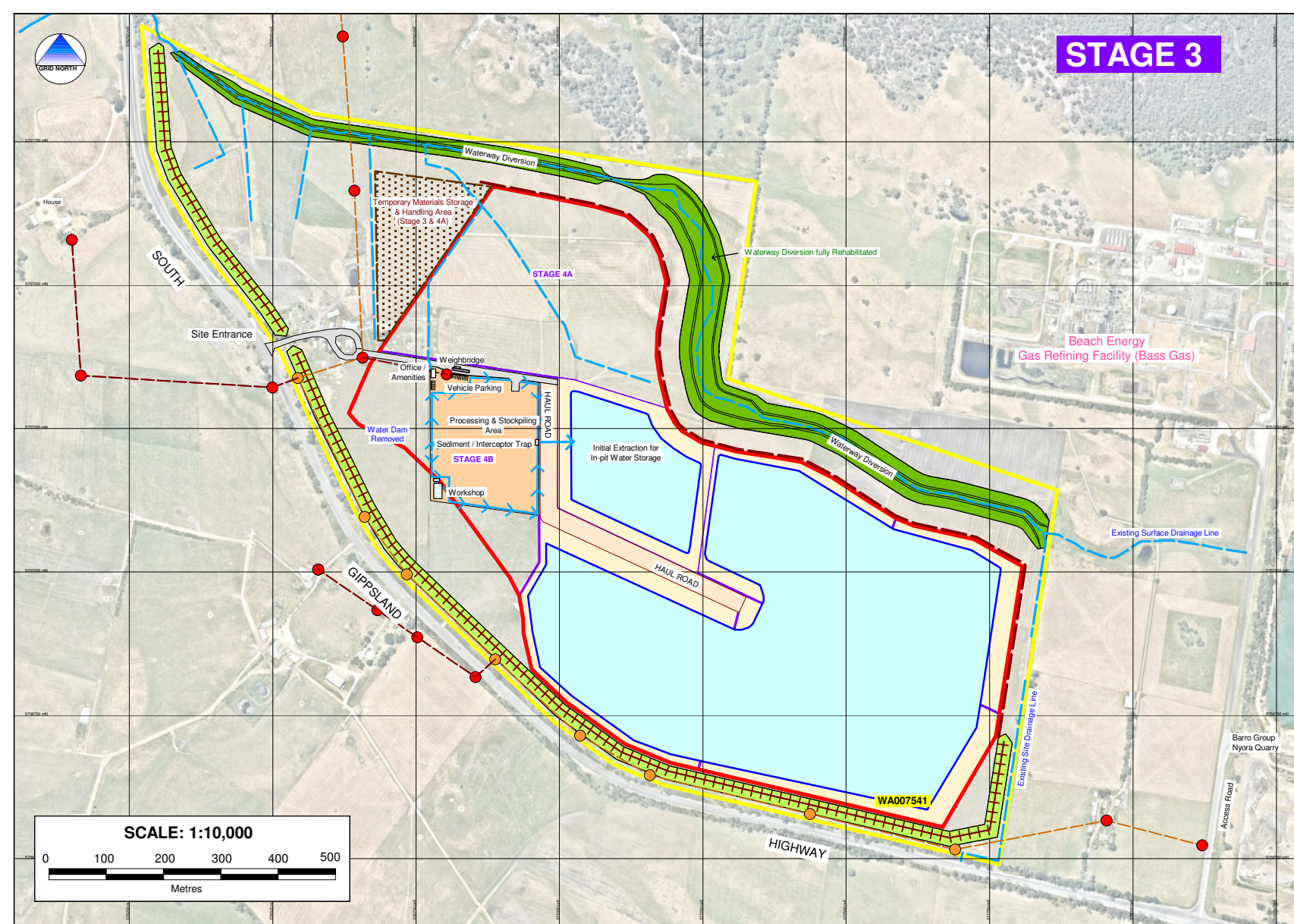
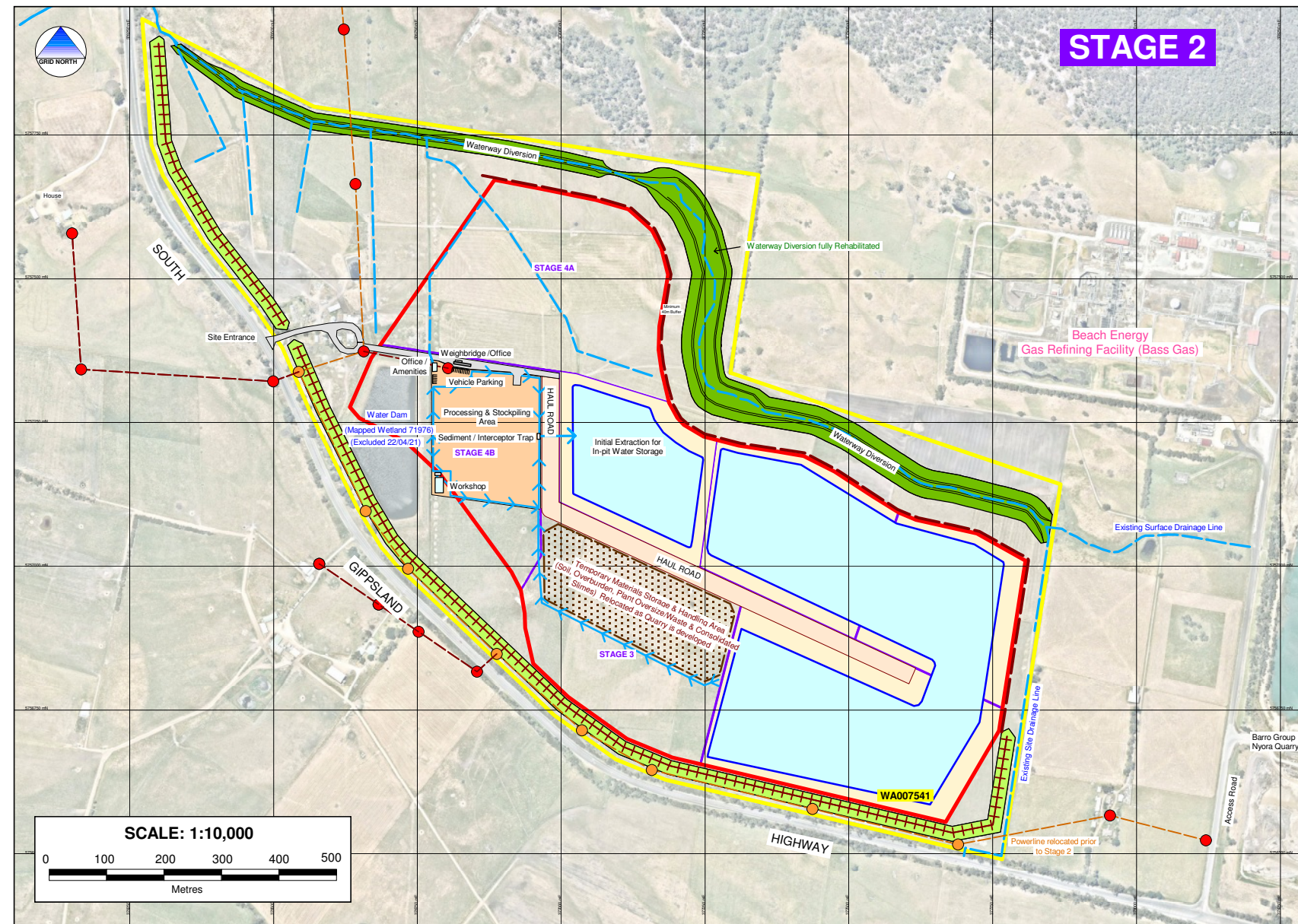
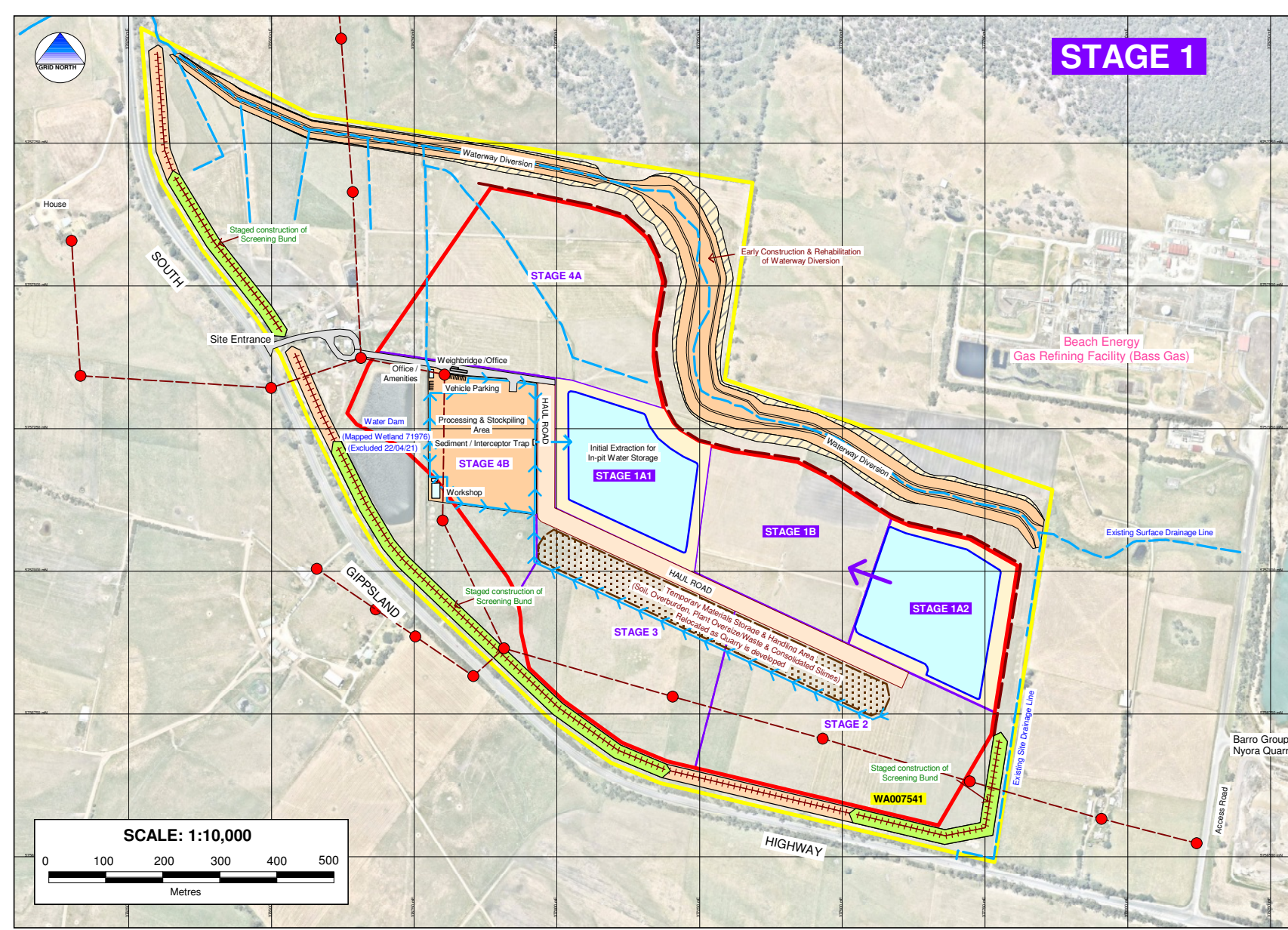
Park or Reserve Boundary (500K)



Public Land - Parks or Reserve (25K)

-  National/State Park
-  Proposed Park (NP Act)
-  Wilderness Park
-  Other Park (NP Act)
-  Marine National Park/Sanctuary
-  Nature Conservation Reserve
-  Natural Features Reserve
-  Regional Park
-  Forest Park
-  Coastal Reserve
-  Education Area
-  Historic Reserve
-  Metro Park
-  Other Reserves

**ADVERTISED
PLAN**



ADVERTISED PLAN

Mineral Resources (Sustainable Development) Act 1990

Tenement Number: **WA007541**

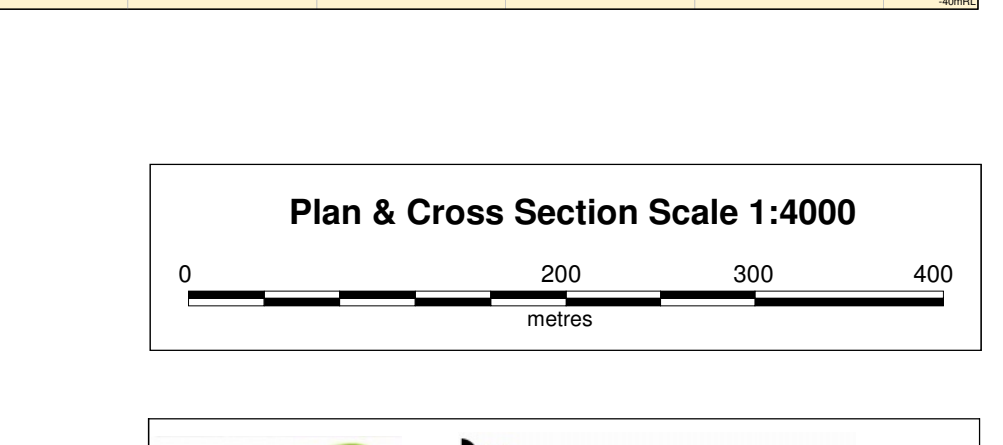
Plan Number: **PLN-001536**

Work Plan Statutorily Endorsed

Signed: [Signature]

Delegate of the Department Head

Date: **26/05/2023**



ACM CONSULTING

BCA CONSULTING EARTH RESOURCES

For **LANG LANG SAND RESOURCES P/L**

Extractive Industry Work Authority No: WA007541
Lang Lang Sand Pit, LANG LANG

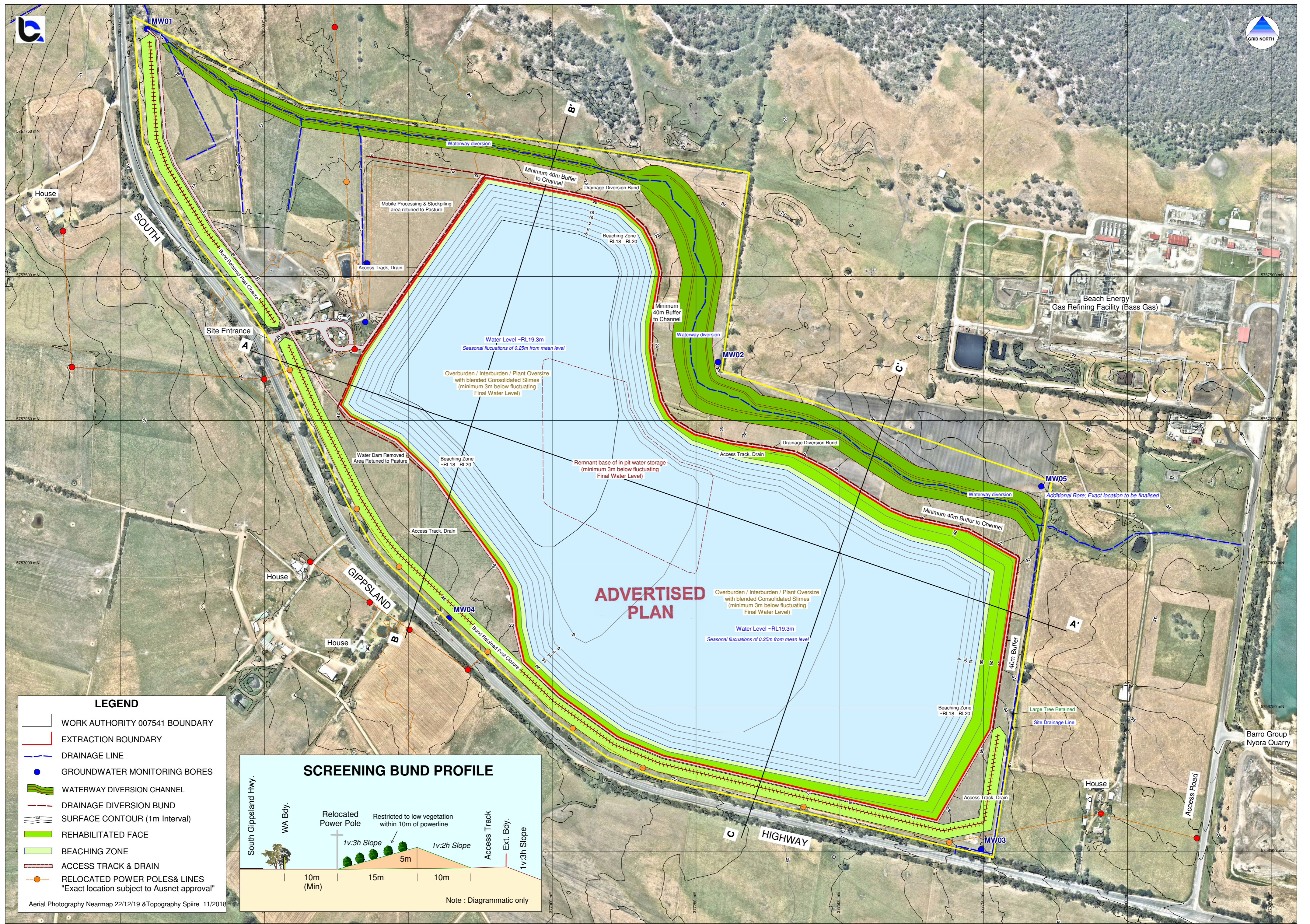
SITE LAYOUT PLAN

Author: CLB, IGW, MS Date: 1/03/2023 Drawing: NS-2143 Revision: 2

Survey Source: Spire Contours: 1metre Vertical Datum: AHD

Orthophoto Date: Nearmap 22/12/2019 Project No: A25_005

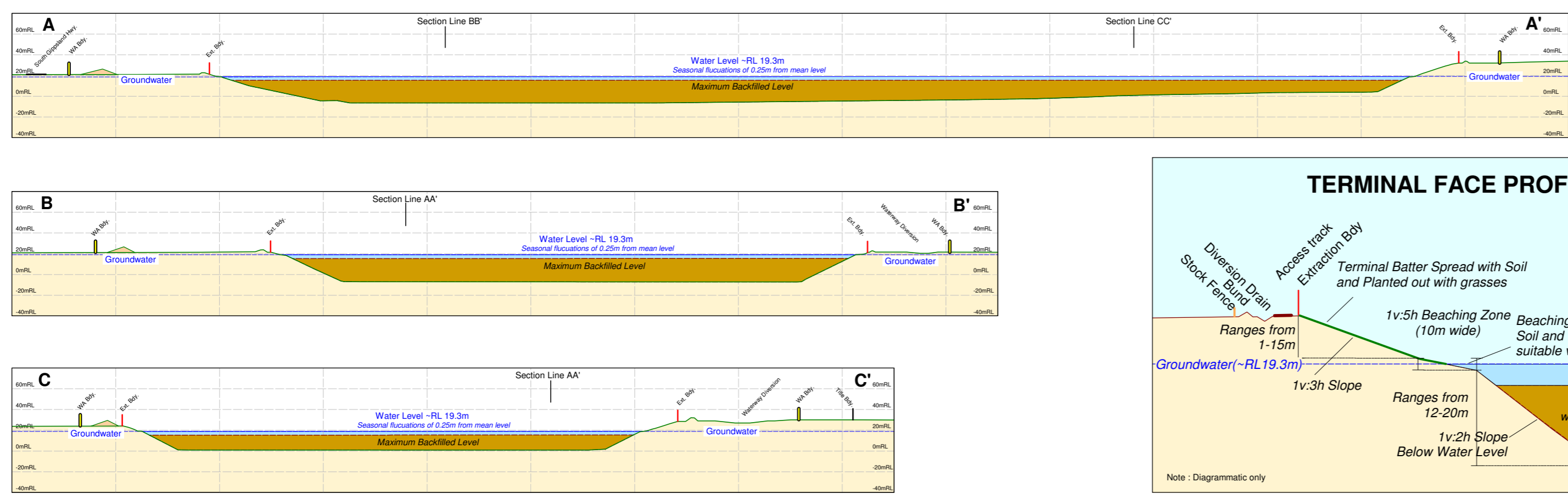
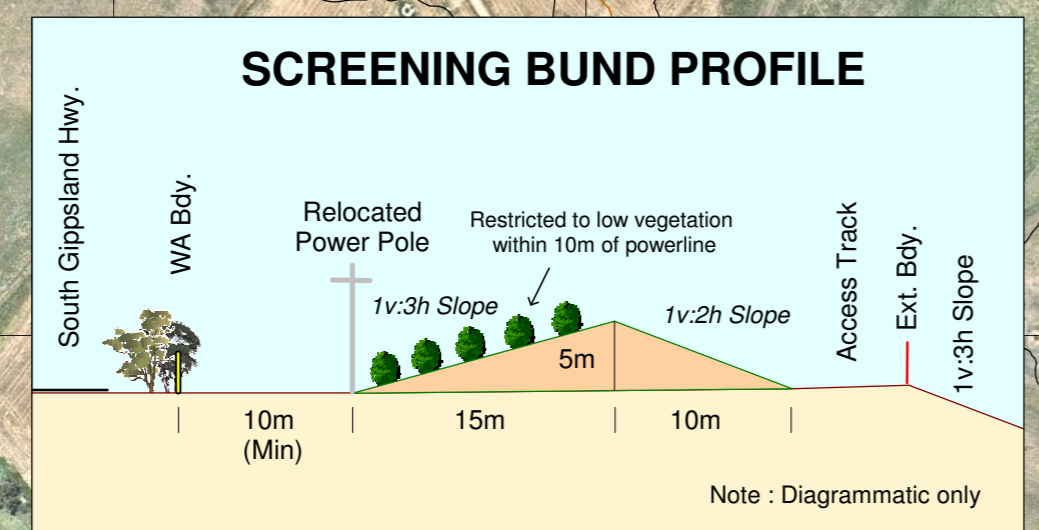
Projection: MGA Zone 55 (GDA94) Fig3_SiteLayoutPlan_4000_0323 WOR **Figure: 3**



LEGEND

- WORK AUTHORITY 007541 BOUNDARY
- EXTRACTION BOUNDARY
- DRAINAGE LINE
- GROUNDWATER MONITORING BORES
- WATERWAY DIVERSION CHANNEL
- DRAINAGE DIVERSION BUND
- SURFACE CONTOUR (1m Interval)
- REHABILITATED FACE
- BEACHING ZONE
- ACCESS TRACK & DRAIN
- RELOCATED POWER POLES & LINES
"Exact location subject to Ausnet approval"

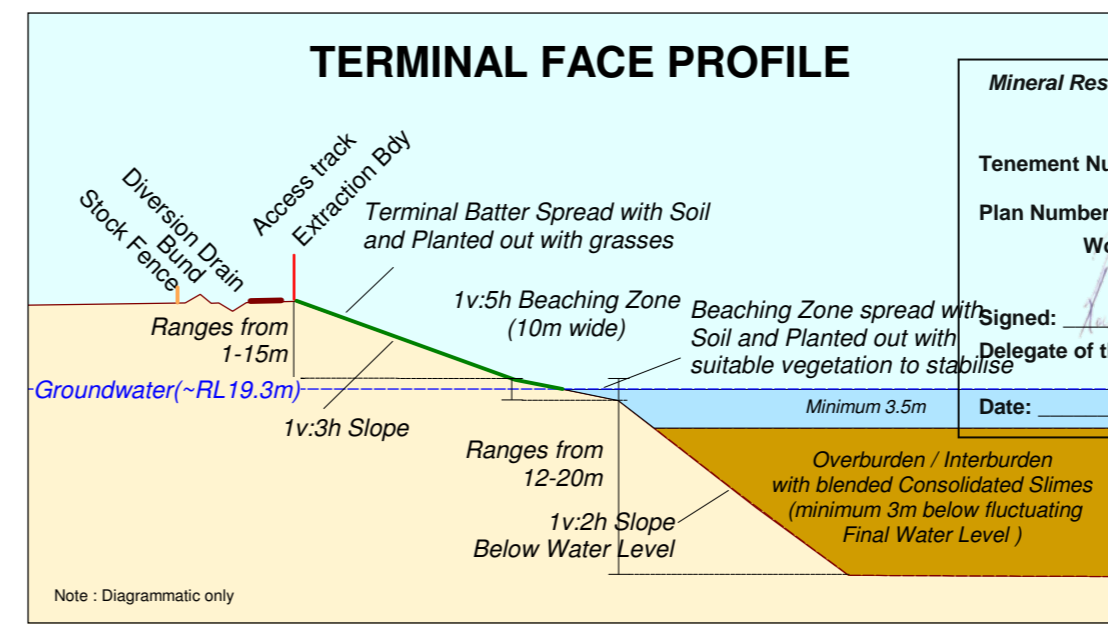
Aerial Photography Nearmap 22/12/19 & Topography Spiire 11/2018



SECTION LEGEND

- Water Filled Excavation
- Rehabilitated Pit Profile
- Placed Overburden / Interburden

Plan & Cross Section Scale 1:4000



Mineral Resources (Sustainable Development) Act 1990

Tenement Number: **WA007451**

Plan Number: **PLN-001536**
Work Plan Statutorily Endorsed

Signed:
Delegate of the Department Head

Date: **26/05/2023**

ACM **BCA CONSULTING**
EARTH RESOURCES

For **LANG LANG SAND RESOURCES P/L**

Extractive Industry Work Authority No: WA007541
Lang Lang Sand Pit, LANG LANG

REHABILITATION LANDFORM

Author: CLB, IGW, MS Date: 1/03/2023 Drawing: NS-2144 Revision: 2

Survey Source: Spiire Contours: 1metre Vertical Datum: AHD

Orthophoto Date : Nearmap 22/12/2019 Project No: A25_005

Projection: MGA Zone 55 (GDA94)

Fig4_RehabilitationPlan_4000_0323.WOR **Figure: 4**

Quarrying or Rehabilitation Hazard	Risk No.	Risk Event	Phase			Sensitive Receptors			Inherent Risk Assessment			Control Measures	Performance Standards	Residual Risk Assessment			Monitoring and Ongoing Management		Detailed Risk Treatment Plan attached?	
			Cons ^{10m}	Open ^{10m}	Rehab ^{10m}	Details of sensitive receptor	Location and proximity to site	How hazard may harm receptor	Evidence to support assessment	Likelihood	Consequence			Risk Rating	Likelihood	Consequence	Risk Rating	Aspect to be monitored		Details of monitoring and ongoing managmnt
Mineral Resources (Sustainable Development) Act 1990 Tenement Number: WA007541 Plan Number: PLN-001536 Work Plan Statutorily Endorsed Signed: [Signature] Delegate of the Department Head Date: 26/05/2023																				
Altered Visual Amenity	2	Plant and operations visible from roads	Yes	Yes	Yes	Residences	5 residences located within 1km of the Work Authority boundary, including 4 within 250m of the WA boundary.	Potential to see infrastructure and site operations	Proximity to site	Likely	Minor	Medium	Screening bund constructed as soon as practicable and landscaping maintained in neat & orderly condition Screening vegetation established and healthy Processing Plant & Stockpiling Area and Temporary Materials Storage and Handling Area located in accordance with Site Layout Plan, and not visible from outside roads once screening bund is constructed Maximum open area criteria maintained Site Layout Plan	Unlikely	Minor	Low	Vegetation and landscape maintenance Screening bund and vegetation effectiveness Amenity impact	The maintenance of buffer plantings and vegetation on screening bund will be monitored by regular inspections. Additional and/or replanting will be done to remediate slow or failed vegetation growth. Routine inspections from outside the quarry boundary will be used to check buffer effectiveness. Complaints and comments raised through community engagement will be handled through the normal engagement process.	YES	
Noise	3	Excessive noise at any sensitive receptors from vehicle movements (Road trucks, loaders, haul truck)	Yes	Yes	Yes	Surrounding Residences Public Roads	5 residences located within 1km of the Work Authority boundary, the closest to the extraction boundary being one at 250m, two at 270m and one at 580m (410m from site entrance). Site abuts South Gippsland Highway.	Potential to impact amenity through excessive or elevated noise levels	Proximity to site	Likely	Moderate	High	Compliance to approved operating hours No noisy activities permitted onsite within 250m of residences from 6am to 7am Establishment of screening bund, with initial segments constructed opposite the nearest residences Mobile plant fitted with effective mufflers and other appropriate noise abatement devices Extraction equipment orientation and position to take advantage of bunding, vegetation shielding and topography Equipment maintenance regime in accordance with manufacturer specifications. Maintain access roads and site tracks in good condition Traffic management around product stockpiles and travel routes designed to minimise reversing Engineered noise abatement of grizzlies, conveyors, vibrating screens, stacking conveyors, pumps Turning off plant and equipment when not in use for extended periods Broadband reversing alarms (squawkers) fitted to appropriate mobile plant	Possible	Moderate	Medium	Noise at sensitive receptors	No formal noise monitoring is proposed, with observations made during inspections and engagement activities. Noise monitoring may take place in direct response to a noise complaint. Complaints, as well as other community engagement activities, and any resulting actions will be documented. Where formal monitoring is directed by EPA or ERR, monitoring locations, methods and frequencies will be in accordance with the regulatory agencies' requirements. The adequacy of control measures against the GED will be assessed through general observation as part of routine site inspections and feedback through community engagement	YES	
Noise	4	Excessive noise at any sensitive receptors from Excavating Equipment (Dozer, loader, excavator)	Yes	Yes	Yes	Surrounding Residences Public Roads	5 residences located within 1km of the Work Authority boundary, the closest to the extraction boundary being one at 250m, two at 270m and one at 580m (410m from site entrance). Site abuts South Gippsland Highway.	Potential to impact amenity through excessive or elevated noise levels	Proximity to site	Likely	Moderate	High	Mobile plant fitted with effective mufflers and other appropriate noise abatement devices Extraction equipment orientation and position to take advantage of bunding, vegetation shielding and topography Equipment maintenance regime in accordance with manufacturer specifications. Maintain access roads and site tracks in good condition Traffic management around product stockpiles and travel routes designed to minimise reversing Engineered noise abatement of grizzlies, conveyors, vibrating screens, stacking conveyors, pumps Turning off plant and equipment when not in use for extended periods Broadband reversing alarms (squawkers) fitted to appropriate mobile plant	Possible	Moderate	Medium	Noise at sensitive receptors	No formal noise monitoring is proposed, with observations made during inspections and engagement activities. Noise monitoring may take place in direct response to a noise complaint. Complaints, as well as other community engagement activities, and any resulting actions will be documented. Where formal monitoring is directed by EPA or ERR, monitoring locations, methods and frequencies will be in accordance with the regulatory agencies' requirements. The adequacy of control measures against the GED will be assessed through general observation as part of routine site inspections and feedback through community engagement	YES	
Noise	5	Excessive noise at any sensitive receptors from processing plant (inc fix and mobile plant, screens, stackers)	Yes	Yes	Yes	Surrounding Residences Public Roads	5 residences located within 1km of the Work Authority boundary, the closest to the extraction boundary being one at 250m, two at 270m and one at 580m (410m from site entrance). Site abuts South Gippsland Highway.	Potential to impact amenity through excessive or elevated noise levels	Proximity to site	Likely	Moderate	High	Mobile plant fitted with effective mufflers and other appropriate noise abatement devices Extraction equipment orientation and position to take advantage of bunding, vegetation shielding and topography Equipment maintenance regime in accordance with manufacturer specifications. Maintain access roads and site tracks in good condition Traffic management around product stockpiles and travel routes designed to minimise reversing Engineered noise abatement of grizzlies, conveyors, vibrating screens, stacking conveyors, pumps Turning off plant and equipment when not in use for extended periods Broadband reversing alarms (squawkers) fitted to appropriate mobile plant	Possible	Moderate	Medium	Noise at sensitive receptors	No formal noise monitoring is proposed, with observations made during inspections and engagement activities. Noise monitoring may take place in direct response to a noise complaint. Complaints, as well as other community engagement activities, and any resulting actions will be documented. Where formal monitoring is directed by EPA or ERR, monitoring locations, methods and frequencies will be in accordance with the regulatory agencies' requirements. The adequacy of control measures against the GED will be assessed through general observation as part of routine site inspections and feedback through community engagement	YES	
Dust	6	Excessive dust from vehicle movements on all access roads, site roads & hardstands	Yes	Yes	Yes	Surrounding Residences Public Roads	5 residences located within 1km of the Work Authority boundary, the closest to the extraction boundary being one at 250m, two at 270m and one at 580m. Site abuts South Gippsland Highway.	Potential to impact amenity through excessive or elevated dust levels	Proximity to site	Possible	Minor	Medium	Minimise exposed / disturbed areas Water cart utilised on exposed areas, roads and hardstand areas. Sealing of access road and use of wheel wash for sales traffic. Dry excavated material to be wetted in hot, dry, windy conditions or whenever dust generation requires. Minimise vehicle movements (restrict to designated areas) and limit vehicle speeds	Unlikely	Minor	Low	Ongoing visual inspection of dust generated on site by all staff	Visual inspection for dust leaving the site Hourly assessment of dust on hot, dry, windy days	YES	
Dust	7	Excessive dust from processing plant and equipment within the WA area	Yes	Yes	No	Surrounding Residences Public Roads	5 residences located within 1km of the Work Authority boundary, the closest to the extraction boundary being one at 250m, two at 270m and one at 580m. Site abuts South Gippsland Highway.	Potential to impact amenity through excessive or elevated dust levels	Proximity to site	Possible	Minor	Medium	Compliance to maximum disturbed area. Water cart and ample supply of water available on forecast hot dry or during extended dry periods when inherent moisture content is reduced. Installation and use. Wetting at Quarry Manager's discretion based on visual observation or stakeholder engagement. Speed / Traffic management signs maintained at critical locations and on the main quarry access track	Unlikely	Minor	Low	Ongoing visual inspection of dust generated on site by all staff	Visual inspection for dust leaving the site Hourly assessment of dust on hot, dry, windy days	YES	
Dust	8	Excessive dust from extraction activities	Yes	Yes	No	Surrounding Residences Public Roads	5 residences located within 1km of the Work Authority boundary, the closest to the extraction boundary being one at 250m, two at 270m and one at 580m. Site abuts South Gippsland Highway.	Potential to impact amenity through excessive or elevated dust levels	Proximity to site	Possible	Minor	Medium	Minimise exposed / disturbed areas Water cart utilised on exposed areas, roads and hardstand areas. Sealing of access road and use of wheel wash for sales traffic. Dry excavated material to be wetted in hot, dry, windy conditions or whenever dust generation requires. Minimise vehicle movements (restrict to designated areas) and limit vehicle speeds	Unlikely	Minor	Low	Ongoing visual inspection of dust generated on site by all staff	Visual inspection for dust leaving the site Hourly assessment of dust on hot, dry, windy days	YES	
Dust	9	Excessive dust from soil and overburden dumps (construction and maintenance)	Yes	Yes	Yes	Surrounding Residences Public Roads	5 residences located within 1km of the Work Authority boundary, the closest to the extraction boundary being one at 250m, two at 270m and one at 580m. Site abuts South Gippsland Highway.	Potential to impact amenity through excessive or elevated dust levels	Proximity to site	Possible	Moderate	Medium	Establishment of screening bund, with initial segments constructed opposite the nearest residences. Vegetate and stabilise screening bunds, as soon as practicable, as well as topsoil / overburden stockpiles to be retained more than 6 months. Establish initial pasture on upper terminal batters, as soon as practicable, and also interim batters left for more than 12 months between stages. Cessation of works during hot, dry or high wind conditions. Equipment maintenance regime in accordance with manufacturer specifications. Vegetation maintained.	Unlikely	Moderate	Medium	Air quality monitoring program: - dust deposition for nuisance dust (all stations) - continuous PM10 & PM2.5, plus wind speed & direction Complaints and observations/comments from sensitive receptors	Monitoring Locations (two sites): - Initial locations shown on Figure 3, Site Layout Plan, with continuous monitoring station on eastern boundary - locations to be reviewed as quarry stages develop, but always adjacent to WA boundary toward potentially affected residences Monitoring Frequency: - monthly dust deposition samples - real-time data for PM10, PM2.5, wind speed & direction - frequency and need for continuous monitoring (to demonstrate GED is met) reviewed as quarry stages develop	YES	
Dust	10	Excessive dust from stockpiles leaving the WA boundary	No	Yes	No	Surrounding Residences Public Roads	5 residences located within 1km of the Work Authority boundary, the closest to the extraction boundary being one at 250m, two at 270m and one at 580m. Site abuts South Gippsland Highway.	Potential to impact amenity through excessive or elevated dust levels	Proximity to site	Possible	Moderate	Medium	Vegetation maintained. Topsoiled and planted pasture on terminal batters awaiting rehabilitation within 3 months and interim batters between stages inactive for greater than 12 months. Pasture to be fully established within 12 months. Vegetation maintained. Cessation at Quarry Manager's discretion based on visual observation or stakeholder engagement. All plant and equipment maintained as per manufacturer specification. No nuisance dust impacts to sensitive receptors. Data collected and utilised to inform and adapt, if necessary, the ongoing dust management, and to ensure that the EPA General Environmental Duty is met (subject to review as quarry stages develop).	Unlikely	Moderate	Medium	Complaints and observations/comments from sensitive receptors	Complaints and comments recorded	YES	
Dust	11	Excessive dust when stripping top soil leaving the WA boundary	Yes	Yes	No	Surrounding Residences Public Roads	5 residences located within 1km of the Work Authority boundary, the closest to the extraction boundary being one at 250m, two at 270m and one at 580m. Site abuts South Gippsland Highway.	Potential to impact amenity through excessive or elevated dust levels	Proximity to site	Possible	Moderate	Medium	Compliance to maximum disturbed area. Water cart and ample supply of water available on forecast hot dry or during extended dry periods when inherent moisture content is reduced. Installation and use. Wetting at Quarry Manager's discretion based on visual observation or stakeholder engagement. Speed / Traffic management signs maintained at critical locations and on the main quarry access track	Unlikely	Moderate	Medium	Complaints and observations/comments from sensitive receptors	Complaints and comments recorded	YES	
Dust	12	Excessive dust during rehabilitation leaving the WA boundary	No	Yes	Yes	Surrounding Residences Public Roads	5 residences located within 1km of the Work Authority boundary, the closest to the extraction boundary being one at 250m, two at 270m and one at 580m. Site abuts South Gippsland Highway.	Potential to impact amenity through excessive or elevated dust levels	Proximity to site	Possible	Moderate	Medium	Compliance to maximum disturbed area. Water cart and ample supply of water available on forecast hot dry or during extended dry periods when inherent moisture content is reduced. Installation and use. Wetting at Quarry Manager's discretion based on visual observation or stakeholder engagement. Speed / Traffic management signs maintained at critical locations and on the main quarry access track	Unlikely	Moderate	Medium	Complaints and observations/comments from sensitive receptors	Complaints and comments recorded	YES	

Quarrying or Rehabilitation Hazard	Risk No.	Risk Event	Phase			Sensitive Receptors			Evidence to support assessment	Inherent Risk Assessment			Control Measures	Performance Standards	Residual Risk Assessment			Monitoring and Ongoing Management		Detailed Risk Treatment Plan attached?
			Construction	Operation	Rehabilitation	Details of sensitive receptor	Location and proximity to site	How hazard may harm receptor		Likelihood	Consequence	Risk Rating			Likelihood	Consequence	Risk Rating	Aspect to be monitored	Details of monitoring and ongoing management	
Surface Water Flows	13	Turbid (dirty) water leaving the site.	Yes	Yes	Yes	Melbourne Water asset DR2504 Neighbouring properties	Surface drainage line on northern boundary Downstream landowners	Potential detriment to water quality and beneficial users	Proximity to site	Possible	Moderate	Medium	Construct northern waterway diversion and fully rehabilitate early in project life, in accordance with Melbourne Water approval. Maintain compliance to any Melbourne Water conditions regarding management of surface water diversion / works on waterway. Construct roads with sufficient diversion drains and culverts to ensure that clean stormwater is diverted away from roads. Install a rain gauge at the Site Office, and check hourly during heavy rainfall. Ensure that the gradient and orientation of tracks do not cause runoff to be fast flowing. Arrange drainage of roads to be a vegetated area through erosion protection structures. Ensure that drainage from an area where fuels/ lubricants/ hazardous material are stored / used is directed to a sump or an interceptor trap. Install diversion drainage structures (pipes, bunds, cut off drains, swales drains etc) up-gradient of working areas to divert surface water flows over undisturbed ground and prevent clean surface water from entering the site and becoming contaminated. Soil and overburden mounds used as diversion structures contoured and grassed and not contributing to turbid water. Diversion drains typically 1m wide and 0.4m deep adequate to accommodate the surface water flows storm events (i.e. 5% AEP). Trigger Action Response Plan (TARP – Rainfall / Storm Events) implemented for significant rainfall events and to manage freeboard on above-ground water storage (farm dam).	Compliance with Melbourne Water approved design and approval conditions for waterway diversion. Compliance to Work Plan Conditions. Survey set out of roads and designs where necessary employ surface treatment to reduce erosion. Record time and date, when emptied for a manual system, or download and save data logger file for automatic system. Maintenance of tracks to minimise erosion. Side and angled drain off collection drains protected against erosion. Compliance to Work Plan and Site Layout Plan. Surface water diversion structures installed as per Surface Water Management Plan and effectively intercepting surface water before it reaches operating areas. Diversion mounds contoured and vegetated and showing no evidence of erosion. Diversion drains capable of handling major (5% AEP) storm event. TARP actions in Surface Water Management Plan implemented to manage impacts of significant rainfall events and manage freeboard level in water storage (farm dam).	Unlikely	Moderate	Medium	Integrity and performance of diversion of Melbourne Water asset DR2504. Erosion control structures (ie sediment fences). Effectiveness of diversion drainage structures (swale drains, bunds, etc).	Inspect to assess the potential for contaminated stormwater to exit the site. Inspect and maintain erosion control structures. Inspected and maintained as required.	YES
Surface Water Flows	14	Inundation of quarry from flooding	Yes	Yes	Yes	Melbourne Water asset DR2504 on northern boundary Neighbouring properties	Surface drainage line on northern boundary Downstream landowners	Potential detriment to water quality and beneficial users	Proximity to site	Possible	Major	High	Operator training, operating procedures and supervision regarding discovery of Aboriginal or historic artefacts.	Monitoring for heritage artefacts during all soil and subsoil removal activities. Compliance to Work Authority and Work Plan conditions.	Unlikely	Moderate	Medium	Aboriginal and Historical heritage	Monitoring for heritage artefacts during all soil and subsoil removal activities, with contingency management measures in place.	YES
Ground Disturbance	15	Ground disturbing works inadvertently impacting on Aboriginal cultural heritage	Yes	Yes	Yes	Aboriginal cultural heritage	Aboriginal Cultural Heritage Sensitivity (ACHS) areas located outside the WA boundary to east and west	Potential for discovered aboriginal cultural heritage to be impacted by ground disturbing activities	Aboriginal cultural heritage could possibly be discovered during operations	Possible	Moderate	Medium	Quarry Manager aware of requirements of Aboriginal Heritage Act 2006 and Heritage Act 2017 and contingency measures for the discovery of any artefacts.	Monitoring for heritage artefacts during all soil and subsoil removal activities. Compliance to Work Authority and Work Plan conditions.	Rare	Moderate	Medium	Aboriginal and Historical heritage	Monitoring for heritage artefacts during all soil and subsoil removal activities, with contingency management measures in place.	YES
Ground Disturbance	16	Ground disturbing works inadvertently impacting on historical heritage	Yes	Yes	Yes	Historical heritage	No Listed heritage within 300m to site	Potential for discovered historical heritage to be impacted by ground disturbing activities	Historical heritage could possibly be discovered during operations	Possible	Minor	Medium	Operator training, operating procedures and supervision regarding discovery of Aboriginal or historic artefacts.	Standard Operating Procedures	Unlikely	Minor	Low	Aboriginal and Historical heritage	Monitoring for heritage artefacts during all soil and subsoil removal activities, with contingency management measures in place.	YES
Ground Disturbance	17	Ground disturbing works impacting on ecological values of retained native vegetation.	Yes	Yes	Yes	Ecological values of retained native vegetation	Native vegetation located around margins of the site	Potential for retained native vegetation to be impacted by ground disturbing activities	Proximity to site	Possible	Minor	Medium	Fencing and signage of no-go areas, i.e. Tree Protection Zone at east end of site. Maintaining agreed buffer zones. Maintain planted vegetation to ensure continued viability.	Site Layout Plan	Unlikely	Minor	Low	Unauthorised impacts on retained native vegetation. Condition of planted vegetation	Fencing and buffer zone security and maintenance will be monitored through regular inspections. All inspections, and any subsequent actions will be documented in the site record book. Monitor for continued viability and maintain as necessary.	YES
Ground Disturbance	18	Ground disturbing works impacting on groundwater beneficial uses	Yes	Yes	Yes	Groundwater	Ground water estimated at 1-4m below quarry floor	Potential to be impacted by ground disturbing activities intersecting groundwater	Proximity to site. Monitoring bores	Possible	Major	High	Monitor and manage groundwater in accordance with Groundwater Management Plan and included TARPs. Maintain compliance to any conditions of Rural Water Authority and/or EPA regarding management of groundwater impacts.	Groundwater Management Plan and TARPs implemented in accordance with Nolan Consulting hydrogeological assessment. Compliance to Work Plan Conditions and any EPA permission.	Unlikely	Moderate	Medium	Groundwater impacts - onsite. Groundwater impacts – offsite: engagement with owners of the nearest supply bores to confirm that their bore levels have not been adversely impacted.	Ground water monitoring bores and dewatering activities in accordance with Groundwater Management Plan (GMP) and the SRW extraction licences. Annual engagement, from end of Stage 2, or as necessary, in accordance with Groundwater Management Plan (GMP).	YES
Ground Disturbance	19	Ground disturbing works impacting on acidity of runoff and water in pit lake	No	Yes	Yes	Surface water and pit lake	Surface water runoff from stockpiles and onsite pit	Potential to be impacted by ground disturbing activities intersecting potentially acid generating materials	Resource drilling logs	Likely	Major	Very High	Identify any potential acid generating materials that are excavated and, if not to be processed, return to pit (below water) as soon as practicable. Stockpiles that could potentially generate acid (product, excavated material for processing, overburden / interburden, or consolidated slimes) placed within designated areas with all runoff directed to the in pit water storage via an interceptor trap. Acidity of runoff through interceptor trap and water sourced from onsite bores monitored and treated, if necessary, to maintain pH at near neutral.	Acid generation from excavated materials is minimised. Note: in-situ overburden and topsoil materials above groundwater level do not have any potential for acid generation. Any acid runoff generated from stockpiles is directed to the in pit water storage via an interceptor trap, where (if necessary) it can be treated with neutralising agents. Runoff directed to the in pit water storage via an interceptor trap and water sourced from onsite bores treated (if necessary) with neutralising agents – maintaining near neutral pH. Neutralising agents applied by appropriately trained staff / contractors and used in accordance with manufacturer's recommendations.	Unlikely	Moderate	Medium	Performance of measures to capture and treat acidic runoff from the Processing and Stockpiling area and the Temporary Materials Storage and Handling areas. Acidity of collected runoff and water supply.	Monthly inspections of all control structures in accordance with the site Surface Water Management Plan will be conducted, as well as following significant rainfall events (in accordance with TARP), remedial works as required. Inspections, and any required monitoring and remedial actions, documented in site record book. Routine weekly monitoring of acidity in return water from processing plant, water collected in interceptor traps and water supply from bores and in pit water storage. Required to maintain effectiveness of flocculants as well as water quality.	YES
Ground Disturbance	20	Ground disturbing works impacting AusNet power poles and/or powerline	Yes	Yes	Yes	AusNet powerline	Easement through southern portion of proposed disturbance	Potential to be impacted by ground disturbance within the WA	Proximity to site	Likely	Moderate	High	Appropriate signage and alerts near power lines and power poles. Relocation of powerlines through formal application to AusNet Services prior to commencing Stages 2 or 3. Staged construction of screening bund (including vegetation) will maintain 5m separation from powerline, before and after relocation.	Standard Operating Procedures (SOPs). Powerlines and easement relocated in accordance with AusNet Services requirements, before any extraction within Stages 2 or 3 (as per approved Site Layout Plan). Powerline, before and after relocation, remains at least 5m from screening bund and associated vegetation. Note: AusNet Services advises that relocated powerline can utilise much taller power poles where powerline needs to cross over the crest of the screening bund.	Rare	Moderate	Medium	Separation distance to powerline. Trigger for relocation of powerlines	Ensure that staged construction of screening bund and planted vegetation maintains a 5m separation to powerline. Ensure that AusNet application process for relocation of powerlines occurs in a timely manner, before commencing extraction in Stages 2 or 3 (as per approved Site Layout Plan)	YES

Quarrying or Rehabilitation Hazard	Risk No.	Risk Event	Phase			Sensitive Receptors				Inherent Risk Assessment			Control Measures	Performance Standards	Residual Risk Assessment			Monitoring and Ongoing Management		Detailed Risk Treatment Plan attached?
			Cons ^{10m}	Open ^{10m}	Rehab ^{10m}	Details of sensitive receptor	Location and proximity to site	How hazard may harm receptor	Evidence to support assessment	Likelihood	Consequence	Risk Rating			Likelihood	Consequence	Risk Rating	Aspect to be monitored	Details of monitoring and ongoing managmnt	
Ground Instability	21	Slope / embankment failure impacting beyond WA boundary	Yes	Yes	Yes	Private land Crown land Surface water	Adjacent land owners Site abuts South Gippsland Highway. Melbourne Water Asset DR2504 on northern boundary	Potential to be impacted by ground instability within the WA	Proximity to site	Possible	Major	High	Marking out Extraction Boundary Fencing and signage to indicate "No Go" areas, buffer areas, infrastructure areas. Maintain agreed buffer zones. Divert surface water away from batters / embankments with culverts, swale drains and bunds. Compliance to design of all quarry faces, embankments and mounds. Initial stability assessment, as triggered by Ground Control Management Plan to confirm material parameters and slope design. Minimum five-yearly stability reviews after initial stability assessment. Dewatering of exposed batters and berms, with surface drainage controls in place. Site inspections at least monthly and before (if possible) forecast and immediately after significant rain fall events. Investigation of any localised bench failures. Construction of shallow waterway diversion to Melbourne Water requirements and disturbed areas fully revegetated promptly.	Extraction Boundary marked with Yellow Posts. Suitable Fencing and signage in place and effective. Compliance to Work Plan / Site Layout Plan / Ground Control Management Plan. Review triggered and undertaken once a suitable depth of material is exposed, in accordance with Ground Control Management Plan, and performed by a suitably qualified and experienced person. Reviews undertaken in accordance with Ground Control Management Plan and performed by a suitably qualified and experienced person. Water management as per Surface Water Management Plan. Compliance to Rehabilitation Plan (Monitoring schedule). Waterway diversion constructed in accordance with Melbourne Water approval and detailed design parameters, including prompt establishment of vegetation to prevent erosion.	Rare	Major	Medium	Slope stability	Inspections will be conducted of extraction area faces (both operating and rehabilitated), extraction pit perimeter and site surface water management structures in accordance with Ground Control Management Plan. Standard operating procedures require all operators to report changes in ground conditions. Inspections, reports and any remedial actions will be documented in site record book. Results of site inspection and any remediation works recorded in the Site Manager's Record book. Minimum monthly inspections and after rain events, in accordance with Surface Water Management Plan, will be conducted and include all surface water management structures. Inspections, and any required monitoring and remedial actions documented in site record book.	YES
Ground Instability	22	Localised (single bench) failure	Yes	Yes	No	Private land Crown land Surface water	Adjacent land owners Site abuts South Gippsland Highway. Melbourne Water Asset DR2504 on northern boundary	Potential to be impacted by ground instability within the WA	Proximity to site	Possible	Minor	Medium	Construction of shallow waterway diversion to Melbourne Water requirements and disturbed areas fully revegetated as soon as practicable	Waterway diversion constructed in accordance with Melbourne Water approval and detailed design parameters, including prompt establishment of vegetation to prevent erosion.	Unlikely	Minor	Low	Surface water management	Minimum monthly inspections, and after rain events, for landform stability and establishment of vegetation on disturbed ground, until full stabilisation of constructed waterway diversion. Annual inspections, and after significant rain events, thereafter.	YES
Ground Instability	23	Construction of waterway diversion impacts on stability of adjacent Bass Gas Pipeline easement or adjacent land	Yes	Yes	No	Bass Gas Pipeline Private land	Pipeline easement adjacent to 200m length of northern boundary Adjoining private land	Potential to be impacted by construction of waterway diversion	Proximity to site	Unlikely	Moderate	Medium	Construction of shallow waterway diversion to Melbourne Water requirements and disturbed areas fully revegetated as soon as practicable	Waterway diversion constructed in accordance with Melbourne Water approval and detailed design parameters, including prompt establishment of vegetation to prevent erosion.	Rare	Minor	Low	Landform stability of constructed waterway diversion (Melbourne Water asset DR2504)	Minimum monthly inspections, and after rain events, for landform stability and establishment of vegetation on disturbed ground, until full stabilisation of constructed waterway diversion. Annual inspections, and after significant rain events, thereafter.	YES
Erosion and Sedimentation	24	Erosion from roads and disturbed areas	Yes	Yes	Yes	Surface waterways Neighbouring properties and environment	Melbourne Water Asset DR2504 on northern boundary Adjacent landowners	Potential to be impacted by sediment-laden surface waters	Proximity to site downstream	Likely	Moderate	High	Sediment traps, diversion drains, bunds, sediment fences, vegetation windrows, temporary and long-term mounds and any other necessary controls, adapted as required, around all ground disturbing activities. Maintain compliance to any conditions of Melbourne Water and/or EPA regarding management of any potential offsite discharge. Design of all quarry pit crests to incorporate swale drains and/or diversion bunds as required. Divert surface water away from disturbed area with swale drains and bunds. Control structures on all internal roads and tracks. Strategic location of any sedimentation traps. Any sand extracted with a grab crane or drag line will be allowed to dewater before delivery to the processing plant. Runoff from designated areas for processing and stockpiles (product, excavated material for processing, overburden / interburden, or consolidated slimes) directed to the in pit water storage via a sediment / interceptor trap. Overburden / interburden stockpiles, if not on drained hardstands, have a contour drain at the base to intercept / direct runoff into the site sediment controls. Contour, vegetate and stabilise topsoil and overburden stockpiles to be retained more than 6 months. Establish initial pasture on upper terminal batters, as soon as practicable, and also interim batters left for more than 12 months between stages. Trigger Action Response Plan (TARP – Rainfall / Storm Events) implemented for significant rainfall events.	Erosion and sediment control structures as per Surface Water Management Plan Construction of erosion and sediment control features consistent with EPA guidelines. Compliance to Work Plan Conditions and any EPA permission. All works in accordance with design. Minimal surface flows over disturbed areas. Control structures in place. Sediment traps located as per Surface Water Management Plan. Sediment-laden water draining from material extracted by grab crane or drag line (temporarily stockpiled) flows directly back into the excavation. Runoff from all processing and stockpiling areas is directed to the in pit water storage via a sediment / interceptor trap. Sediment-laden water draining from overburden / interburden stockpiles prevented from discharging from disturbance areas. Topsoil and overburden stockpiles stabilised when retained more than 6 months from construction. Vegetation maintained. Topsoiled and planted pasture on upper terminal batters awaiting rehabilitation within 3 months and interim batters between stages inactive for greater than 12 months. Pasture to be fully established within 12 months. Any erosion on rehabilitated upper terminal batters that are not yet stabilised is within erosion acceptance criteria (above). Vegetation maintained and remedial action taken if erosion criteria exceeded. TARP actions in Surface Water Management Plan implemented to manage impacts of significant rainfall events.	Possible	Moderate	Medium	Water management structures (drains, bunds, sediment traps, etc) evaluated for performance Evidence of erosion, and subsequent sediment-laden runoff Surface water quality	Inspection of all water management structures after each significant rainfall event, in accordance with TARP in Surface Water Management Plan, remedial works as required. Monthly inspections will be conducted of the site, as well as following significant rainfall events (in accordance with TARP), which will include waste dumps, topsoil stockpiles, surface water management structures and potential receiving drainage lines. Inspections, and any required monitoring and remedial actions documented in site record book. Specific surface water quality monitoring is not proposed but may be undertaken if directed by the ERR.	YES
Erosion and Sedimentation	25	Erosion from bunds	Yes	Yes	Yes	Surface waterways Neighbouring properties and environment	Melbourne Water Asset DR2504 on northern boundary Adjacent landowners	Potential to be impacted by sediment-laden surface waters	Proximity to site downstream	Likely	Moderate	High	Design of all quarry pit crests to incorporate swale drains and/or diversion bunds as required. Divert surface water away from disturbed area with swale drains and bunds. Control structures on all internal roads and tracks. Strategic location of any sedimentation traps. Any sand extracted with a grab crane or drag line will be allowed to dewater before delivery to the processing plant. Runoff from designated areas for processing and stockpiles (product, excavated material for processing, overburden / interburden, or consolidated slimes) directed to the in pit water storage via a sediment / interceptor trap. Overburden / interburden stockpiles, if not on drained hardstands, have a contour drain at the base to intercept / direct runoff into the site sediment controls. Contour, vegetate and stabilise topsoil and overburden stockpiles to be retained more than 6 months. Establish initial pasture on upper terminal batters, as soon as practicable, and also interim batters left for more than 12 months between stages. Trigger Action Response Plan (TARP – Rainfall / Storm Events) implemented for significant rainfall events.	Erosion and sediment control structures as per Surface Water Management Plan Construction of erosion and sediment control features consistent with EPA guidelines. Compliance to Work Plan Conditions and any EPA permission. All works in accordance with design. Minimal surface flows over disturbed areas. Control structures in place. Sediment traps located as per Surface Water Management Plan. Sediment-laden water draining from material extracted by grab crane or drag line (temporarily stockpiled) flows directly back into the excavation. Runoff from all processing and stockpiling areas is directed to the in pit water storage via a sediment / interceptor trap. Sediment-laden water draining from overburden / interburden stockpiles prevented from discharging from disturbance areas. Topsoil and overburden stockpiles stabilised when retained more than 6 months from construction. Vegetation maintained. Topsoiled and planted pasture on upper terminal batters awaiting rehabilitation within 3 months and interim batters between stages inactive for greater than 12 months. Pasture to be fully established within 12 months. Any erosion on rehabilitated upper terminal batters that are not yet stabilised is within erosion acceptance criteria (above). Vegetation maintained and remedial action taken if erosion criteria exceeded. TARP actions in Surface Water Management Plan implemented to manage impacts of significant rainfall events.	Possible	Moderate	Medium	Water management structures (drains, bunds, sediment traps, etc) evaluated for performance Evidence of erosion, and subsequent sediment-laden runoff Surface water quality	Inspection of all water management structures after each significant rainfall event, in accordance with TARP in Surface Water Management Plan, remedial works as required. Monthly inspections will be conducted of the site, as well as following significant rainfall events (in accordance with TARP), which will include waste dumps, topsoil stockpiles, surface water management structures and potential receiving drainage lines. Inspections, and any required monitoring and remedial actions documented in site record book. Specific surface water quality monitoring is not proposed but may be undertaken if directed by the ERR.	YES
Erosion and Sedimentation	26	Erosion from stockpiles (product and other) and hardstand areas	Yes	Yes	No	Surface waterways Neighbouring properties and environment	Melbourne Water Asset DR2504 on northern boundary Adjacent landowners	Potential to be impacted by sediment-laden surface waters	Proximity to site downstream	Likely	Moderate	High	Design of all quarry pit crests to incorporate swale drains and/or diversion bunds as required. Divert surface water away from disturbed area with swale drains and bunds. Control structures on all internal roads and tracks. Strategic location of any sedimentation traps. Any sand extracted with a grab crane or drag line will be allowed to dewater before delivery to the processing plant. Runoff from designated areas for processing and stockpiles (product, excavated material for processing, overburden / interburden, or consolidated slimes) directed to the in pit water storage via a sediment / interceptor trap. Overburden / interburden stockpiles, if not on drained hardstands, have a contour drain at the base to intercept / direct runoff into the site sediment controls. Contour, vegetate and stabilise topsoil and overburden stockpiles to be retained more than 6 months. Establish initial pasture on upper terminal batters, as soon as practicable, and also interim batters left for more than 12 months between stages. Trigger Action Response Plan (TARP – Rainfall / Storm Events) implemented for significant rainfall events.	Erosion and sediment control structures as per Surface Water Management Plan Construction of erosion and sediment control features consistent with EPA guidelines. Compliance to Work Plan Conditions and any EPA permission. All works in accordance with design. Minimal surface flows over disturbed areas. Control structures in place. Sediment traps located as per Surface Water Management Plan. Sediment-laden water draining from material extracted by grab crane or drag line (temporarily stockpiled) flows directly back into the excavation. Runoff from all processing and stockpiling areas is directed to the in pit water storage via a sediment / interceptor trap. Sediment-laden water draining from overburden / interburden stockpiles prevented from discharging from disturbance areas. Topsoil and overburden stockpiles stabilised when retained more than 6 months from construction. Vegetation maintained. Topsoiled and planted pasture on upper terminal batters awaiting rehabilitation within 3 months and interim batters between stages inactive for greater than 12 months. Pasture to be fully established within 12 months. Any erosion on rehabilitated upper terminal batters that are not yet stabilised is within erosion acceptance criteria (above). Vegetation maintained and remedial action taken if erosion criteria exceeded. TARP actions in Surface Water Management Plan implemented to manage impacts of significant rainfall events.	Possible	Moderate	Medium	Water management structures (drains, bunds, sediment traps, etc) evaluated for performance Evidence of erosion, and subsequent sediment-laden runoff Surface water quality	Inspection of all water management structures after each significant rainfall event, in accordance with TARP in Surface Water Management Plan, remedial works as required. Monthly inspections will be conducted of the site, as well as following significant rainfall events (in accordance with TARP), which will include waste dumps, topsoil stockpiles, surface water management structures and potential receiving drainage lines. Inspections, and any required monitoring and remedial actions documented in site record book. Specific surface water quality monitoring is not proposed but may be undertaken if directed by the ERR.	YES
Process Water and Storages	27	Discharge from overtopping of water storage dams to surface waterways and the environment.	Yes	Yes	Yes	Surface waterways Neighbouring properties and environment	Melbourne Water Asset DR2504 on northern boundary Adjacent landowners	Potential to be impacted by uncontrolled release / overtopping of water storages	Proximity to site downstream	Possible	Minor	Medium	Control structures on hard stand areas and all internal roads and tracks. Regular inspection of above-ground water storage (farm dam) wall integrity. Maintenance of appropriate freeboard on above ground water storage (farm dam) to ensure storage integrity. Trigger Action Response Plan (TARP – Water Storages) implemented to manage freeboard on water storage (farm dam) Excess water in water storage (farm dam) will be irrigated to rehabilitated areas or surrounding pasture.	Control structures in place and functional. Checklists completed and remedial action documented. Integrity of water storage dam maintained through management of freeboard levels. TARP actions in Surface Water Management Plan implemented to manage freeboard levels. No water stored at more than maximum freeboard level in water storage (farm dam).	Unlikely	Minor	Low	Dam Wall integrity Storage capacity / freeboard in water storage (farm dam)	Monthly inspections Rainfall events and storage freeboard (see TARP in Surface Water Management Plan for details)	YES
Process Water and Storages	28	Failure of a water storage resulting in discharge to surface waterways and the environment.	Yes	Yes	Yes	Surface waterways Neighbouring properties and environment	Melbourne Water Asset DR2504 on northern boundary Adjacent landowners	Potential to be impacted by uncontrolled release / overtopping of water storages	Proximity to site downstream	Possible	Minor	Medium	Control structures on hard stand areas and all internal roads and tracks. Regular inspection of above-ground water storage (farm dam) wall integrity. Maintenance of appropriate freeboard on above ground water storage (farm dam) to ensure storage integrity. Trigger Action Response Plan (TARP – Water Storages) implemented to manage freeboard on water storage (farm dam) Excess water in water storage (farm dam) will be irrigated to rehabilitated areas or surrounding pasture.	Control structures in place and functional. Checklists completed and remedial action documented. Integrity of water storage dam maintained through management of freeboard levels. TARP actions in Surface Water Management Plan implemented to manage freeboard levels. No water stored at more than maximum freeboard level in water storage (farm dam).	Unlikely	Minor	Low	Dam Wall integrity Storage capacity / freeboard in water storage (farm dam)	Monthly inspections Rainfall events and storage freeboard (see TARP in Surface Water Management Plan for details)	YES

Quarrying or Rehabilitation Hazard	Risk No.	Risk Event	Phase			Sensitive Receptors			Evidence to support assessment	Inherent Risk Assessment			Control Measures	Performance Standards	Residual Risk Assessment			Monitoring and Ongoing Management		Detailed Risk Treatment Plan attached?				
			Cons ^{10m}	Open ^{10m}	Rehab ^{10m}	Details of sensitive receptor	Location and proximity to site	How hazard may harm receptor		Likelihood	Consequence	Risk Rating			Likelihood	Consequence	Risk Rating	Aspect to be monitored	Details of monitoring and ongoing managmnt					
Slimes Storage	29	Slimes discharging to surface waterways as a result of flooding / overtopping	No	Yes	Yes	Surface water Environment	Melbourne Water asset DR2504 Adjacent to site	Slimes release may impact surface water quality and downstream users	Proximity to site	Unlikely	Moderate	Medium	<p>Minimise wet slimes production by operation of thickeners and mechanical dewatering / pressing process.</p> <p>Surface drainage controls to direct sediment-laden return water from the processing plant and hardstand to the in pit water storage.</p> <p>Stockpiles of consolidated slimes placed within designated areas, with all runoff directed to the in pit water storage via an sediment / interceptor trap.</p> <p>Ensure any wet slimes placed into the in pit process water storage is deposited below standing ground water level.</p> <p>Accumulated wet slimes within the in pit process water storage that exceeds 3m depth will be pumped to processing plant for consolidation.</p> <p>Construct northern waterway diversion early in project life to prevent flooding of pit.</p>	<p>Construction and operation of suitable slimes thickener and dewatering / pressing equipment. Reliability of slimes processing plant to produce 'spadeable' consistency waste stream for blending with overburden/interburden, or plant oversize/waste, and used in partial backfill of excavation areas and site rehabilitation, where suitable.</p> <p>Surface water management structures in place, maintained and adequate to capture sediment-laden return water from processing plant, as per Surface Water Management Plan.</p> <p>Any sediment-laden runoff generated from stockpiles is directed to the in pit water storage via a sediment / interceptor trap.</p> <p>Deposition below water.</p> <p>Depth of wet slimes, over the quarry life, is prevented from accumulating in the in pit process water storage and posing a hazard for site rehabilitation.</p> <p>Compliance with Melbourne Water approved design and approval conditions.</p>	Rare	Minor	Low	Performance of slimes thickener and dewatering equipment.	Performance of surface water management for processing plant and hardstand area, as well as designated stockpile areas.	Water quality within in pit process water storage, and the depth of any deposited wet slimes material.	Monthly inspections, documented in site record book and any required monitoring and remedial actions.	Routine weekly inspection of the in pit process water storage. Required to maintain effectiveness of wash plant as well as water quality.	YES	
Imported Materials	30	Impacts on the natural environment, including on surface and groundwater, from imported materials containing weeds or other contaminants	Yes	Yes	Yes	Surface water Groundwater Environment	Melbourne Water asset DR2504 Groundwater will be exposed within the excavation Adjacent land uses and immediate neighbours	Potential to be impacted by contaminated soil / material imported to the site	Proximity to site	Possible	Minor	Medium	<p>Any imported material handled in accordance with Imported Materials Management Plan.</p> <p>Source/supplier of imported material vetted for reputability. All deliveries of imported materials accompanied by a 'Delivery Driver Checklist', or similar docket.</p> <p>Confirm the EPA waste classification of the imported materials and confirm that the site is authorised to receive that material, and the importation meets all other EPA / ERR requirements.</p> <p>Visual inspection of all inbound materials prior to accepting on site, and again on stockpile at point of dumping - rejected loads immediately removed from site.</p> <p>Incidental waste that may later be discovered in imported materials are separated, sorted and removed from site.</p> <p>No imported material stockpiled outside of approved disturbance area.</p> <p>Monitor imported material volumes.</p>	<p>Imported Materials Management Plan in place before the importation of any material, consistent with relevant guidelines and EPA legislation.</p> <p>Imported Materials Management Plan in place and all records / checklists up to date.</p> <p>No stockpiles of imported material outside of approved disturbance area.</p> <p>Imported material volumes monitored to ensure allowed limits are not exceeded.</p>	Unlikely	Minor	Low					YES		
Imported Materials	31	Impacts on the natural environment, including surface and groundwater, from hazardous waste/materials being imported to site	Yes	Yes	Yes	Surface water Groundwater Environment	Melbourne Water asset DR2504 Groundwater will be exposed within the excavation Adjacent land uses and immediate neighbours	Potential to be impacted by contaminated soil / material imported to the site	Proximity to site	Possible	Minor	Medium	<p>Visual inspection of all inbound materials prior to accepting on site, and again on stockpile at point of dumping - rejected loads immediately removed from site.</p> <p>Incidental waste that may later be discovered in imported materials are separated, sorted and removed from site.</p> <p>No imported material stockpiled outside of approved disturbance area.</p> <p>Monitor imported material volumes.</p>	<p>Imported Materials Management Plan in place and all records / checklists up to date.</p> <p>No stockpiles of imported material outside of approved disturbance area.</p> <p>Imported material volumes monitored to ensure allowed limits are not exceeded.</p>	Unlikely	Minor	Low	Source and characteristics of any imported material	The Imported Materials Management Plan requires documentation and records of material type, EPA waste classification, tonnages, source/suppliers, inspections and any subsequent remedial action or rejection		YES			
Imported Materials	32	Impacts on the natural environment, including surface and groundwater, from introducing soil-borne diseases to site	Yes	Yes	Yes	Surface water Groundwater Environment	Melbourne Water asset DR2504 Groundwater will be exposed within the excavation Adjacent land uses and immediate neighbours	Potential for the land to be impacted by contaminated soil / material imported to the site	Proximity to site	Possible	Minor	Medium	<p>Visual inspection of all inbound materials prior to accepting on site, and again on stockpile at point of dumping - rejected loads immediately removed from site.</p> <p>Incidental waste that may later be discovered in imported materials are separated, sorted and removed from site.</p> <p>No imported material stockpiled outside of approved disturbance area.</p> <p>Monitor imported material volumes.</p>	<p>Imported material volumes monitored to ensure allowed limits are not exceeded.</p>	Unlikely	Minor	Low				YES			
Unauthorised Site Access	33	Unauthorised access to quarry faces/water bodies could result in personal injury	Yes	Yes	Yes	Public safety	Site may be accessible from public roads Unauthorised entry from public roads	Potential for unsupervised visitors to harm themselves	Proximity to site	Unlikely	Critical	High	<p>Gates and fences of suitable design and standard. Access gates to be locked when site unattended</p> <p>Signage on fencing warning of operations and high faces</p> <p>Equipment locked and secured when not in use.</p> <p>Design and construct onsite roads to safely accommodate the size and type of vehicles accessing and travelling within the site. Separate any general traffic from any internal haul routes.</p> <p>Visitor supervision</p>	<p>Fencing and gates in place and secured</p> <p>Signage installed</p> <p>Equipment locked and secured when not in use</p> <p>Traffic management implemented</p> <p>Visitor parking at WA entrance and Visitors record book maintained</p>	Rare	Critical	High	Boundary and site fencing integrity	Annual inspection of all site boundary fencing and gates.	Site visitors	Visitors record book entries completed	Unauthorised entries	Records kept of unauthorised entries	YES
Unauthorised Site Access	34	Unauthorised access to operating equipment or plant could result in personal injury	Yes	Yes	Yes	Public safety	Site may be accessible from public roads Unauthorised entry from public roads	Potential for unsupervised visitors to harm themselves	Proximity to site	Possible	Critical	Very High	<p>Gates and fences of suitable design and standard. Access gates to be locked when site unattended</p> <p>Signage on fencing warning of operations and high faces</p> <p>Equipment locked and secured when not in use.</p> <p>Design and construct onsite roads to safely accommodate the size and type of vehicles accessing and travelling within the site. Separate any general traffic from any internal haul routes.</p> <p>Visitor supervision</p>	<p>Fencing and gates in place and secured</p> <p>Signage installed</p> <p>Equipment locked and secured when not in use</p> <p>Traffic management implemented</p> <p>Visitor parking at WA entrance and Visitors record book maintained</p>	Unlikely	Critical	High	Boundary and site fencing integrity	Annual inspection of all site boundary fencing and gates.	Site visitors	Visitors record book entries completed	Unauthorised entries	Records kept of unauthorised entries	YES
Fuel, Lubricants and other Hazardous Materials	35	Fuel / oil leakage from equipment (mechanical failure, accident) resulting in impacts on the environment	Yes	Yes	Yes	Surface waters Groundwater Environment	Melbourne Water asset DR2504 Groundwater will be exposed within the excavation area Adjacent land uses and immediate neighbours	Hydrocarbon and/or chemical release to environment	Proximity to site	Possible	Moderate	Medium	<p>Hydrocarbon storage in accordance with AS 1940 (The Storage and Handling of Flammable and Combustible Liquids) and the Dangerous Goods (Storage and Handling) Regulations 2002</p> <p>A contaminants spill kit available at all times when any minor servicing and/or simple maintenance tasks are undertaken on site.</p> <p>Major servicing / repairs conducted at workshop in appropriately bunded area.</p> <p>Any areas where refuelling / minor servicing activities or flocculant use are being undertaken are drained to ensure no water leaves the site without first going through an interceptor trap</p> <p>MSDS sheets readily available for all dust suppressants, flocculants, neutralising agents, herbicides, pesticides, copper sulphate and any other chemicals used or stored on site.</p> <p>All chemicals stored in accordance with the EPA Liquid Storage and Handling Guidelines and relevant Australian Standard.</p>	<p>Storage in accordance with the standards.</p> <p>Spill kits available.</p> <p>Workshop fitted with triple interceptor trap and water management structures</p> <p>Surface drainage and other water management controls, directing to an interceptor trap, in place and effective.</p> <p>MSDS sheets for all chemicals used or stored on site maintained in the site office</p> <p>Chemical storage in accordance with the guidelines, MSDS sheets and relevant standards.</p>	Unlikely	Moderate	Medium	Integrity of fuel and chemical storages	Monthly site inspections	Pollution controls and surface drainage effective and maintained.				YES
Fuel, Lubricants and other Hazardous Materials	36	Spills / discharges whilst refuelling resulting in impacts on the environment	Yes	Yes	Yes	Surface waters Groundwater Environment	Melbourne Water asset DR2504 Groundwater will be exposed within the excavation area Adjacent land uses and immediate neighbours	Hydrocarbon and/or chemical release to environment	Proximity to site	Possible	Moderate	Medium	<p>Hydrocarbon storage in accordance with AS 1940 (The Storage and Handling of Flammable and Combustible Liquids) and the Dangerous Goods (Storage and Handling) Regulations 2002</p> <p>A contaminants spill kit available at all times when any minor servicing and/or simple maintenance tasks are undertaken on site.</p> <p>Major servicing / repairs conducted at workshop in appropriately bunded area.</p> <p>Any areas where refuelling / minor servicing activities or flocculant use are being undertaken are drained to ensure no water leaves the site without first going through an interceptor trap</p> <p>MSDS sheets readily available for all dust suppressants, flocculants, neutralising agents, herbicides, pesticides, copper sulphate and any other chemicals used or stored on site.</p> <p>All chemicals stored in accordance with the EPA Liquid Storage and Handling Guidelines and relevant Australian Standard.</p>	<p>Storage in accordance with the standards.</p> <p>Spill kits available.</p> <p>Workshop fitted with triple interceptor trap and water management structures</p> <p>Surface drainage and other water management controls, directing to an interceptor trap, in place and effective.</p> <p>MSDS sheets for all chemicals used or stored on site maintained in the site office</p> <p>Chemical storage in accordance with the guidelines, MSDS sheets and relevant standards.</p>	Unlikely	Moderate	Medium	Integrity of fuel and chemical storages	Monthly site inspections	Pollution controls and surface drainage effective and maintained.				YES
Fuel, Lubricants and other Hazardous Materials	37	Spills / damage to other chemical (eg flocculant) stores resulting in impacts on the environment	Yes	Yes	Yes	Surface waters Groundwater Environment	Melbourne Water asset DR2504 Groundwater will be exposed within the excavation area Adjacent land uses and immediate neighbours	Hydrocarbon and/or chemical release to environment	Proximity to site	Possible	Moderate	Medium	<p>Hydrocarbon storage in accordance with AS 1940 (The Storage and Handling of Flammable and Combustible Liquids) and the Dangerous Goods (Storage and Handling) Regulations 2002</p> <p>A contaminants spill kit available at all times when any minor servicing and/or simple maintenance tasks are undertaken on site.</p> <p>Major servicing / repairs conducted at workshop in appropriately bunded area.</p> <p>Any areas where refuelling / minor servicing activities or flocculant use are being undertaken are drained to ensure no water leaves the site without first going through an interceptor trap</p> <p>MSDS sheets readily available for all dust suppressants, flocculants, neutralising agents, herbicides, pesticides, copper sulphate and any other chemicals used or stored on site.</p> <p>All chemicals stored in accordance with the EPA Liquid Storage and Handling Guidelines and relevant Australian Standard.</p>	<p>Storage in accordance with the standards.</p> <p>Spill kits available.</p> <p>Workshop fitted with triple interceptor trap and water management structures</p> <p>Surface drainage and other water management controls, directing to an interceptor trap, in place and effective.</p> <p>MSDS sheets for all chemicals used or stored on site maintained in the site office</p> <p>Chemical storage in accordance with the guidelines, MSDS sheets and relevant standards.</p>	Unlikely	Moderate	Medium	Integrity of fuel and chemical storages	Monthly site inspections	Pollution controls and surface drainage effective and maintained.				YES
Pests Weeds and Animals	38	Allowing weeds to spread from the site to neighbouring properties	Yes	Yes	Yes	Environment Adjoining / neighbouring properties	WA and surrounding area Immediate adjoining land users	Weeds/pest species introduced or allowed to spread	Proximity to site	Possible	Moderate	Medium	<p>Eradicate or manage any declared noxious weeds or established pest animals, including habitats, present on the Work Authority area.</p> <p>Identify pest species habitats within the work authority boundary and remove refuge areas (burrows, hollow logs) where practicable and consistent with native vegetation protection requirements</p> <p>Disinfect equipment moved from areas known or suspected to contain Phytophthora cinnamomi.</p> <p>Limit vegetation clearing and surface disturbance activities to the minimum required operationally.</p> <p>Engage appropriately licenced personnel to conduct any required herbicide or pesticide application to control weeds and/or pest animals.</p>	<p>Infestations of declared noxious weeds and established pest animals are eradicated or controlled.</p> <p>Any herbicide use will be in accordance with manufacturer's recommendations, including the most appropriate time to ensure effective control.</p> <p>Pest animal habitats are removed or destroyed</p> <p>Hygiene procedures are in place and followed in areas with known or suspected Phytophthora cinnamomi presence.</p> <p>In accordance with Work Plan and Site Layout Plan</p> <p>Only licenced personnel are permitted to apply herbicides or pesticides.</p>	Unlikely	Moderate	Medium					YES		
Pests, Weeds and Animals	39	Harbouring pest animals	Yes	Yes	Yes	Environment Adjoining / neighbouring properties	WA and surrounding area Immediate adjoining land users	Weeds/pest species introduced or allowed to spread	Proximity to site	Possible	Moderate	Medium	<p>Eradicate or manage any declared noxious weeds or established pest animals, including habitats, present on the Work Authority area.</p> <p>Identify pest species habitats within the work authority boundary and remove refuge areas (burrows, hollow logs) where practicable and consistent with native vegetation protection requirements</p> <p>Disinfect equipment moved from areas known or suspected to contain Phytophthora cinnamomi.</p> <p>Limit vegetation clearing and surface disturbance activities to the minimum required operationally.</p> <p>Engage appropriately licenced personnel to conduct any required herbicide or pesticide application to control weeds and/or pest animals.</p>	<p>Infestations of declared noxious weeds and established pest animals are eradicated or controlled.</p> <p>Any herbicide use will be in accordance with manufacturer's recommendations, including the most appropriate time to ensure effective control.</p> <p>Pest animal habitats are removed or destroyed</p> <p>Hygiene procedures are in place and followed in areas with known or suspected Phytophthora cinnamomi presence.</p> <p>In accordance with Work Plan and Site Layout Plan</p> <p>Only licenced personnel are permitted to apply herbicides or pesticides.</p>	Unlikely	Moderate	Medium	Site flora and fauna for weeds and pests.	6 Monthly site inspections (Spring & Autumn)				YES	
Pests, Weeds and Animals	40	Unsanitised plant / equipment introducing weeds / diseases	Yes	Yes	Yes	Environment Adjoining / neighbouring properties	WA and surrounding area Immediate adjoining land users	Weeds/pest species introduced or allowed to spread	Proximity to site	Possible	Moderate	Medium	<p>Eradicate or manage any declared noxious weeds or established pest animals, including habitats, present on the Work Authority area.</p> <p>Identify pest species habitats within the work authority boundary and remove refuge areas (burrows, hollow logs) where practicable and consistent with native vegetation protection requirements</p> <p>Disinfect equipment moved from areas known or suspected to contain Phytophthora cinnamomi.</p> <p>Limit vegetation clearing and surface disturbance activities to the minimum required operationally.</p> <p>Engage appropriately licenced personnel to conduct any required herbicide or pesticide application to control weeds and/or pest animals.</p>	<p>Infestations of declared noxious weeds and established pest animals are eradicated or controlled.</p> <p>Any herbicide use will be in accordance with manufacturer's recommendations, including the most appropriate time to ensure effective control.</p> <p>Pest animal habitats are removed or destroyed</p> <p>Hygiene procedures are in place and followed in areas with known or suspected Phytophthora cinnamomi presence.</p> <p>In accordance with Work Plan and Site Layout Plan</p> <p>Only licenced personnel are permitted to apply herbicides or pesticides.</p>	Unlikely	Moderate	Medium							YES
Pests, Weeds and Animals	41	Pit lake water becoming affected by blue-green algal blooms	No	Yes	Yes	Surface water / pit lake	Onsite pit	Potential to be impacted by algal blooms	Hydrogeological assessment	Unlikely	Minor	Low	<p>Pit water body monitored for blue-green algal blooms and dosed with copper sulphate, if necessary</p> <p>Engage appropriately licenced personnel to conduct any required copper sulphate application for blue-green algae control.</p>	<p>Any blue-green algal blooms detected and treated, in accordance with relevant guidance, to ensure that final rehabilitated pit lake remains free of blue-green algae.</p> <p>Only licenced personnel are permitted to apply copper sulphate (for any necessary blue-green algae control).</p>	Rare	Insignificant	Low	Presence of blue-green algal blooms within pit water body	Annual inspection (Summer) for blue-green algal blooms within pit water body, in accordance with Groundwater Management Plan.				YES	

Quarrying or Rehabilitation Hazard	Risk No.	Risk Event	Phase			Sensitive Receptors				Inherent Risk Assessment			Control Measures	Performance Standards	Residual Risk Assessment			Monitoring and Ongoing Management		Detailed Risk Treatment Plan attached?	
			Cons ^{100m}	Oper ^{100m}	Rehab ^{100m}	Details of sensitive receptor	Location and proximity to site	How hazard may harm receptor	Evidence to support assessment	Likelihood	Consequence	Risk Rating			Likelihood	Consequence	Risk Rating	Aspect to be monitored	Details of monitoring and ongoing managmnt		
Rubbish / General Waste	42	Uncontrolled handling of domestic rubbish and general waste resulting in pollution of waterway and/or adjacent land	Yes	Yes	Yes	Surface water Adjacent land uses	Melbourne Water asset DR2504 Adjacent land and immediate neighbours	Potential for pollution to impact the adjacent waterway and/or adjacent land uses	Proximity to site	Possible	Minor	Medium	Protect waste storage areas from rainfall and stormwater and locate away from areas of protected habitat Redundant / discarded oil, grease rags etc stored in sealed drums until removed No on-site disposal (or burning) of domestic rubbish and/or general wastes generated from site activities. Use of off-site services / facilities authorised to receive the generated wastes, for recycling or disposal.	Covered waste storage areas and/or bins. "Full" waste oil / grease etc drums will not be stockpiled on site. Drums removed by contractors authorised to receive the waste. No domestic rubbish or wastes disposed on-site. Redundant / damaged/ discarded tyres and conveyor belting will be removed by the supplier as required.	Unlikely	Minor	Low	Amount of waste stored on site	Quantities, types and location of wastes stored on site as part of monthly site inspection and review	YES	
Rubbish / General Waste	43	Loss of amenity through the poor handling of redundant plant and equipment	Yes	Yes	Yes	Adjacent land uses	Melbourne Water asset DR2504 Adjacent land and immediate neighbours	Potential for amenity loss to impact the adjacent land uses	Proximity to site	Possible	Minor	Medium	Redundant Tyres / conveyor belting Limit the volume and permitted timeframe for wastes to be stored onsite. Provide covered bins for temporary on-site storage of domestic rubbish and/or general wastes. Toilet/Amenities fitted with chemical system or council approved septic system. Redundant plant and equipment located where it cannot be seen from outside the site.	Waste materials not held on-site for more than 6 months. Sealed bins provided. Septic systems maintained as required and emptied by licensed contractor as required. Redundant plant & equipment not visible from public roads and removed from site if unattended for greater than 12 months.	Unlikely	Minor	Low	Disposal of wastes to sites authorised to receive that waste	Register of contractors with appropriate authorisation	YES	
Fire	44	Uncontrolled fire could either enter or leave the site causing injury or damage	Yes	Yes	Yes	Biodiversity Public safety Private property Infrastructure	Adjacent Properties Site visitors and neighbouring residences Bass Gas Plant	Damage/destruction to surrounding land and amenity Serious injury / death Damage/destruction to infrastructure or pastures	Proximity to site Historical exposure	Possible	Critical	Very High	All vehicles well maintained and fitted with spark arrestors and fire extinguishers No "hot works" undertaken on days of Total Fire Ban All vehicles well maintained and fitted with spark arrestors and fire extinguishers No "hot works" undertaken on days of Total Fire Ban Refuelling and servicing to be conducted off-site or in cleared hard stand areas within the extraction area.	Vehicles suitably equipped with fire extinguishers / knapsack spray packs as appropriate. No ignition sources (welding, oxy cutting) on Total Fire Ban Days All refuelling and vehicle servicing in accordance with procedures	Unlikely	Critical	High	Site fire preparedness	Annual inspections will include an assessment of the site's preparedness for fire and be recorded in the Manager's Report Book	YES	
Fire	45	Plant / machine / hot works igniting a wildfire	Yes	Yes	Yes	Biodiversity Public safety Private property Infrastructure	Adjacent Properties Site visitors and neighbouring residences Bass Gas Plant	Damage/destruction to surrounding land and amenity Serious injury / death Damage/destruction to infrastructure or pastures	Proximity to site	Possible	Critical	Very High	Monitor VicEmergency App / website, or similar, on days of extreme or catastrophic fire danger rating, or total fire ban days. Liaising with CFA in times of extreme or catastrophic fire danger rating. Fire Response and Readiness Plan. Flammable and combustible wastes are removed from the site as soon as practicable	Record of engagement with agencies Plan in place, documented and actioned No flammable waste is stockpiled onsite	Unlikely	Critical	High	Weather/fire warnings Total Fire Ban days	Liaising with CFA in times of extreme or catastrophic fire danger rating. Quarry Manager and/or Site Supervisor monitors Radio / CFA warnings (via VicEmergency app / website, or similar)	YES	
Soil Biological Activity	46	Unsuccessful rehabilitation due to poor soil biological activity	Yes	Yes	Yes	On-site soils stockpiled for rehabilitation	On site soil stockpiles	Soil may become infertile	DELWP recommendation	Likely	Minor	Medium	No soil stripping/removal when it is very dry. Soil stockpiles height. Stabilise soil and overburden stockpiles (e.g. seeded / roughened / mulched) if they will not be disturbed for an extended period. Soil layers, including any surface organic matter and any woody debris segregated and stockpiled separately Imported soil checked/verified (via Imported Materials Management Plan) for pathogens and any disease.	Stockpiles ≤ 2 m height. Soil and overburden stockpiles are stabilised within 6 months if not used in progressive rehabilitation. Topsoil and woody debris stockpile separately Imported soils verified as pathogen and disease free	Unlikely	Minor	Low	Maintenance of site soil stockpiles	6 Monthly site inspections will be conducted and will include topsoil stockpiles. Inspections, and any required monitoring and remedial actions documented in site record book.	YES	
Vehicle Sediment Transport	47	Dust, mud or sand carried onto public roads	Yes	Yes	Yes	Public safety Public Roads	South Gippsland Highway Adjacent to the WA and the point of access and egress from the site.	Dust, mud or sand deposited on road	Proximity to site	Likely	Minor	Medium	Sealed access road. Water cart used on access road. Internal traffic management (speed, no-go areas, etc) Wheel wash. Water cart used on access road. Road truck loads properly covered / secured before leaving site and/or not over-filled, to prevent spillage. Management of sediment transport to public roads consistent with EPA guidance.	Sales vehicles use sealed road access and egress. Employ water cart on high temperature / windy days, or in response to complaints. Driver instruction and training. All departing sales trucks use wheel wash. All departing sales trucks cleared of loose dust / sediment that may be deposited on roads before departing the site. Sediment transport offsite consistent with EPA guidance.	Possible	Minor	Medium	Dust, mud and sand deposition on surrounding roads.	Daily observation Community complaints / concerns re spillage or dust.	Complaints management/Community Engagement Plan	YES

List Personnel accountable for the implementation, management and review of the Risk Management Plan

Personnel	Roles and Responsibilities
Work Authority Holder	Identification and allocation of resources
General Manager/Business owner	Identification and Distribution of resources, Co-ordination and Implementation of controls RTP
Quarry Manager/Site Supervisor	Co-ordination and Implementation of controls

ADVERTISED PLAN

Mineral Resources (Sustainable Development) Act
1990



BCA CONSULTING
EARTH RESOURCES

Tenement Number: WA7451

Plan Number: PLN-001536

Work Plan Statutorily Endorsed

Signed: 

Delegate of the Department of Planning

Date: 26/05/2023

Extractive Industry Work Authority

Risk Management Plan

WA007541 Lang Lang Sand Resources Pty Ltd

RRAM Designation:- PLN-001536



Lang Lang Sand Resources Pty Ltd
GM Strategy & Development:- Kelvin Sargent

Site Address: 5575 Sth Gippsland Highway, Lang Lang

Office: Suite 2 Level 1, 20 English Street
Essendon Fields Vic 3041
Ph (03) 9408 0666 Mob 0402 534 467
kelvins@acm.com.au
www.acm.com.au

Project No. A25-005
February 2023

**ADVERTISED
PLAN**

Table of Contents

1. Risk Management Plan.....	3
1.1..... Summary	3
1.2..... Description of Risk Assessment Process.....	3
1.3..... Hazards Considered.....	5
1.4..... Accountable Personnel.....	6
2. Risk Treatment Plans	7
2.1..... Altered Visual Amenity.....	8
2.2..... Noise	11
2.3..... Dust.....	14
2.4..... Surface Water Flows	18
2.5..... Ground Disturbance	21
2.6..... Ground Instability	27
2.7..... Erosion and Sedimentation	31
2.8..... Process Water and Storages	35
2.9..... Slimes Storage.....	38
2.10... Imported Materials.....	42
2.11... Unauthorised Site Access.....	45
2.12... Fuel, Lubricants and other Hazardous Materials	48
2.13... Pests, Weeds and Disease	51
2.14... Rubbish / General Waste.....	54
2.15... Fire	56
2.16... Soil Biological Activity.....	59
2.17... Vehicle Sediment Transport.....	61

ADVERTISED PLAN

Revision History

Document Date	Version	Description	Issued By	Reviewed By	Approved By
May 2021	V1	1 st preliminary draft of RMP	BCA Consulting	K Sargent	
Jun 2021	V2	2 nd preliminary draft of RMP	BCA Consulting	K Sargent	
Jan 2022	V3	3 rd preliminary draft of RMP	BCA Consulting	K Sargent	
Mar 2022	V4	1 st draft submitted to ERR	BCA Consulting	K Sargent	K Sargent
Aug 2022	V5	2 nd draft submitted to ERR	BCA Consulting	K Sargent	K Sargent
Feb 2023	V6	3 rd draft submitted to ERR	BCA Consulting	K Sargent	K Sargent

1. Risk Management Plan

ADVERTISED PLAN

1.1. Summary

This Risk Management Plan (RMP) is submitted with the Work Plan (PLN-001536) and relates to WA007541, to be known as the Lang Lang Quarry. This Risk Management Plan supports the Work Plan for the Work Authority application for this greenfield sand extraction site. The Work Plan Description fully describes the extraction, processing and rehabilitation methodology and ancillary processes.

The operation is located at 5575 South Gippsland Highway, Lang Lang 3984 VIC, approximately 5km south-east of Lang Lang township and 7km west of Nyora, see Figure 1 Regional Plan.

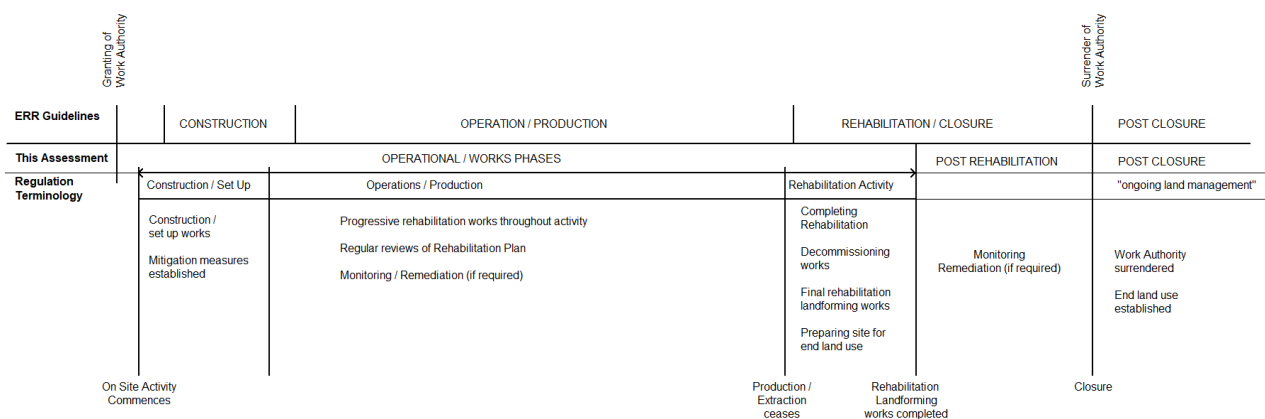
A full description of the works proposed at the site can be found in Work Plan Description document.

1.2. Description of Risk Assessment Process

The Risk Management Plan, including the Risk Register for this site has been developed by BCA Consulting in conjunction with the key personal of Aurora Construction Materials (ACM), and its subsidiary Lang Lang Sand Resources Pty Ltd, including GM Strategy & Development, Kelvin Sargent.

The methodology adopted in this document is to consider the hazards that may be present, and the risks they pose, in association with the extractive industry. The Risk Management Plan focusses on the hazards present during its Operational / Works phases (i.e. during major works, including construction, production and rehabilitation activities). As distinct from the Post Rehabilitation phase, as it relates to any particular part of the site, i.e. after completion of rehabilitation activities (apart from any necessary follow-up monitoring and maintenance), or after closure of the site (Post Closure), which are a focus of the Rehabilitation Plan.

The hazard identification and risk assessment process adopted for the site are in the context of the quarry life as represented by the schematic below, showing the indicative sequence of phases as it relates to any particular part of the site. Note: the term “closure” is not a term commonly used in the extractive industries, and not used in the applicable Regulations, but is used here to align with ERR guidelines and defined as the point in time, subsequent to completion of all rehabilitation works, when the Work Authority can be surrendered and the rehabilitation bond returned.



The discussion of hazards, and the assessment of the risks they pose, adopts extractive industry accepted norms that do not always “neatly” fit the requirements of the various Earth Resources Regulation guidelines, but aim instead to satisfy the Regulations. With the primary aims of satisfying the Regulations and being a functional Work Plan for the quarry operator.

As a starting point for developing this Risk Management Plan, a table of standard quarrying and rehabilitation hazards was presented to the ACM then reviewed and discussed. This review considered standard control measures and their relevance / effectiveness in meeting applicable standards and acceptance criteria, including whether they addressed the EPA’s General Environmental Duty (further detail below). Where it was considered necessary, extra proportionate control measures were implemented.

These discussions focused on:

- Identifying the hazards that may arise from all site-based activities throughout the Operational / Works phases that might result in risk events.
- Identifying sensitive receptors within the vicinity of the site, in relation to the environment, any member of the public or to land, property or infrastructure.
- Identifying individual risk events that the identified hazards may pose to the sensitive receptors.
- Reviewing the applicability of standard industry control measures.
- Reviewing the proposed control measures, including any site-specific control measures that might be required.
- The implementation of the necessary control measures and the resultant residual risk of individual risk events.

Additionally, as a basis for the Rehabilitation Plan, the discussion of hazards considered:

- Identification of any hazards that may be associated with the rehabilitated land that could potentially pose long-term risks to the environment, members of the public, or to land, property or infrastructure after closure of the site and surrender of the Work Authority (i.e. post closure).
- A review on any potential long-term risks posed by the rehabilitated land to identify those risks that may require monitoring, maintenance, treatment or other ongoing land management activities after closure. If any are identified, consideration of how these could be eliminated or managed.

The risk assessments presented in this Work Plan are qualitative risk assessments as the nature of the industry and inherent variability means that there is simply not enough information available to undertake quantitative risk assessments. The risk assessments utilise the risk matrix adopted by Earth Resource Regulation (ERR), as presented below. A full description of the likelihood and consequence ratings is contained in the ERR document *Preparation of Work Plans and Work Plan Variations, Guideline for Extractive Industry Projects*, December 2020.

Likelihood	Almost Certain	Medium	High	Very High	Very High	Very High
	Likely	Medium	Medium	High	Very High	Very High
	Possible	Low	Medium	Medium	High	Very High
	Unlikely	Low	Low	Medium	High	High
	Rare	Low	Low	Medium	Medium	High
		Insignificant	Minor	Moderate	Major	Critical
Consequence						

ADVERTISED
PLAN

NOTE: As at December 2020, Earth Resource Regulation have directed that the consequence ratings for risks associated with Fire must be critical.

Environment Protection Legislation

As of July 2021, the *Environment Protection Act 2017*, as amended by the *Environment Protection Amendment Act 2018*, identifies that all businesses can cause pollution and waste and that the combined effect can have an impact on human health and the environment. The General Environmental Duty (GED) is at the centre of the amended *Environment Protection Act 2017* and focuses on prevention of

environmental impact rather than managing the impacts after they have occurred and is based on a person or business's duty to protect human health and the environment from pollution and waste.

Industry-specific guidance on the general requirements of this legislation is provided in EPA Publication 1823.1, *Mining and Quarrying – Guide to preventing harm to People and the environment*. The GED is defined within the *Environment Protection Act 2017* and it is stipulated that “a person who is engaging in an activity that may give rise to risks of harm to human health or the environment from pollution or waste must minimise those risks, so far as reasonably practicable”.

Determining what is deemed ‘reasonably practicable’ is explained within EPA Publication 1856, *Reasonably Practicable*, and relates to the implementation of control measures that are proportionate to the potential risk. This is based on the potential for harm to occur, the potential impacts on the environment, and considers what control measures are available to reduce the risk, as well as their associated costs.

It is deemed the responsibility of the operator, the ‘duty holder’, to understand and assess the risks which their operations may pose on human health or the environment, and once understood, implement proportionate control measures to mitigate or minimise the risk of harm.

The definition of harm within the *Environment Protection Act 2017* introduces the concept of what is deemed ‘unreasonable’, with numerous guidelines and protocols offering definitions or examples of what is considered unreasonable.

The risk assessments and risk management documented within the individual Risk Treatment Plans that follow, for hazards that are also subject to EPA regulation, are developed in consideration of EPA guidance and compliance standards.

Risk Register

The Risk Register provides an overview of the assessment and management of the risks associated with each identified hazard during the quarry's Operational / Works Phases and is attached separately.

1.3. Hazards Considered

In developing the Risk Register and Risk Management Plan for this site, the following hazards typically associated with quarrying and rehabilitation activities (both progressive rehabilitation and final rehabilitation works), listed in the table below, were discussed and considered against the identified sensitive receptors. Where such hazards are identified in relation to the proposal, individual Risk Treatment Plans are provided below with a detailed assessment of risks posed to sensitive receptors by the hazards, along with detailed risk management. If the hazard is not present at the site, it is marked as such in the table below.

While the identified hazards may be present, the level of risk posed by these hazards to sensitive receptors and the level of risk management that is appropriate must be determined. The application and implementation of the documented control measures presented in the Risk Treatment Plans below aim to reduce as far as practicable the likelihood, and where applicable, the consequence, of the identified hazards where they pose a risk to the identified sensitive receptors. Even though this site is a greenfields site, ACM operate numerous construction materials and concrete supply sites, and have detailed knowledge of the risk management required to be in place for the operation.

The control measures to be implemented for the Operations / Production phase are considered suitable for any new works or “Construction” so are not considered separately. The Rehabilitation Activities column in the table shows the hazards associated with undertaking the rehabilitation works, however the associated risks are often being managed along with the Operations / Production risks as the activities are occurring at the same time for most of the quarry life, as part of progressive rehabilitation. The risk assessments for these hazards have identified that the control measures to mitigate the risks from Operations / Production and Rehabilitation Activities are essentially identical in most cases, with the only variable being timing.

**ADVERTISED
PLAN**

HAZARD	COMMENT	OPERATIONAL / WORKS PHASES		POST CLOSURE
		PRODUCTION & CONSTRUCTION	REHABILITATION ACTIVITIES	
Altered visual amenity		YES	YES	NO
Noise		YES	YES	NO
Dust		YES	YES	NO
Surface water flows		YES	YES	YES
Ground disturbance		YES	YES	NO
Ground instability		YES	YES	YES
Blasting	NOT PRESENT	NO	NO	NO
Erosion and sedimentation		YES	YES	YES
Process water and storages		YES	YES	YES
Slimes storage		YES	YES	YES
Imported materials		YES	YES	YES
Unauthorised site access		YES	YES	NO
Fuel, lubricants, other hazardous materials		YES	YES	NO
Weeds, pests and diseases		YES	YES	NO
Rubbish / general waste		YES	YES	NO
Fire		YES	YES	NO
Soil biological activity		YES	YES	NO
Vehicle sediment transport		YES	YES	NO

To provide a complete overview of the applicable hazards, the table also identifies hazards potentially associated with the rehabilitated land (post closure), where they relate to the extractive industry use, that may pose long-term risks to the environment, members of the public, or to land, property or infrastructure. These post closure hazards are discussed in detail in the Rehabilitation Plan.

While the identified post closure hazards may be present, it needs to be determined whether such hazards would actually pose any risks that require ongoing management. As detailed in the Rehabilitation Plan, it is not anticipated that there will be any relevant risks posed by the rehabilitated land post closure in respect of the above hazards that would require monitoring, maintenance, treatment or any other ongoing land management activities.

Elimination of Risks: In determining the residual risk it is often the case that, with the application of effective control measures, the residual risk is LOW, which is the lowest risk rating in the December 2020 ERR risk matrix. In some instances, it might be argued that the residual risk is so low that it has effectively been eliminated, however quarry managers believe they need to be conscious of all quarrying and rehabilitation hazards (and their associated risks) that exist on the site, no matter how small the risk might be. As they must consider their obligations under all relevant legislation (i.e. OH&S, Heritage, etc.) and not just the *Mineral Resources (Sustainable Development) Act 1990* (MRSDA).

1.4. Accountable Personnel

The following table outlines the roles and responsibilities of the various personnel within the organisation for the successful implementation and management of the Risk Management Plan, and who are accountable for the identification and allocation of resources, as well as the implementation, management and review of this risk management plan.

Role	Responsibilities
Work Authority Holder	Identification and allocation of resources
General Manger / Business Owner	Identification and allocation of resources
Quarry Manager	Distribution of resources, co-ordination, implementation
Site Supervisor	Implementation

2. Risk Treatment Plans

Risk Treatment Plan abbreviations

The following abbreviations are used throughout the Risk Treatment Plans:

- RTP Risk Treatment Plan
- C Construction / Set-up phase of the operation
- O Operations / Production phase of the operation
- R Rehabilitation Activities phase of the operation
- ALL All phases of the operation

**ADVERTISED
PLAN**

2.1. Altered Visual Amenity

Scope

This risk treatment plan is to assess and manage the visual impacts to sensitive receptors during quarry operations (ie set up / construction, operations/production and rehabilitation activities).

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site	How hazard may harm or damage Sensitive Receptor	Evidence to support assessment
1.	Residences	Residences to the south and east	Potential to see infrastructure and site operations	Proximity to site
2.	Public Roads	Public roads including the South Gippsland Highway	Potential to see infrastructure and site operations	Proximity to site

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
1.	Plant and operations visible from residences	ALL	Likely	Minor	MEDIUM
2.	Plant and operations visible from roads	ALL	Likely	Minor	MEDIUM

Quarrying Considerations

The WA007541 site adjoins sparsely occupied, private agricultural land, as well as other extractive industries and the neighbouring Bass Gas plant to the north-east. The topography is generally flat with a gentle slope from east to west. Site activities could be visible from a residence to the east (approximately 170m from the Work Authority boundary), residences to the south (approximately 130m and 170m from the Work Authority boundary) and from the adjacent South Gippsland Highway.

The processing and stockpiling area is set back from the Highway and located behind an existing large, raised ('turkey nest') water dam, relative to the residences to the south. A 5m high screening bund will be established along the Work Authority boundary fronting the Highway, as well as along the eastern boundary opposite the neighbouring residence (see Figure 3, Site Layout Plan for profile). The screening bund, which will be constructed early with overburden generated from the initial extraction stages, and potentially also the excavation of the northern drainage diversion, will mitigate visual impacts as well as providing noise attenuation. This bund will be constructed in segments, with initial construction opposite the nearest residences to the south and to the east of the site, and stabilised before being vegetated with shrubs at the earliest opportunity.

Objectives

The key objectives of this risk treatment plan is to:

- Minimise the visibility of the site from nearby residences and public roads

Compliance standards

The compliance standards for this risk treatment plan is:

- Positive engagement and feedback from nearby residence.

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- No perceivable change to the local amenity when viewed from residences or public roads.

**ADVERTISED
PLAN**

Control measures to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented –if not implicit in the control)
1.	Construction and landscaping of screening bund and overburden mounds, with initial segments of screening bund constructed opposite the nearest residences.	Screening bund constructed as soon as practicable and landscaping maintained in neat and orderly condition
2.	Maintenance (and if necessary, re-planting) of existing or proposed vegetation screening.	Screening vegetation established and healthy
3.	Locating processing plant and stockpiles in accordance with design	Processing Plant & Stockpiling Area and Temporary Materials Storage and Handling Area located in accordance with Site Layout Plan and not visible from outside roads once screening bund is constructed
4.	Progressive rehabilitation (inclusive of earthworks and vegetation establishment) of terminal batters at the earliest opportunity	Maximum open area criteria maintained
5.	Planning of extraction sequence and bund establishment to minimise viewsheds	Site Layout Plan

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
1.	Plant and operations visible from residences	ALL	Unlikely	Minor	LOW
2.	Plant and operations visible from roads	ALL	Unlikely	Minor	LOW

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Vegetation and landscape maintenance	The maintenance of buffer plantings and vegetation on screening bund will be monitored by regular inspections. Additional and/or replanting will be done to remediate slow or failed vegetation growth.
2.	Screening bund and vegetation effectiveness	Routine inspections from outside the quarry boundary will be used to check buffer effectiveness.
3.	Amenity impact	Complaints and comments raised through community engagement will be handled through the normal engagement process.

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1	Vegetation and landscape maintenance Screening Vegetation Amenity Impact	Annual results of vegetation and landscape establishment monitoring, screening vegetation effectiveness and amenity impact (including photos as required) will be recorded by the quarry manager and reported to quarry management, to the community through community engagement activities and to Regulatory agencies as required.	To inform management of future works and any remedial actions. To allow quarry management to assess performance and undertake remedial actions where needed,

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1	Nil	

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	Risk Management Plan	Work Plan
2.	Site Layout Plan	Work Plan
3.	WA & WP Conditions	Site Office
4.	Planning Permit Conditions	Site Office

**ADVERTISED
PLAN**

ADVERTISED PLAN

2.2. Noise

Scope

This risk treatment plan is to assess and manage the noise impacts to sensitive receptors during quarry operations (ie set up / construction, operations/production and rehabilitation activities).

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site	How hazard may harm or damage Sensitive Receptor	Evidence to support assessment
1.	Residences	Residences within 1000m of extraction area	Potential noise impacts from site operations	Proximity to site
2.	Public Roads	Public roads including the South Gippsland Highway	Potential noise impacts from site operations	Proximity to site

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
3.	Excessive noise at any sensitive receptors from vehicle movements (Road trucks, loaders, haul truck)	ALL	Likely	Moderate	HIGH
4.	Excessive noise at any sensitive receptors from Excavating Equipment (Dozer, loader, excavator)	ALL	Likely	Moderate	HIGH
5.	Excessive noise at any sensitive receptors from processing plant (inc fix and mobile plant, screens, stackers)	ALL	Likely	Moderate	HIGH

Quarrying Considerations

The WA007541 site adjoins sparsely occupied, private agricultural land, as well as other extractive industries and the Bass Gas plant. The South Gippsland Highway is located along the southern Work Authority boundary. The topography is generally flat with a gentle slope from east to west.

Five residences are located within 1000m of the Work Authority boundary, the closest being a residence 250m to the east of the extraction area, with three residences south of the South Gippsland Highway, two at approximately 270m from the extraction boundary and one 580m from the extraction boundary (or 410m from the site entrance). There is a potential for site generated noise emissions to impact on these residences.

A noise impact assessment has been conducted by the consulting firm Enfield Acoustics and is attached. The assessment has concluded that, subject to the construction of the screening bund as designed and operations within the proposed operating hours, compliance with EPA noise limits can be expected and the site activities will not result in adverse noise impacts. The screening bund will be constructed in segments with the initial construction opposite the nearest residences. Additionally, this assessment recommends that activities occurring closer to residences during the period 6am to 7am (within the EPA 'night period') be limited to less noisy activities. The assessment also concludes that with progressive construction of the screening bund and transition from initial surface extraction the noise impacts will reduce over time.

The noise impact assessment demonstrates that the proposed activity can comply with EPA noise limits, and with the proposed control measures, without the need for formal monitoring, as documented below, the risks associated with noise from the operation will be minimised as far as reasonably practicable. Therefore, compliance with the EPA General Environmental Duty can be expected, as also stated in the noise impact assessment.

Objectives

The key objectives of this risk treatment plan are to:

- Minimise offsite noise impacts on nearby sensitive receptors, including members of the public, residential land uses and other sensitive land uses and environments
- Reduce noise generation from onsite activities and material handling to the extent practicable
- Eliminate or reduce noise related complaints from residences
- Noise experienced by nearby sensitive receptors is within EPA noise limits

Compliance standards

The compliance standards for this risk treatment plan are:

- Environment Protection Act 2017, or as amended (ie General Environmental Duty)
- EPA Publication 1823.1, June 2021: Mining and Quarrying – Guide to preventing harm to people and the environment
- EPA Publication 1254.2, May 2021: Noise Control Guidelines
- EPA Publication 1826.4, May 2021: Noise Limit and Assessment Protocol for the Control of Noise from Commercial, Industrial and Trade Premises and Entertainment Venues.

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- No noise complaints are received
- Compliance with EPA noise limits at sensitive receptors.

ADVERTISED
PLAN

Control measures to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented –if not implicit in the control)
1.	Compliance to approved operating hours	Hours in the Work Plan: Extraction, Processing and Transport (sales) 6am to 6pm Monday to Saturday No work on Sundays and Public Holidays
2.	No noisy activities (earthworks, truck loading, haulage) permitted onsite within 250m of residences from 6am to 7am	Restrictions for onsite noisy activities observed during EPA 'night period' No exceedances of noise limits at residences during EPA 'night period'
3.	Establishment of screening bund, with initial segments constructed opposite the nearest residences	Compliance to Site Layout Plan
4.	Mobile plant fitted with effective mufflers and other appropriate noise abatement devices	Mufflers and noise abatement devices fitted and maintained as per manufacture specification
5.	Extraction equipment orientation and position to take advantage of bunding, vegetation shielding and topography	Compliance to Site Layout Plan
6.	Equipment maintenance regime in accordance with manufacturer specifications.	All plant and equipment maintained as per manufacture specification
7.	Maintain access roads and site tracks in good condition	Roads and access tracks graded as required to minimise corrugations and potholes
8.	Traffic management around product stockpiles and travel routes designed to minimise reversing	Traffic management and site layout.
9.	Engineered noise abatement of grizzlies, conveyors, vibrating screens, stacking conveyors, pumps	Noise abatement devices fitted and maintained as per manufacture specification
10.	Turning off plant and equipment when not in use for extended periods	Plant and equipment not left running when not in use where that noise may be impacting nearby sensitive receptors, particularly within 250m of residences

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented –if not implicit in the control)
11.	Broadband reversing alarms (squawkers) fitted to appropriate mobile plant	New generation broadband reverse alarm fitted and operational to all mobile equipment

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
3.	Excessive noise at any sensitive receptors from vehicle movements (Road trucks, loaders, haul truck)	ALL	Possible	Moderate	MEDIUM
4.	Excessive noise at any sensitive receptors from Excavating Equipment (Dozer, loader, excavator)	ALL	Possible	Moderate	MEDIUM
5.	Excessive noise at any sensitive receptors from processing plant (inc mobile plant, screens, stackers)	ALL	Possible	Moderate	MEDIUM

Monitoring

#	Aspect to be monitored	Details of monitoring
1	Noise at sensitive receptors	<p>No formal noise monitoring is proposed, with observations made during inspections and engagement activities. Noise monitoring may take place in direct response to a noise complaint.</p> <p>Complaints, as well as other community engagement activities, and any resulting actions will be documented. Where formal monitoring is directed by EPA or ERR, monitoring locations, methods and frequencies will be in accordance with the regulatory agencies' requirements.</p> <p>The adequacy of control measures against the GED will be assessed through general observation as part of routine site inspections and feedback through community engagement</p>

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1	Incidents of noise complaints	Internally/ On Event	Use data to confirm presence of any noise issues and identify and manage key noise generating activities and remedial actions
2	Reportable Event under MRSDA	ERR / On Event	Used to meet Work Authority holder's reporting obligations under the MRSDA

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1	CMPA Noise Management Guidelines	CMPA Code PUB0037

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WP & Risk Management Plan	Work Plan
2.	Site Layout Plan	Work Plan
3.	WA and WP conditions	Site office
4.	Planning permit conditions	Site office

**ADVERTISED
PLAN**

ADVERTISED PLAN

2.3. Dust

Scope

This risk treatment plan is to assess and manage the dust impacts to sensitive receptors during quarry operations (ie set up / construction, operations/production and rehabilitation activities).

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site	How hazard may harm or damage Sensitive Receptor	Evidence to support assessment
1.	Residences	Residences within 1000m of extraction area	Potential air quality impacts from site operations	Proximity to site
2.	Public Roads	Public roads including the South Gippsland Highway	Potential air quality impacts from site operations	Proximity to site

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
6.	Excessive dust from vehicle movements on all access roads, site roads & hardstands	ALL	Possible	Minor	MEDIUM
7.	Excessive dust from processing plant and equipment within the WA	C,O	Possible	Minor	MEDIUM
8.	Excessive dust from extraction activities	C,O	Possible	Minor	MEDIUM
9.	Excessive dust from soil and overburden dumps (construction and maintenance)	ALL	Possible	Moderate	MEDIUM
10.	Excessive dust from stockpiles leaving the WA boundary	O	Possible	Moderate	MEDIUM
11.	Excessive dust when stripping top soil leaving the WA boundary	C,O	Possible	Moderate	MEDIUM
12.	Excessive dust during rehabilitation leaving the WA boundary	O,R	Possible	Moderate	MEDIUM

Quarrying Considerations

The in-situ resource is an alluvial deposit, consisting of unconsolidated sand, silt and minor peat. The high groundwater level means that that material is either saturated or has a high inherent moisture content which will aid in reducing dust generated during stripping and extraction operations.

Five residences are located within 1000m of the Work Authority boundary, the closest being a residence 250m to the east of the extraction area, with three residences south of the South Gippsland Highway, two at approximately 270m from the extraction boundary and one 580m from the extraction boundary. There is a potential for site generated air emissions to impact on these residences.

An Air Quality Impact Assessment has been undertaken by consulting firm WSP and is attached. The modelling was undertaken with a number of conservative assumptions (i.e. worst case conditions with no control measures, apart from staged construction of the screening bund), and demonstrates that impacts at the nearest sensitive receptors due to dust coming from the proposed quarry, for nuisance dust, PM₁₀ and PM_{2.5}, will be low in comparison to the background levels of dust. While the modelling shows some cumulative exceedances of the EPA assessment criteria, the background dust makes up 90-96% of this modelled impact. It is noted in the assessment that there is no background data available for this region so data from Traralgon has been used, but this is likely to be over-estimating the background dust levels.

Soil and overburden stripping will be avoided on hot, windy days, or as much as possible after extended dry periods where the inherent moisture content is reduced. There will be ample water (supply and storage) on site to manage dust through traditional methods, i.e. water carts and water sprays, sprinkler systems, etc. In addition, the main site access will be sealed and a wheel-wash installed for sales trucks.

The Air Quality Impact Assessment demonstrates that the proposed activity can comply with EPA air pollution limits, and with the proposed control measures and monitoring, as documented below, the risks

associated with dust generated on site will be minimised as far as reasonably practicable. Therefore, compliance with the EPA General Environmental Duty can be expected.

Respirable Crystalline Silica Risk

This operation does not pose a risk to the public from any fugitive respirable crystalline silica dust leaving the site, as the sand resource is not being processed in any way that could produce respirable crystalline silica. While the sand grains making up the resource are predominantly crystalline silica, so the quarrying meets the definition of a 'crystalline silica process' under the Occupational Health and Safety Regulations 2017 (OH&S Regulations), the excavation and processing methods utilised do not involve the sand grains being 'mechanically processed' (cutting, crushing, grinding or blasting). Rather the processing involves washing the sand. Consequently, the operation does not meet the definition of 'high risk crystalline silica work' under the OH&S Regulations, because the processing of the sand does not pose an appreciable risk to the health of onsite workers from respirable crystalline silica dust. Therefore, the risk posed to the public by fugitive emissions of respirable crystalline silica dust produced by the operation, at any level, is negligible.

Additionally, the modelling in the attached Air Quality Impact Assessment demonstrates that it is virtually impossible for respirable crystalline silica dust from this operation to impact on nearby sensitive receptors. The assessment shows that even if the implausibly conservative assumption were made that 100% of the PM_{2.5} fraction of the dust generated was respirable crystalline silica, then the modelling indicates that the fugitive respirable crystalline silica dust at the sensitive receptors would still be, at most, only 6.3% of the 3 µg/m³ annual assessment criteria set by the EPA. Accurately quantifying the very low levels of any such fugitive respirable crystalline silica dust emissions at the sensitive receptors (as an annual average), if actually leaving the site, would be impracticable and unnecessary because the routine dust control measures to be implemented will ensure that any risk posed is negligible to none.

Objectives

The key objectives of this risk treatment plan are to:

- Minimise offsite dust impacts on all nearby sensitive receptors including members of the public, residential land uses, and other sensitive land uses or environments.
- Control dust at the source. Reduce or prevent dust generation from onsite activities and materials transport, to the extent practicable
- Minimise the impact to the local environment and amenity, to protect the beneficial uses of the air environment as defined EPA standards

Compliance standards

The compliance standards for this risk treatment plan are:

- Environment Protection Act 2017, or as amended (ie General Environmental Duty)
- EPA Environment Reference Standard 2021 (ERS) and National Environment Protection Measure (Ambient Air Quality) (NEPM AAQ)
- EPA Publication 1823.1, June 2021: Mining and Quarrying – Guide to preventing harm to people and the environment
- EPA Publication 1518, March 2013: Recommended Separation Distances for Industrial Residual Air Emissions
- EPA Publication 1961, February 2022: Guideline for Assessing and Minimising Air Pollution in Victoria
- EPA Publication 1894, September 2020: Managing Soil Disturbance – Guidance sheet
- EPA Publication 1895, September 2020: Managing Stockpiles – Guidance sheet
- EPA Publication 1897, Sept 2020: Managing Truck and Other Vehicle Movement – Guidance sheet

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- No nuisance dust related complaints
- Compliance with EPA dust standards at sensitive receptors

**ADVERTISED
PLAN**

Control measures to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented –if not implicit in the control)
1.	Minimise exposed / disturbed areas	Compliance to maximum disturbed area
2.	Water cart utilised on exposed areas, roads and hardstand areas	Water cart and ample supply of water available on forecast hot, dry days or during extended dry periods when inherent moisture content is reduced
3.	Sealing of access road and use of wheel wash for sales traffic	Installation and use
4.	Dry excavated material to be wetted in hot, dry, windy conditions or whenever dust generation requires	Quarry Manager's discretion based on visual observation or stakeholder engagement
5.	Minimise vehicle movements (restrict to designated areas) and limit vehicle speeds	Speed / Traffic management signs maintained at critical locations and on the main quarry access track
6.	Establishment of screening bund, with initial segments constructed opposite the nearest residences	Compliance to Site Layout Plan
7.	Vegetate and stabilise screening bunds, as soon as practicable, as well as topsoil / overburden stockpiles to be retained more than 6 months	Screening bunds and topsoil / overburden stockpiles vegetated within 6 months of construction. Vegetation maintained
8.	Establish initial pasture on upper terminal batters, as soon as practicable, and also interim batters left for more than 12 months between stages	Topsoiled and planted pasture on terminal batters awaiting rehabilitation within 3 months and interim batters between stages inactive for greater than 12 months. Pasture to be fully established within 12 months. Vegetation maintained
9.	Cessation of works during hot, dry or high wind conditions	Quarry Manager's discretion based on visual observation or stakeholder engagement
10.	Equipment maintenance regime in accordance with manufacturer specifications.	All plant and equipment maintained as per manufacture specification
11.	Continual visual monitoring by all staff for dust leaving the site, throughout operations, and notification to the Quarry Manager promptly for remedial action	No nuisance dust impacts to sensitive receptors
12.	Implement an air quality monitoring program for nuisance dust, PM10 and PM2.5, along with wind speed and wind direction	Data collected and utilised to inform and adapt, if necessary, the ongoing dust management, and to ensure that the EPA General Environmental Duty is met (subject to review as quarry stages develop)

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
6.	Excessive dust from vehicle movements on all access roads, site roads & hardstands	ALL	Unlikely	Minor	LOW
7.	Excessive dust from processing plant and equipment within the WA	C,O	Unlikely	Minor	LOW
8.	Excessive dust from extraction activities	C,O	Unlikely	Minor	LOW
9.	Excessive dust from soil and overburden dumps (construction and maintenance)	ALL	Unlikely	Moderate	MEDIUM
10.	Excessive dust from stockpiles leaving the WA boundary	O	Unlikely	Moderate	MEDIUM
11.	Excessive dust when stripping topsoil leaving the WA boundary	C,O	Unlikely	Moderate	MEDIUM
12.	Excessive dust during rehabilitation leaving the WA boundary	O,R	Unlikely	Moderate	MEDIUM

**ADVERTISED
PLAN**

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Ongoing visual monitoring of dust generated on site by all staff	Visual monitoring for dust leaving the site Hourly assessment of dust on hot, dry, windy days
2.	Air quality monitoring program: - dust deposition for nuisance dust (all stations) - continuous PM10 & PM2.5, plus wind speed & direction	Monitoring Locations (two sites): - initial locations shown on Figure 3, Site Layout Plan, with continuous monitoring station on eastern boundary - locations to be reviewed as quarry stages develop, but always adjacent to WA boundary toward potentially affected residences Monitoring Frequency: - monthly dust deposition samples - real-time data for PM10, PM2.5, wind speed & direction - frequency and need for continuous monitoring (to demonstrate GED is met) reviewed as quarry stages develop
3.	Complaints and observations/comments from sensitive receptors	Complaints and comments recorded

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Occurrences of dust leaving the site	Quarry Manager / On Event	Use data to confirm presence of any dust related issues and identify and manage key dust generating activities and remedial actions
2.	Results of air quality monitoring program	Quarry Manager / On Event, for real-time reporting of dust exceedances and significant changes in wind direction Monthly internal reporting for review of site dust management	Use data to confirm compliance with GED, or presence of any dust related issues along with identification and management of key dust generating activities and remedial actions
3.	Incidents of dust related complaints and comments	Quarry Manager / On Event	To identify dust related impacts to sensitive receptors and to any necessary targeted remedial actions to rectify the issue
4.	Reportable Event under MRSDA	ERR / On Event	Used to meet Work Authority holder's reporting obligations under the MRSDA

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	EPA guidance sheets (publications 1894, 1895, 1897)	https://www.epa.vic.gov.au/about-epa/publications
2.	CMPA Dust Management Guidelines	CMPA

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WP & Risk Management Plan	Work Plan
2.	Site Layout Plan	Work Plan
3.	WA and WP conditions	Site Office
4.	Planning permit conditions	Site Office

**ADVERTISED
PLAN**

ADVERTISED PLAN

2.4. Surface Water Flows

Scope

This risk treatment plan is to assess and manage the impacts of surface water flows (including storm events) into and through the site, or surface water flows diverted around the site, and any potential impacts on the environment or sensitive receptors during quarry operations (ie set up / construction, operations/production and rehabilitation activities).

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site	How hazard may harm or damage Sensitive Receptor	Evidence to support assessment
1.	Melbourne Water asset DR2504	Northern boundary	Potential detriment to beneficial users from turbid water discharge	Proximity to site
2.	Neighbouring Properties	Downstream landowners	Potential to be impacted by turbid water release	Proximity to site

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequences	Inherent Risk Rating
13.	Turbid (dirty) water leaving the site.	ALL	Possible	Moderate	MEDIUM
14.	Inundation from flooding	ALL	Possible	Major	HIGH

Quarrying Considerations

The site is located within the Co-Designed Catchment Program for the Westernport and Mornington Peninsula Region, under the Melbourne Water Healthy Waterways Strategy (Melbourne Water Corporation, 2018), although it is outside the 'Stormwater priority area'. Melbourne Water asset DR2504 flows along the northern boundary of the site and will be realigned as part of the quarry development. The consultancy Spiire Australia Pty Ltd have completed a flood assessment and conceptual design of the realigned waterway, which has received in principal support from Melbourne Water. A copy of Spiire's flood assessment and waterway diversion design (Stormwater Management Plan), including correspondence with Melbourne Water, is attached. This waterway diversion will be constructed early in the quarry development and will remain in that location.

The site water management strategy includes diversion of surface water flows away from disturbed areas, collecting and distributing it around the works, and to direct and collect incident rainfall and surface water flows on disturbed ground into sediment traps and the excavation. The disturbance area will be enclosed with bunds / cut-off drains that divert clean water away from the disturbed area, returning it to the environment, and are designed in consideration of peak flows during storm events and potential flooding. There are a number of constructed internal drainage lines within the property associated with the farming activities. As the pit develops across the property these will disappear and the northern waterway diversion will transmit surface water entering the property from the east around the disturbed areas to exit into the existing drainage line near the north-western corner of the property. The diversion is designed with broad areas for floodwater storage, ensuring that the diverted flows do not increase flooding impacts downstream. The flood modelling conducted by Spiire also shows that the excavation will not be impacted by a 1%AEP event and floodwaters will not flow into the excavation, and therefore not create other consequent hazards.

An adaptive Surface Water Management Plan will be maintained, and adapted as necessary, that sets out surface water control features and locations consistent with the site water management strategy. An initial Surface Water Management Plan with Trigger Action Response Plan (TARP) is attached demonstrating water management for the first two stages of extraction. The key water management features for managing any offsite impacts of surface water flows are also shown on Figure 3, Site Layout Plan, and any of these features retained at closure are shown on Figure 4, Rehabilitation Landform.

The measures adopted when disturbing new ground are consistent with the EPA guidelines.

Objectives

The key objectives of this risk treatment plan are to:

- Protect the beneficial uses of the local water environment as defined in the SEPP (Waters)
- Minimise the impact of any diversion of surface water flows required by the operation
- Minimise the impact to onsite infrastructure, and resulting offsite impacts, due to storm events

Compliance standards

The compliance standards for this risk treatment plan are:

**ADVERTISED
PLAN**

- Water Act (1989)
- Catchment and Land Protection Act (1994).
- Environment Protection Act 2017, or as amended (i.e. General Environmental Duty)
- State Environment Protection Policy (Waters), or as replaced by EPA Environment Reference Standard 2021 (ERS).

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- Storm water runoff is managed to meet the SEPP (Waters) / Environmental Reference Standard
- No detrimental effects to downstream environments due to diverted flows, other than as approved by Melbourne Water, and the diversion of Melbourne Water asset DR2504 does not detract from beneficial uses of surface water
- No storm water flooding / inundation of site infrastructure with subsequent offsite impacts

Control measures to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented –if not implicit in the control)
1.	Construct northern waterway diversion and fully rehabilitate early in project life, in accordance with Melbourne Water approval	Compliance with Melbourne Water approved design and approval conditions
2.	Maintain compliance to any Melbourne Water conditions regarding management of surface water diversion / works on waterway	Compliance to Work Plan Conditions and Melbourne Water authorisation
3.	Construct roads with sufficient diversion drains and culverts to ensure that clean stormwater is diverted away from roads.	Survey set out of roads and designs where necessary employ surface treatment to reduce erosion.
4.	Install a rain gauge at the Site Office, and check hourly during heavy rainfall	Record time and date, when emptied for a manual system, or download and save data logger file for automatic system
5.	Ensure that the gradient and orientation of tracks do not cause runoff to be fast flowing	Maintenance of tracks to minimise erosion.
6.	Arrange drainage of roads to be a vegetated area through erosion protection structures	Side and angled drain off collection drains protected against erosion.
7.	Ensure that drainage from an area where fuels/ lubricants/ hazardous material are stored / used is directed to a sump or an interceptor trap	Compliance to Work Plan and Site Layout Plan
8.	Install diversion drainage structures (pipes, bunds, cut off drains, swales drains etc) up-gradient of working areas to divert surface water flows over undisturbed ground and prevent clean surface water from entering the site and becoming contaminated.	Surface water diversion structures installed as per Surface Water Management Plan and effectively intercepting surface water before it reaches operating areas.
9.	Soil and overburden mounds used as diversion structures contoured and grassed and not contributing to turbid water	Diversion mounds contoured and vegetated and showing no evidence of erosion.

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented –if not implicit in the control)
10.	Diversion drains typically 1m wide and 0.4m deep adequate to accommodate the surface water flows storm events (i.e. 5% AEP)	Diversion drains capable of handling major (5% AEP) storm event
11.	Trigger Action Response Plan (TARP – Rainfall / Storm Events) implemented for significant rainfall events and to manage freeboard on above-ground water storage (farm dam)	TARP actions in Surface Water Management Plan implemented to manage impacts of significant rainfall events and manage freeboard level in water storage (farm dam)

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequences	Residual Risk Rating
13.	Turbid (dirty) water leaving the site.	ALL	Unlikely	Moderate	MEDIUM
14.	Inundation from flooding	ALL	Unlikely	Moderate	MEDIUM

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Integrity and performance of diversion of Melbourne Water asset DR2504	Inspect to assess the potential for contaminated stormwater to exit the site
2.	Erosion control structures (ie sediment fences)	Inspect and maintain erosion control structures
3.	Effectiveness of diversion drainage structures (swale drains, bunds, etc)	Inspected and maintained as required

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Integrity and performance of diversion of Melbourne Water asset DR2504	Internal reporting for site management after significant rainfall event or six monthly	Management Intervention
2.	Erosion control structures	Internal reporting for site management after significant rainfall event or six monthly	Management Intervention
3.	Effectiveness of diversion drainage structures (swale drains, bunds, etc)	Internal reporting for site management after significant rainfall event or six monthly	Management Intervention
4.	Reportable Event under MRSDA	ERR / On Event	Used to meet Work Authority holder's reporting obligations under the MRSDA

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	CMPA Guidance on Water Management Strategies for the Quarrying Industry	CMPA web site

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	Risk Management Plan	Work Plan
2.	Surface Water Management Plan and TARPs	Work Plan / Site Office
3.	Site Layout Plan	Work Plan / Site Office
4.	WA and WP conditions	Site office
5.	Planning permit conditions	Site office

**ADVERTISED
PLAN**

2.5. Ground Disturbance

ADVERTISED PLAN

Scope

This risk treatment plan is to assess and manage the impacts resulting from ground disturbing activities generated within the site and any potential impacts on the environment or sensitive receptors during quarry operations (ie set up / construction, operations/production and rehabilitation activities).

However, all risks associated with the impact of ground disturbance on ground instability, surface water flows or any resulting erosion and sedimentation are addressed in separate risk treatment plans.

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site	How hazard may harm or damage Sensitive Receptor	Evidence to support assessment
1.	Aboriginal cultural heritage	Aboriginal Cultural Heritage Sensitivity (ACHS) areas located outside the WA boundary to north and south	Potential for discovered Aboriginal cultural heritage to be impacted by ground disturbing activities within the WA	Aboriginal cultural heritage could possibly be discovered during operations
2.	Historical heritage	No Listed heritage within 5000m to site	Potential for discovered historical heritage to be impacted by ground disturbing activities within the WA	Historical heritage could possibly be discovered during operations
3.	Ecological values of native vegetation	Native vegetation located around margins of the site	Potential to be impacted by ground disturbing activities within the WA	Proximity to site
4.	Groundwater	Groundwater estimated approx. 1-4m below ground surface	Potential to be impacted by ground disturbing activities intersecting groundwater	Proximity to surface Monitoring bores
5.	Surface water and pit lake	Surface water runoff from stockpiles and onsite pit	Potential to be impacted by ground disturbing activities intersecting potentially acid generating materials	Resource drilling logs
6.	AusNet powerline	Easement through southern portion of proposed disturbance	Potential for electricity supply to be interrupted by ground disturbance within the WA	Proximity to Site

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
15.	Ground disturbing works inadvertently impacting on Aboriginal cultural heritage	ALL	Possible	Critical	VERY HIGH
16.	Ground disturbing works inadvertently impacting on historical heritage	ALL	Possible	Minor	MEDIUM
17.	Ground disturbing works impacting on ecological values of retained native vegetation.	ALL	Possible	Minor	MEDIUM
18.	Ground disturbing works impacting on groundwater beneficial uses	ALL	Possible	Major	HIGH
19.	Ground disturbing works impacting acidity of runoff and water in pit lake	O,R	Likely	Major	VERY HIGH
20.	Ground disturbing works impacting AusNet power poles and/or powerline	ALL	Likely	Moderate	HIGH

Quarrying Considerations

The proposed Work Authority Area does not contain any mapped Aboriginal cultural heritage sensitivity areas, the closest being several sites identified on the allotment to the north as part of the approvals

process for the Bass Gas Plant. The Work Authority boundary has been aligned to avoid this area. A Cultural Heritage Management Plan declaration and self-assessment is attached.

There is no heritage overlay on the site and no European Heritage listed assets in the vicinity. The closest Heritage Inventory site is the Peacock Road Artefact Scatter (H8021-0046 ID119018) approximately 5 kms south of the site near the Gurdies.

An ecological assessment (Norris and Schoeffel report attached) has been conducted of the site, and no areas of assessable native vegetation were identified within the proposed disturbance area. A single large tree was identified close to the eastern Work Authority boundary and the disturbance area was modified to avoid this with a 20m exclusion zone to be established around the tree. There is sparse relict native vegetation along some boundary fences (outside the property) that largely exists as narrow strips of low-value vegetation along the Highway roadside to the south. This vegetation includes introduced species (pines, etc.) and weeds. A significant proportion of the vegetation seen along other boundaries in the aerial photo, e.g. along the north-south boundary segment near groundwater monitoring bore MW02, consists of planted trees, so are not required to be assessed under DELWP regulations. Further, this is all in the setting of a largely cleared and drained agricultural landscape. Therefore, the ecological value of this relict native vegetation just outside the Work Authority is considered low.

The ecological assessment noted that the existing site farm dam is a DELWP mapped wetland. Advice from DELWP agreeing that this area of 'mapped wetland' can be excluded from assessment is attached. Additionally, the assessment identified a few larger trees just outside of the Work Authority boundary whose Tree Protection Zones (TPZs) intruded within the Work Authority. These TPZs were potentially impacted by the shallow drainage diversion and screening bund, which are necessarily close to the boundaries, but it was found that none were impacted by the proposed disturbance.

Hydrogeological assessment of the site has been undertaken by Nolan Consulting Pty Ltd (see attached). On the basis of onsite extraction bores and monitoring bores, it was found that groundwater is at 1-4m below the surface and that the final, stabilised level within the pit would be at approximately RL 19.3m. The property has had a groundwater Take & Use licence for 257 ML/yr for agricultural purposes (dairy and irrigation) since 1987. This is being replaced with a groundwater take and use licence from Southern Rural Water (attached) that is already in place for an annual allocation of 261.9ML, from both existing licensed bores and from the pit. The hydrogeological assessment found that the proposed groundwater extraction for the quarry would not have adverse impacts on nearby groundwater users or groundwater dependent ecosystems, as it effectively does not change the current approved level of groundwater extraction. Extraction will initially be 'dry' utilising excavators and truck, before changing to 'wet' extraction techniques below the groundwater level. Groundwater will not be discharged from site. It is expected that as the extraction area opens up the groundwater level in the east of the site will reduce.

An adaptive Groundwater Management Plan will be maintained that sets out the management of groundwater interception and the pit water level. The initial Groundwater Management Plan with monitoring, triggers and response measures is included as Appendix F of the attached Hydrogeological Assessment.

A mapped surface drainage line, Melbourne Water asset DR2504, flows across the northern area of the site from the eastern boundary to the northern boundary and is impacted by the proposed extraction area. The consulting firm Spiire Australia Pty Ltd, following engagement with Melbourne Water, have undertaken a flood assessment and waterway diversion design (see attached).

Some of the organic coated sands and peaty materials may have the potential to generate acid if they are exposed to the atmosphere for a prolonged period. As far as practicable, the exposure of these materials will be minimised and they will generally be retained below water within the pit to avoid acidification. When such materials are extracted from the pit for processing they will be stockpiled within the Processing and Stockpiling area or a Temporary Materials Storage and Handling area (Figure 3), where runoff is collected and directed via a sediment / interceptor trap back to the in pit water storage. Any acidified runoff can be treated, if necessary, either at the interceptor trap or when drawing water from the in pit water storage. The treatment utilised will be careful, measured application of neutralising agents, which is

necessary to the operation of the quarry, apart from maintaining water quality, to ensure that the water supply does not impact the effectiveness of the flocculants used in the processing plant.

Additionally, the sediment-laden water coming from the wash plant to the thickener will be treated, if necessary, by an automated dosing system to ensure that any acidity does not impact the effectiveness of the flocculants used in the thickener. The acidity of the water supply coming into the plant and water leaving the plant will also be monitored and treated if necessary to maintain, as far as practicable, approximately neutral conditions in the water storages.

Figure 3, Site Layout Plan, shows the location of the AusNet powerline that passes through the southern parts of the disturbance area and also the proposed relocation of the powerline to the southern boundary of the property. Attached is advice from AusNet Services, as a chain of emails in July 2022, covering a range of considerations for relocating the powerline. It is not necessary to relocate the powerline for some years but will be carried out before commencement of Stages 2 or 3 in the southern portion of the site. The staged construction of the screening bund in the south will maintain required separation distances from the powerline, before and after relocation. Once relocated, in accordance with AusNet Services approval, the power poles and powerline will be well away from any extraction areas and no further ground disturbance risk will be posed.

Objectives

The key objectives of this risk treatment plan are to:

- Minimise potential for ground disturbing works to impact on heritage values, ecological values, groundwater and infrastructure, or to lead to acidic runoff/pit water due to exposed materials.

Compliance standards

The compliance standards for this risk treatment plan are:

- Aboriginal Heritage Act
- Heritage Act
- Guidelines for the removal, destruction or lopping of native vegetation (DELWP 2017)
- Catchment and Land Protection Act (1994)
- State Environment Protection Policy (Waters), or as replaced by EPA Environment Reference Standard 2021 (ERS).
- EPA Publication 655.1, July 2009: Acid sulfate soil and rock

**ADVERTISED
PLAN**

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- The discovery of any Aboriginal artefacts is managed in accordance with the Aboriginal Heritage Act.
- The discovery of any European heritage is managed in accordance with the Heritage Act
- No unauthorised impacts on native vegetation
- Groundwater interception and use managed in accordance with all relevant licences and to meet the SEPP (Waters) / Environmental Reference Standard
- No acidification of runoff and water within pit lake, as a result of ground disturbing works.
- No disruption to electricity supply as a result of ground disturbing works impacting infrastructure.

Control measures to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented –if not implicit in the control)
1.	Quarry Manager aware of requirements of Aboriginal Heritage Act 2006 and contingency measures for the discovery of any artefacts.	Monitoring for heritage artefacts during all soil and subsoil removal activities Compliance to Work Authority and Work Plan conditions

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented –if not implicit in the control)
2.	Quarry Manager aware of requirements of Heritage Act 2017 and the contingency measures for the discovery of any artefacts.	Monitoring for heritage artefacts during all soil and subsoil removal activities Compliance to Work Authority and Work Plan conditions
3.	Operator training, operating procedures and supervision regarding discovery of Aboriginal or historic artefacts.	Standard Operating Procedures
4.	Fencing and signage of no-go areas, i.e. Tree Protection Zone at east end of site.	Site Layout Plan
5.	Maintaining agreed buffer zones.	Site Layout Plan
6.	Maintain planted vegetation to ensure continued viability.	Site Layout Plan
7.	Monitor and manage groundwater in accordance with Groundwater Management Plan and included TARPs	Groundwater Management Plan and TARPs implemented in accordance with Nolan Consulting hydrogeological assessment
8.	Maintain compliance to any conditions of Rural Water Authority and/or EPA regarding management of groundwater impacts	Compliance to Work Plan Conditions and any EPA permission
9.	Identify any potential acid generating materials that are excavated and, if not to be processed, return to pit (below water) as soon as practicable.	Acid generation from excavated materials is minimised. Note: in-situ overburden and topsoil materials above groundwater level do not have any potential for acid generation.
10.	Stockpiles that could potentially generate acid (product, excavated material for processing, overburden / interburden, or consolidated slimes) placed within designated areas with all runoff directed to the in pit water storage via an interceptor trap.	Any acid runoff generated from stockpiles is directed to the in pit water storage via an interceptor trap, where (if necessary) it can be treated with neutralising agents. Neutralising agents applied by appropriately trained staff / contractors and used in accordance with manufacturer's recommendations.
11.	Acidity of runoff through interceptor trap and water sourced from onsite bores monitored and treated, if necessary, to maintain pH at near neutral.	Runoff directed to the in pit water storage via an interceptor trap and water sourced from onsite bores treated (if necessary) with neutralising agents – maintaining near neutral pH. Neutralising agents applied by appropriately trained staff / contractors and used in accordance with manufacturer's recommendations.
12.	Appropriate signage and alerts near power lines and power poles	Standard Operating Procedures (SOPs)
13.	Relocation of powerlines through formal application to AusNet Services prior to commencing Stages 2 or 3	Powerline and easement relocated in accordance with AusNet Services requirements, before any extraction within Stages 2 or 3 (as per approved Site Layout Plan)
14.	Staged construction of screening bund (including vegetation) will maintain 5m separation from powerline, before and after relocation	Powerline, before and after relocation, remains at least 5m from screening bund and associated vegetation. Note: AusNet Services advises that relocated powerline can utilise much taller power poles where powerline needs to cross over the crest of the screening bund.

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
15.	Ground disturbing works inadvertently impacting on Aboriginal cultural heritage	ALL	Rare	Moderate	MEDIUM
16.	Ground disturbing works inadvertently impacting on historical heritage	ALL	Unlikely	Minor	LOW
17.	Ground disturbing works impacting on ecological values of retained native vegetation.	ALL	Unlikely	Minor	LOW

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
18.	Ground disturbing works impacting on groundwater beneficial uses	ALL	Unlikely	Moderate	MEDIUM
19.	Ground disturbing works impacting on acidity of runoff and water in pit lake	O,R	Unlikely	Moderate	MEDIUM
20.	Ground disturbing works impacting AusNet power poles and/or powerline	ALL	Rare	Moderate	MEDIUM

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Aboriginal and Historical heritage	Monitoring for heritage artefacts during all soil and subsoil removal activities, with contingency management measures in place.
2.	Unauthorised impacts on retained native vegetation	Fencing and buffer zone security and maintenance will be monitored through regular inspections. All inspections, and any subsequent actions will be documented in the site record book.
3.	Condition of planted vegetation	Monitor for continued viability and maintain as necessary
4.	Groundwater impacts – onsite	Groundwater monitoring bores and dewatering activities in accordance with Groundwater Management Plan (GMP) and the SRW extraction licences.
5.	Groundwater impacts – offsite: engagement with owners of the nearest supply bores to confirm that their bore levels have not been adversely impacted	Annual engagement, from end of Stage 2, or as necessary, in accordance with Groundwater Management Plan (GMP).
6.	Performance of measures to capture and treat acidic runoff from the Processing and Stockpiling area and the Temporary Materials Storage and Handling areas	Monthly inspections of all control structures in accordance with the site Surface Water Management Plan will be conducted, as well as following significant rainfall events (in accordance with TARP), remedial works as required. Inspections, and any required monitoring and remedial actions, documented in site record book.
7.	Acidity of collected runoff and water supply	Routine weekly monitoring of acidity in return water from processing plant, water collected in interceptor traps and water supply from bores and in pit water storage. Required to maintain effectiveness of flocculants as well as water quality.
8.	Separation distance to powerline	Ensure that staged construction of screening bund and planted vegetation maintains a 5m separation to powerline.
9.	Trigger for relocation of powerline	Ensure that AusNet application process for relocation of powerline occurs in a timely manner, before commencing extraction in Stages 2 or 3 (as per approved Site Layout Plan).

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Aboriginal heritage	AV Heritage self-assessment and CHMP declaration have also been completed & attached to Work Plan.	Legislative compliance
2.	Heritage impacts	Reporting as required under contingency measures and the Aboriginal Heritage Act and Heritage Act to all relevant authorities and other indigenous stakeholders.	Legislative compliance
3.	Groundwater	The results of required monitoring under GMP and licensing will be reported to management, SRW, ERR, and to other	Licence compliance / Management intervention

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
		stakeholders through the community engagement process.	
4.	Acidity of collected runoff and water supply, and performance of control structures	The results of any required monitoring will be reported to ERR / EPA. Internal reporting on performance of control structures, after significant rainfall event or six monthly.	Water quality monitored to ensure it is in line with SEPP / EPA Requirements. Management intervention and implement required remedial actions
5.	Trigger to relocate powerline	Management to engage with AusNet Services and submit formal application to relocate powerline	Management intervention to ensure powerline is relocated in a timely manner
6.	Reportable Event under MRSDA	ERR / On Event	Used to meet Work Authority holder's reporting obligations under the MRSDA

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	Guidelines for the Management of Water in Mines and Quarries (Earth Resources Regulation)	https://earthresources.vic.gov.au/legislation-and-regulations/guidelines-and-codes-of-practice/guidelines-management-of-water-in-mines-and-quarries
2.	Guidelines for the Removal, Destruction or Lopping of Native Vegetation (DELWP)	https://www.environment.vic.gov.au/native-vegetation/native-vegetation

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	Risk Management Plan	Work Plan
2.	Site Layout Plan	Work Plan
3.	Surface Water Management Plan and TARPs	Work Plan
4.	Groundwater Management Plan	Site Office
5.	Groundwater Licences	Site Office
6.	WA and WP conditions	Site Office
7.	Planning permit conditions	Site Office

**ADVERTISED
PLAN**

2.6. Ground Instability

ADVERTISED PLAN

Scope

This risk treatment plan is to assess and manage the hazard of ground instability within the site and any potential impacts on the environment or sensitive receptors during quarry operations (ie set up / construction, operations/production and rehabilitation activities).

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site	How hazard may harm or damage Sensitive Receptor	Evidence to support assessment
1.	Private Property	Adjoining Private land	Potential to be impacted by ground instability within the WA	Proximity to Site
2.	Crown land	South Gippsland Highway Road and road reserve	Potential to be impacted by ground instability within the WA	Proximity to Site
3.	Melbourne Water asset DR2504	Located on the site	Potential to be impacted by ground instability within the WA	Proximity to Site
5.	Bass Gas Pipeline	Easement adjacent to 200m length of northern boundary	Potential to be impacted by construction of waterway diversion	Proximity to Site

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
21.	Slope / embankment failure impacting beyond WA boundary	ALL	Possible	Major	HIGH
22.	Localised (single bench) failure	C,O	Possible	Minor	MEDIUM
23.	Construction of waterway diversion impacts on stability of adjacent Bass Gas Pipeline easement or adjacent land	C,O	Unlikely	Moderate	MEDIUM

Quarrying Considerations

The WA007541 site adjoins sparsely occupied, private agricultural land, as well as other extractive industries and the Bass Gas plant. The South Gippsland Highway is located along the southern Work Authority boundary, while the realigned Melbourne Water asset DR2504 (waterway diversion) will be located on the northern boundary. Operating and final slope instability has the potential to have impacts on assets within the site and beyond the Work Authority boundary.

The quarrying will involve dry extraction down to approximately 4m depth and then extraction below groundwater down to a maximum depth of 30m (refer to Figure 3 Site Layout Plan). Extraction below the groundwater level will be undertaken by dredge, grab crane or dragline. Terminal batters will be developed to profiles of 1V:3H (approx. 18 deg) above groundwater level and 1V:2H (approx. 26 deg) below groundwater level. The upper batters will be rehabilitated with a 1V:5H beaching bench established at the standing groundwater level. The upper 1V:3H batters will be revegetated as soon as practicable after reaching the terminal face.

GHD have undertaken a Geotechnical Assessment of the proposed pit, based on design batter profiles and extraction methods, including an assessment of the risk to nearby assets and receptors. A copy of GHD's geotechnical assessment is attached. Also attached is a site Ground Control Management Plan produced by GHD. The assessment concluded that Design Acceptance Criteria were satisfied and the residual risk to receptors was Low provided batter design and offsets were in place. The assessment found that a minimum offset distance of 35.5m was required for the final rehabilitated batters. The pit design includes a minimum setback distance of 40m from the extraction limit to the property boundaries and the shallow channel for the northern waterway diversion (not including any surficial disturbance at its margins).

All slopes/batters including excavations, roadways, stockpiles and dumps will be constructed and maintained to ensure stability. If there is a significant slope failure event, operations will cease in that area and the relevant authority notified, and the appropriate steps taken to rectify the incident.

The shallow waterway diversion along the northern boundary of the Work Authority (for asset DR2504) has been designed by Spiire Australia Pty Ltd with in principal support from Melbourne Water (see attached flood assessment and waterway diversion design). Beach Energy has advised that the proposed setback distance for the waterway diversion, as well as 30m for any proposed groundwater monitoring bores, from the adjacent Bass Gas pipeline easement is satisfactory and this will not affect the pipeline. Refer to attached advice from Beach Energy, dated 4 August 2022.

Objectives

The key objectives of this risk treatment plan are to:

- Minimise potential for ground slips/failures to impacting beyond the extraction limit

Compliance standards

The compliance standards for this risk treatment plan are:

- Geotechnical Guideline for Terminal and Rehabilitated Slopes – Extractive Industry Projects (ERR)
- CMPA Working Safely with Geotechnical Risk in Quarries

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- No ground slips/failure impacting beyond Extraction Boundary.

**ADVERTISED
PLAN**

Control measures to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented –if not implicit in the control)
1.	Marking out Extraction Boundary	Extraction Boundary marked with Yellow Posts
2.	Fencing and signage to indicate “No Go” areas, buffer areas, infrastructure areas	Suitable Fencing and signage in place and effective
3.	Maintain agreed buffer zones	Compliance to Work Plan and Site Layout Plan
4.	Divert surface water away from batters / embankments with culverts, swale drains and bunds.	Compliance to Work Plan and Site Layout Plan Water management as per Surface Water Management Plan
5.	Compliance to design of all quarry faces, embankments and mounds.	Compliance to Work Plan / Site Layout Plan / Ground Control Management Plan
6.	Initial stability assessment, as triggered by Ground Control Management Plan to confirm material parameters and slope design.	Review triggered and undertaken once a suitable depth of material is exposed, in accordance with Ground Control Management Plan, and performed by a suitably qualified and experienced person
7.	Minimum five-yearly stability reviews after initial stability assessment.	Reviews undertaken in accordance with Ground Control Management Plan and performed by a suitably qualified and experienced person
8.	Dewatering of exposed batters and berms, with surface drainage controls in place.	Compliance to Work Plan / Site Layout Plan / Ground Control Management Plan
9.	Site inspections at least monthly and before (if possible) forecast and immediately after significant rain fall events.	Compliance to Work Plan / Site Layout Plan / Ground Control Management Plan Compliance to Rehabilitation Plan (Monitoring schedule)
10.	Investigation of any localised bench failures.	Compliance to Work Plan / Site Layout Plan / Ground Control Management Plan Compliance to Rehabilitation Plan (Monitoring schedule)
11.	Construction of shallow waterway diversion to Melbourne Water requirements and disturbed areas fully revegetated as soon as practicable	Waterway diversion constructed in accordance with Melbourne Water approval and detailed design parameters, including prompt establishment of vegetation to prevent erosion.

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
21.	Slope / embankment failure impacting beyond WA boundary	ALL	Rare	Major	MEDIUM
22.	Localised (single bench) failure	ALL	Unlikely	Minor	LOW
23.	Construction of waterway diversion impacts on stability of adjacent Bass Gas Pipeline easement or adjacent land	C,O	Rare	Minor	LOW

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Slope stability	Inspections will be conducted of extraction area faces (both operating and rehabilitated), extraction pit perimeter and site surface water management structures in accordance with Ground Control Management Plan. Standard operating procedures require all operators to report changes in ground conditions. Inspections, reports and any remedial actions will be documented in site record book. Results of site inspection and any remediation works recorded in the Site Manager's Record book.
2.	Surface water management	Minimum monthly inspections and after rain events, in accordance with Surface Water Management Plan, will be conducted and include all surface water management structures. Inspections, and any required monitoring and remedial actions documented in site record book.
3.	Landform stability of constructed waterway diversion (Melbourne Water asset DR2504)	Minimum monthly inspections, and after rain events, for landform stability and establishment of vegetation on disturbed ground, until full stabilisation of constructed waterway diversion. Annual inspections, and after significant rain events, thereafter.

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Slope stability	Any localised face failures, excessive surface cracking or other signs of geotechnical instability will be investigated. The results of any required investigations will be documented and reported to ERR and any potentially impacted stakeholders.	Management intervention and or redesign of terminal batters in accordance with Ground Control Management Plan
2.	Surface water management	Internal reporting on performance of surface water management structures, for site management, after significant rainfall event or three monthly.	Licence compliance / Management Intervention Implement required remedial actions
3.	Landform stability of constructed waterway diversion	Any required reporting and results of monitoring under Melbourne Water approval will be reported to Melbourne Water	To ensure long-term function and stability of waterway diversion and ensure there is no stability threat to adjacent gas pipeline easement or adjacent land
4.	Reportable Event under MRSDA	ERR / On Event	Used to meet Work Authority holder's reporting obligations under the MRSDA

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	Geotechnical Guideline for Terminal and Rehabilitated Slopes – Extractive Industry Projects (Earth Resources Regulation)	https://earthresources.vic.gov.au/legislation-and-regulations/guidelines-and-codes-of-practice

#	Document	Source (e.g. URL, appendix number)
2.	Guidelines for the Assessment of Geotechnical Risks in Open Pit Mines and Quarries (Earth Resources Regulation)	https://earthresources.vic.gov.au/legislation-and-regulations/guidelines-and-codes-of-practice/guidelines-assessment-of-geotechnical-risks-in-open-pit-mines
3.	CMPA Working Safely with Geotechnical Risk in Quarries	CMPA website

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	Risk Management Plan	Site Office
2.	Site Layout Plan	Site Office
3.	Ground Control Management Plan	Site Office
4.	Surface Water Management Plan and TARPs	Site Office
5.	WA and WP conditions	Site Office
6.	Planning permit conditions	Site Office

**ADVERTISED
PLAN**

2.7. Erosion and Sedimentation

Scope

This risk treatment plan is to assess and manage the impacts of erosion and carriage of sediment from disturbed areas that can potentially impact the environment or sensitive receptors during quarry operations (ie set up / construction, operations/production and rehabilitation activities).

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site	How hazard may harm or damage Sensitive Receptor	Evidence to support assessment
1.	Surface waterways	Melbourne Water asset DR2504 on northern boundary of site	Potential to be impacted by sediment-laden surface waters	Proximity to Site
2.	Neighbouring Properties and environment	Adjacent landowners	Potential to be impacted by sediment-laden surface waters	Proximity to site Downstream

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
24.	Erosion from roads and disturbed areas resulting in silt laden run-off	ALL	Likely	Moderate	HIGH
25.	Erosion from bunds	ALL	Likely	Moderate	HIGH
26.	Erosion from stockpiles (product and other) and hardstand areas	O, R	Likely	Moderate	HIGH

Quarrying Considerations

The site is located within the Co-Designed Catchment Program for the Westernport and Mornington Peninsula Region, under the Melbourne Water Healthy Waterways Strategy (Melbourne Water Corporation, 2018), although it is outside the 'Stormwater priority area'. Melbourne Water asset DR2504 flows along the northern boundary of the site and will be realigned with a waterway diversion as part of the quarry development.

Uncontrolled surface water flows may cause erosion to take place from extraction areas, stockpiles, constructed embankments, natural slopes and rehabilitated landforms. Sediment deposition may affect the drain lines on the Work Authority area or neighbouring lands.

The site water management strategy includes diversion of surface water flows away from disturbed areas, collecting and distributing it around the works, and to direct and collect incident rainfall and surface water flows on disturbed ground into sediment traps and the excavation. The northern waterway diversion will be established early in the site development and will be required, subject to Melbourne Water approval, to be revegetated and fully rehabilitated as soon as practicable to minimise erosion and sedimentation. The upper terminal batters, above the final water level, will be revegetated as soon as practicable after reaching the terminal face.

An adaptive Surface Water Management Plan will be maintained, and adapted as necessary, that sets out surface water control features and locations consistent with the site water management strategy. An initial Surface Water Management Plan with Trigger Action Response Plan (TARP) is attached demonstrating water management for the first two stages of extraction. The key water management features for managing any offsite impacts of erosion and sedimentation are also shown on Figure 3, Site Layout Plan, and any of these features retained at closure are shown on Figure 4, Rehabilitation Landform.

The measures adopted when disturbing new ground will be consistent with EPA guidelines. Acceptance criteria are provided below to define the upper limit for erosion from earthworks on rehabilitated terminal batters that have not yet been stabilised to control erosion. Obtaining a quantitative measure of erosion is difficult, therefore the stated acceptance criteria for erosion are based on a qualitative (visual) assessment. Refer to Section 4.1 of the Rehabilitation Plan for discussion of suitable erosion criteria.

Objectives

The key objectives of this risk treatment plan are to:

- Prevent erosion and sediment runoff from onsite activities
- Minimise offsite impacts of erosion and sediment run-off on the surrounding environments
- Protect the beneficial uses of the local water environment as defined in the SEPP (Waters)
- Minimise the risk of failure of on-site infrastructure or rehabilitated areas due to erosion

Compliance standards

The compliance standards for this risk treatment plan are:

- Catchment and Land Protection Act (1994).
- Environment Protection Act 2017, or as amended (i.e. General Environmental Duty)
- State Environment Protection Policy (Waters), or as replaced by EPA Environment Reference Standard 2021 (ERS)
- EPA Publication 1823.1, June 2021: Mining and Quarrying – Guide to preventing harm to people and the environment
- EPA Publication 1894, September 2020: Managing Soil Disturbance – Guidance sheet
- EPA Publication 1895, September 2020: Managing Stockpiles – Guidance sheet

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- Site runoff is managed to meet the SEPP (Waters) / Environmental Reference Standard
- No delivery of sediment to land or waterways outside the Work Authority area as a result of ground disturbing works, other than as approved by Melbourne Water
- No unmanaged areas of active soil erosion within the Work Authority area or adjacent areas due to site discharges
- Erosion: on rehabilitated terminal batters that have not yet been stabilised, including interim batters between stages, no erosion channels greater than 200mm deep and/or wide
- Erosion: on rehabilitated terminal batters that have not yet been stabilised, including interim batters between stages, no more than 5 erosion channels greater than 150mm deep and/or wide within a 20m wide area

Control measures to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented –if not implicit in the control)
1.	Sediment traps, diversion drains, bunds, sediment fences, vegetation windrows, temporary and long-term mounds and any other necessary controls, adapted as required, around all ground disturbing activities	Erosion and sediment control structures as per Surface Water Management Plan Construction of erosion and sediment control features consistent with EPA guidelines
2.	Maintain compliance to any conditions of Melbourne Water and/or EPA regarding management of any potential offsite discharge	Compliance to Work Plan Conditions and any EPA permission
3.	Design of all quarry pit crests, to incorporate swale drains and/or diversion bunds as required.	All works in accordance with design
4.	Divert surface water away from disturbed area with swale drains and bunds.	Minimal surface flows over disturbed areas
5.	Control structures on all internal roads and tracks.	Control structures in place
6.	Strategic location of any sedimentation traps.	Sediment traps located as per Surface Water Management Plan
7.	Any sand extracted with a grab crane or drag line will be allowed to dewater before delivery to the processing plant	Sediment-laden water draining from material extracted by grab crane or drag line (temporarily stockpiled) flows directly back into the excavation.

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented –if not implicit in the control)
8.	Runoff from designated areas for processing and stockpiles (product, excavated material for processing, overburden / interburden, or consolidated slimes) directed to the in pit water storage via a sediment / interceptor trap.	Runoff from all processing and stockpiling areas is directed to the in pit water storage via a sediment / interceptor trap.
9.	Overburden / interburden stockpiles, if not on drained hardstands, have a contour drain at the base to intercept / direct runoff into the site sediment controls.	Sediment-laden water draining from overburden / interburden stockpiles prevented from discharging from disturbance areas.
10.	Contour, vegetate and stabilise topsoil and overburden stockpiles to be retained more than 6 months.	Topsoil and overburden stockpiles stabilised when retained more than 6 months from construction. Vegetation maintained
11.	Establish initial pasture on upper terminal batters, as soon as practicable, and also interim batters left for more than 12 months between stages	Topsoiled and planted pasture on upper terminal batters awaiting rehabilitation within 3 months and interim batters between stages inactive for greater than 12 months. Pasture to be fully established within 12 months. Any erosion on rehabilitated upper terminal batters that are not yet stabilised is within erosion acceptance criteria (above). Vegetation maintained and remedial action taken if erosion criteria exceeded.
12.	Trigger Action Response Plan (TARP – Rainfall / Storm Events) implemented for significant rainfall events	TARP actions in Surface Water Management Plan implemented to manage impacts of significant rainfall events

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
24.	Erosion from roads and disturbed areas resulting in silt laden run-off	ALL	Possible	Moderate	MEDIUM
25.	Erosion from bunds	ALL	Possible	Moderate	MEDIUM
26.	Erosion from stockpiles (product and other) and hardstand areas	O,R	Possible	Moderate	MEDIUM

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Water management structures (drains, bunds, sediment traps, etc) evaluated for performance	Inspection of all water management structures after each significant rainfall event, in accordance with TARP in Surface Water Management Plan, remedial works as required.
2.	Evidence of erosion, and subsequent sediment-laden runoff	Monthly inspections will be conducted of the site, as well as following significant rainfall events (in accordance with TARP), which will include waste dumps, topsoil stockpiles, surface water management structures and potential receiving drainage lines. Inspections, and any required monitoring and remedial actions documented in site record book.
3.	Surface water quality	Specific surface water quality monitoring is not proposed but may be undertaken if directed by the ERR.

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Surface water management structure performance in	Internally after monthly inspections	Implement required remedial actions

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
	preventing offsite turbid discharge		
2.	Surface water quality	The results of any required monitoring will be reported to ERR / EPA, and to other stakeholders through the community engagement process.	Water quality monitored to ensure it is in line with SEPP / EPA Requirements. Commitment is made to apply for all / any relevant Licence as directed
3.	Reportable Event under MRSDA	ERR / On Event	Used to meet Work Authority holder's reporting obligations under the MRSDA

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	EPA guidance sheets (publications 1894, 1895)	https://www.epa.vic.gov.au/about-epa/publications
2.	Guidelines for the Management of Water in Mines and Quarries (Earth Resources Regulation)	https://earthresources.vic.gov.au/legislation-and-regulations/guidelines-and-codes-of-practice/guidelines-management-of-water-in-mines-and-quarries
3.	CMPA Water Management Guidelines (draft)	CMPA website

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	Risk Management Plans	Work Plan
2.	Site Layout Plan	Work Plan
3.	Surface Water Management Plan and TARPs	Site office
4.	WA and WP conditions	Site Office
5.	Planning permit conditions	Site Office

**ADVERTISED
PLAN**

2.8. Process Water and Storages

Scope

This risk treatment plan is to assess and manage the hazard associated with process waters and storages on the site and any potential impacts on the environment or sensitive receptors during quarry operations (ie set up / construction, operations/production and rehabilitation activities).

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site	How hazard may harm or damage Sensitive Receptor	Evidence to support assessment
1.	Surface waterways	Melbourne Water asset DR2504 on northern boundary of site	Potential to be impacted by uncontrolled release / overtopping of water storages	Proximity to Site
2.	Neighbouring properties and environment	Adjacent landowners	Potential to be impacted by uncontrolled release / overtopping of water storages	Proximity to Site Downstream

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
27.	Discharge from overtopping of water storage dams to surface waterways and the environment.	ALL	Possible	Minor	MEDIUM
28.	Failure of a water storage resulting in discharge to surface waterways and the environment.	ALL	Possible	Minor	MEDIUM

Quarrying Considerations

The WA007541 site adjoins sparsely occupied, private agricultural land, as well as other extractive industries and the Bas Gas plant. The current site use is intensive dairy farming, with a large 'turkey nest' dam located on the south side of the property adjacent to the South Gippsland Highway. The existing farm dam, which is maintained (fed) from licensed groundwater bores (Southern Rural Water), will continue to be used for general farming activities as well as dust suppression and processing requirements.

As part of processing plant construction and initial extraction, an in pit plant water storage dam will be excavated below natural surface immediately adjacent to the plant site. Return water from the processing plant, along with runoff from processing and stockpiling areas via a sediment / interceptor trap, will be managed through the in pit water storage. This in pit water storage will be separated from adjacent extraction stages, with walls formed of retained insitu material.

An adaptive Surface Water Management Plan will be maintained, and adapted as necessary, with a Trigger Action Response Plan (TARP) that sets out the management of freeboard levels in water storages. An initial Surface Water Management Plan is attached demonstrating water management for the first two stages of extraction.

Objectives

The key objectives of this risk treatment plan are to:

- Minimise the risk of water discharging from water storages and impacting the environment and surface waterways
- Protect the beneficial uses of the local water environment as defined in the SEPP (Waters)

Compliance standards

The compliance standards for this risk treatment plan are:

- Water Act (1989)
- Catchment and Land Protection Act (1994)
- Environment Protection Act 2017, or as amended (i.e. General Environmental Duty)

- State Environment Protection Policy (Waters), or as replaced by EPA Environment Reference Standard 2021 (ERS)
- EPA Publication 1823.1, June 2021: Mining and Quarrying – Guide to preventing harm to people and the environment
- Southern Rural Water licences

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- On-going integrity of water storages
- No discharge of water into the environment and surface waterways

**ADVERTISED
PLAN**

Control measures to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented –if not implicit in the control)
1.	Control structures on hard stand areas and all internal roads and tracks.	Control structures in place and functional
2.	Regular inspection of above-ground water storage (farm dam) wall integrity	Checklists completed and remedial action documented
3.	Maintenance of appropriate freeboard on above ground water storage (farm dam) to ensure storage integrity	Integrity of water storage dam maintained through management of freeboard levels
4.	Trigger Action Response Plan (TARP – Water Storages) implemented to manage freeboard on water storage (farm dam)	TARP actions in Surface Water Management Plan implemented to manage freeboard levels
5.	Excess water in water storage (farm dam) will be irrigated to rehabilitated areas or surrounding pasture.	No water stored at more than maximum freeboard level in water storage (farm dam)

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
27.	Discharge from overtopping of water storage dams to surface waterways and the environment.	ALL	Unlikely	Minor	LOW
28.	Failure of a water storage resulting in discharge to surface waterways and the environment.	ALL	Unlikely	Minor	LOW

Monitoring

No water quality monitoring is proposed

#	Aspect to be monitored	Details of monitoring
1.	Dam Wall integrity	Monthly inspections
2.	Storage capacity / freeboard in water storage (farm dam)	Rainfall events and storage freeboard (see TARP in Surface Water Management Plan for details)

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Dam Wall Integrity	Internally after monthly Inspections	Implement required remedial actions
2.	Storage capacity / freeboard in water storage (farm dam)	Internal reporting for site management after significant rainfall event or three monthly	Implement required remedial actions, in accordance with TARP
3.	Reportable Event under MRSDA	ERR / On Event	Used to meet Work Authority holder's reporting obligations under the MRSDA

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	CMPA Water Management Guidelines	CMPA website
2.	CMPA Working Safely with Geotechnical Risk in Quarries	CMPA website
3.	Your Dam: Your Responsibility – A Guide to Managing the Safety of Small Dams (DELWP)	https://www.water.vic.gov.au/managing-dams-and-water-emergencies/dams/guidance-notes

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	Risk Management Plans	Work Plan
2.	Surface Water Management Plan and TARPs	Site Office
3.	WA and WP conditions	Site Office
4.	Planning permit conditions	Site Office

**ADVERTISED
PLAN**

ADVERTISED PLAN

2.9. Slimes Storage

Scope

This risk treatment plan is to assess and manage the hazard associated with wet slimes storage facilities (slimes dams) on the site and any potential impacts on the environment or sensitive receptors during quarry operations (ie set up / construction, operations/production and rehabilitation activities).

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site	How hazard may harm or damage Sensitive Receptor	Evidence to support assessment
1	Surface water	Melbourne Water asset DR2504	Slimes release may impact surface water quality and downstream users	Proximity to site
2.	Environment	Adjacent to site	Slimes release may impact environment	Proximity to site

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
29.	Slimes discharging to surface waterways as a result of flooding / overtopping	O,R	Unlikely	Moderate	MEDIUM

Quarrying Considerations

The processing of sand will necessarily include the treatment of the slimes produced. The slimes will be passed through a thickener and mechanical dewatering and pressing equipment, which will recover a significant proportion of the process water for reuse and eliminates most of the need for wet slimes storage. This will result in a dewatered and consolidated fines/slimes product of 'spadable' consistency (typically 50-55%w/w) that is capable of being stacked and stored on a hardstand area, without the need for liquid or slurry containment. It is not intended that any significant volume of wet slimes will be produced, nor that slimes dams will need to be constructed. After stockpiling of the consolidated slimes, where it can further drain, the consolidated fines/slimes will be co-mingled with overburden and interburden, and other plant oversize/waste, and used in partial backfilling of the completed extraction areas, and some may be used, where suitable, in rehabilitation of upper terminal batters and/or rehabilitation of the surfaces of the constructed screening bund. The backfill material deposited at the bottom of the water body will be distributed by conveyor so that it remains at least 3m below the seasonal fluctuations (0.25m above and below) in the final, stabilised water's surface, which has been determined by the attached hydrogeological assessment.

The stockpiling of dewatered and consolidated slimes will occur within either the Processing and Stockpiling area or the Temporary Materials Storage and Handling area, which is relocated as the quarry develops. The length of time required for stockpiling will be highly variable depending on the availability of space within the pit for backfilling, the availability of overburden and plant oversize / waste, which in turn are dependent on the staging of quarry development and the variable level of oversize / waste produced from the resource. Therefore, the need for stockpiling of dewatered and consolidated slimes could vary from none (immediate use) up to a maximum of approximately 12 months, as overburden stripping usually occurs in the summer months (assuming space is available within the pit at that time for backfill).

As a contingency, in the event that mechanical dewatering and pressing equipment are inoperable, slimes will be placed into the in pit water storage, developed in the initial extraction area adjacent to the processing plant. The walls of this in pit water storage will be formed of insitu material, retained to separate the storage from adjacent extraction stages, mainly for the purpose of managing the process water. This low volume depositing of wet slimes will have an immediate detrimental impact on reclaimed process water quality and will only be continued until the slimes management system is reinstated. Additionally, there will be limited wet slimes storage required within the in pit water storage during the initial commissioning and evaluation trials to design the most appropriate slimes processing equipment.

Any such deposition into the in pit water storage will be by pumping material and placement below the standing groundwater level.

Any limited wet slimes placed in the in pit water storage will settle and remain at the base of the storage well below the surface of the water with the water above it continuing to be utilised to supply the Wash Plant. The slimes collected in this storage can be pumped back later to the plant for consolidation if necessary.

Ultimately, the walls of insitu material around the in pit water storage will be largely removed during the final phase of the quarry extraction. Any limited volume of slimes at its base will mix with the much greater volume of surrounding backfill material (i.e. overburden with blended consolidated slimes), which will have been deposited at the bottom of the water body throughout the operation. The surrounding backfill material will be moved into the space of the in pit water storage during this final removal of the walls.

The slimes deposited at the bottom of the water body below the water's surface, largely as consolidated slimes blended with overburden / interburden and plant oversize / waste, has no potential to be released into the environment or pose a risk to members of the public. The flood modelling conducted by Spiire (refer to attached flood assessment and waterway diversion design) demonstrates that, with the waterway diversion in place, uncontrolled floodwaters will not enter the extraction area and so cannot displace any contained slimes.

Objectives

The key objectives of this risk treatment plan are to:

- Manage and store wet slimes in a safe and stable environment
- Eliminate the risk of slimes discharging and impacting the environment and surface waterways

Compliance standards

The compliance standards for this risk treatment plan are:

- Water Act (1989)
- Catchment and Land Protection Act (1994)
- Environment Protection Act 2017, or as amended (i.e. General Environmental Duty)
- State Environment Protection Policy (Waters), or as replaced by EPA Environment Reference Standard 2021 (ERS)
- EPA Publication 1823.1, June 2021: Mining and Quarrying – Guide to preventing harm to people and the environment

**ADVERTISED
PLAN**

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- Limited wet slimes storage to be below natural ground level and below water level
- No discharge of slimes into the environment and surface waterways
- No long term or permanent slimes storage dams.

Control measures to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented – if not implicit in the control)
1.	Minimise wet slimes production by operation of thickeners and mechanical dewatering / pressing process	Construction and operation of suitable slimes thickener and dewatering / pressing equipment. Reliability of slimes processing plant to produce 'spadeable' consistency waste stream for blending with overburden, interburden or plant oversize/waste, and used in partial backfill of excavation areas and site rehabilitation, where suitable.
2.	Surface drainage controls to direct sediment-laden return water from the processing plant and hardstand to the in pit water storage.	Surface water management structures in place, maintained and adequate to capture sediment-laden return water from processing plant, as per Surface Water Management Plan.

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented – if not implicit in the control)
3.	Stockpiles of consolidated slimes placed within designated areas, with all runoff directed to the in pit water storage via an sediment / interceptor trap.	Any sediment-laden runoff generated from stockpiles is directed to the in pit water storage via a sediment / interceptor trap.
4.	Ensure any wet slimes placed into the in pit process water storage is deposited below standing groundwater level.	Deposition below water.
5.	Accumulated wet slimes within the in pit process water storage that exceeds 3m depth will be pumped to processing plant for consolidation.	Depth of wet slimes, over the quarry life, is prevented from accumulating in the in pit process water storage and posing a hazard for site rehabilitation.
6.	Construct northern waterway diversion early in project life to prevent flooding of pit	Compliance with Melbourne Water approved design and approval conditions

Residual Risk Assessment

#	Details of the Risk Event	Phase	Unlikely	Consequence	Residual Risk Rating
29.	Slimes discharging to surface waterways as a result of flooding / overtopping	O,R	Rare	Minor	LOW

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Performance of slimes thickener and dewatering equipment	Monthly inspections, documented in site record book and any required monitoring and remedial actions.
2.	Performance of surface water management for processing plant and hardstand area, as well as designated stockpile areas	Monthly inspections, documented in site record book and any required monitoring and remedial actions
3.	Water quality within in pit process water storage, and the depth of any deposited wet slimes material.	Routine weekly inspection of the in pit process water storage. Required to maintain effectiveness of wash plant as well as water quality.

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Performance of slimes thickener and dewatering equipment	Internally after monthly inspections	Management intervention and implement required remedial actions
2.	Performance of surface water management structures for processing plant and hardstand area, as well as designated stockpile areas	Internally after monthly inspections	Implement required remedial actions
3.	Water quality within in pit process water storage, and the depth of any deposited wet slimes material	The results of any required monitoring will be reported to ERR/EPA.	Management intervention and implement required remedial actions
4.	Reportable Event under MRSDA	ERR / On Event	Used to meet Work Authority holder's reporting obligations under the MRSDA

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	Environmental Guidelines for the Management of Small Tailings Storage Facilities: Management of Water in Mines and Quarries (Earth Resources Regulation)	https://earthresources.vic.gov.au/legislation-and-regulations/guidelines-and-codes-of-practice/environmental-guidelines-for-the-management-of-small-tailings-storage-facilities
2.	Design and Management of Tailings Storage Facilities (Earth Resources Regulation)	https://earthresources.vic.gov.au/legislation-and-regulations/guidelines-and-codes-of-practice

#	Document	Source (e.g. URL, appendix number)
4.	CMPA Slimes Management Guidelines	CMPA website
5	CMPA Water Management Guidelines	CMPA website

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WA Work Plan & Risk Treatment Plan	Site office
2.	Surface Water Management Plan	Site Office
3.	Work Plan Conditions / Planning Permit Conditions	Site office

**ADVERTISED
PLAN**

ADVERTISED PLAN

2.10. Imported Materials

Scope

This risk treatment plan is to assess and manage the hazard associated with the importation of materials from external sites (ie other than WA007541), in particular 'clean fill' and blending sands, for processing, product blending or use in site rehabilitation, and any potential impacts on the environment or sensitive receptors this may have during quarry operations (ie set up / construction, operations/production and rehabilitation activities).

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site	How hazard may harm or damage Sensitive Receptor	Evidence to support assessment
1.	Surface Water	Melbourne Water asset DR2504	Potential to be impacted by contaminated soil / material imported to the site	Proximity to site
2.	Groundwater	Groundwater will be exposed within the excavation	Potential to be impacted by contaminated soil / material imported to the site	Proximity to excavation
3.	Environment	Adjacent land uses and immediate neighbours	Potential for the land to be impacted by contaminated soil / material imported to the site	Proximity to site

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
30.	Impacts on the natural environment, including on surface and groundwater, from imported materials containing weeds or other contaminants	ALL	Possible	Minor	MEDIUM
31.	Impacts on the natural environment, including surface and groundwater, from hazardous waste/materials being imported to site	ALL	Possible	Minor	MEDIUM
32.	Impacts on the natural environment, including surface and groundwater, from introducing soil-borne diseases to site	ALL	Possible	Minor	MEDIUM

Quarrying Considerations

There are enough quantities of overburden on site to undertake the designed rehabilitation works. The importation of 'clean fill' (uncontaminated soil, including gravel and rock), or other materials (such as blending sands, etc) may be necessary at various stages throughout the quarry life.

Imported materials that may pose a hazard that requires management will typically be construction materials ('clean fill' or recycled aggregates) for hardstand areas, roadways and other works and potentially some 'clean fill' or mulch to supplement site rehabilitation in aiding the establishment of vegetation. Additionally, other processed or extracted raw sands will be brought to the site for blending with sand extracted onsite to achieve product specifications, however such imported sand is not classified as 'waste' under EPA legislation. Any material imported as part of the Work Authority's operations will be handled in accordance with the Imported Materials Management Plan. There is no intention to dispose of any imported waste materials within the backfill deposited in the pit.

Objectives

The key objectives of this risk treatment plan are to:

- Prevent contamination of the site by importing hazardous materials or soils carrying seeds of declared weeds or infested with soil-borne plant diseases

- Prevent unlicensed importation and storage of domestic or industrial wastes and hazardous materials

Compliance standards

The compliance standards for this risk treatment plan are:

- Environment Protection Act 2017, or as amended (ie General Environmental Duty)
- EPA Publication 1823.1, June 2021: Mining and Quarrying – Guide to preventing harm to people and the environment
- EPA Publication 1968.1, August 2021: Guide to classifying industrial waste
- EPA Publication 1828.2, July 2021: Waste disposal categories – characteristics and thresholds
- EPA Publication 1624: Industrial Waste Fact Sheet
- EPA Publication No. 655.1: Acid Sulphate Soil and Rock
- Catchment and Land Protection Act (1994)
- Planning and Environment Act (1987)

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- The management of imported materials does not detract from beneficial uses of soil, surface water or groundwater within or near the Work Authority area
- Importation and management of imported materials fully complies with applicable legislative and regulatory requirements.

Control measures to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented –if not implicit in the control)
1.	Any imported material handled in accordance with Imported Materials Management Plan	Imported Materials Management Plan in place before the importation of any material, consistent with relevant guidelines and EPA legislation.
2.	Source/supplier of imported material vetted for reputability.	Imported Materials Management Plan in place and all records / checklists up to date.
3.	All deliveries of imported materials accompanied by a 'Delivery Driver Checklist', or similar docket.	Imported Materials Management Plan in place and all records / checklists up to date.
4.	Confirm the EPA waste classification of the imported materials and confirm that the site is authorised to receive that material, and the importation meets all other EPA / ERR requirements	Imported Materials Management Plan in place and all records / checklists up to date.
5.	Visual inspection of all inbound materials prior to accepting on site, and again on stockpile at point of dumping - rejected loads immediately removed from site.	Imported Materials Management Plan in place and all records / checklists up to date.
6.	Incidental waste that may later be discovered in imported materials are separated, sorted and removed from site.	Imported materials managed in accordance with the Imported Materials Management Plan.
7.	No imported material stockpiled outside of approved disturbance area	No stockpiles of imported material outside of approved disturbance area.
8.	Monitor imported material volumes	Imported material volumes monitored to ensure allowed limits are not exceeded

**ADVERTISED
PLAN**

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
30.	Impacts on the natural environment, including on surface and groundwater, from imported materials containing weeds or other contaminants	ALL	Unlikely	Minor	LOW
31.	Impacts on the natural environment, including surface and groundwater, from hazardous waste being imported to site	ALL	Unlikely	Minor	LOW
32.	Impacts on the natural environment, including surface and groundwater, from introducing soil-borne diseases to site	ALL	Unlikely	Minor	LOW

Monitoring

#	Aspect to be monitored	Details of monitoring
1	Source and characteristics of any imported material	The Imported Materials Management Plan requires documentation and records of material type, EPA waste classification, tonnages, source/suppliers, inspections and any subsequent remedial action or rejection.

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Operation and adequacy of Imported Materials Management Plan	Internally after monthly inspections	Implement required remedial actions
2.	Importation of non-conforming materials	Report to Quarry Manager on detection/event	Removal/disposal of non-conforming materials.
3.	Reportable Event under MRSDA	ERR / On event	Used to meet Work Authority holder's reporting obligations under the MRSDA

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	Imported Materials Management Guidelines for Mine and Quarry Operations (Earth Resources Regulations)	https://earthresources.vic.gov.au/legislation-and-regulations/guidelines-and-codes-of-practice

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	Risk Management Plans	Work Plan
2.	Imported Materials Management Plan	Site office
3.	WA and WP conditions	Site Office
4.	Planning permit conditions	Site Office

**ADVERTISED
PLAN**

2.11. Unauthorised Site Access

Scope

This risk treatment plan is to assess and manage the impacts from unauthorised access to the site and potential resulting impacts on the environment or sensitive receptors during quarry operations (ie set up / construction, operations/production and rehabilitation activities).

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site	How hazard may harm or damage Sensitive Receptor	Evidence to support assessment
1.	Public safety	Site may be accessible from public roads or adjoining property	Potential for unsupervised visitors to harm themselves	Proximity to site

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
33.	Unauthorised access to quarry faces/water bodies could result in personal injury	ALL	Unlikely	Critical	HIGH
34.	Unauthorised access to operating equipment or plant could result in personal injury	ALL	Possible	Critical	VERY HIGH

Quarrying Considerations

The operation adjoins sparsely occupied, private agricultural land, as well as other extractive industries and the Bass Gas plant. Primary site access is limited to the frontage to the South Gippsland Highway which will be signed and gated. Fencing, which will incorporate appropriate signage at intervals, is a combination of security fencing and farm fencing based on the adjacent land use. Additionally, a large screening bund will be constructed at an early stage along the entire frontage to the South Gippsland Highway, restricting access to the managed site entrance.

The likelihood of fatality for a member of the public is extremely remote. The quarry does not involve any falling hazard as there will be no steep faces exposed, and any drowning risk to members of the public is the same as applies wherever a water body exists, except that the public will not easily gain access to the pit lake on the site. The more likely hazard to any member of the public entering the site would be from operating equipment or plant.

Objectives

The key objectives of this risk treatment plan are to:

- Provide for the safety of members of the public when accessing a Work Authority area
- Prevent unauthorised access to the Work Authority area by members of the public

Compliance standards

The compliance standards for this risk treatment plan are:

- Safety on Public Land Act (2004)
- Work Authority Schedule of Conditions

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- Boundary of Work Authority area is appropriately marked and secured to minimise chances of unauthorised entry
- Safety signage is clearly visible around the boundary fence and at all access points

**ADVERTISED
PLAN**

Control measures to address hazard.

The controls for this risk treatment plan are:

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented –if not implicit in the control)
1.	Gates and fences of suitable design and standard. Access gates to be locked when site unattended	Fencing and gates in place and secured
2.	Signage on fencing warning of operations and high faces	Signage installed
2.	Equipment locked and secured when not in use.	Equipment locked when not in use
3.	Design and construct onsite roads to safely accommodate the size and type of vehicles accessing and travelling within the site. Separate any general traffic from any internal haul routes.	Traffic management implemented
4.	Visitor supervision	Visitor parking at WA entrance and Visitors record book maintained

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
33.	Unauthorised access to quarry faces/water bodies could result in personal injury	ALL	Rare	Critical	HIGH
34.	Unauthorised access to operating equipment or plant could result in personal injury	ALL	Unlikely	Critical	HIGH

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Boundary and site fencing integrity	Annual inspection of all site boundary fencing and gates.
2.	Site visitors	Visitors record book entries completed
3.	Unauthorised entries	Records kept of unauthorised entries

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Boundary and site fence integrity	Annual inspection, outcomes reported internally	To initiate remedial actions which will be documented in site record book.
2.	Visitor entries	Internal reporting to quarry management	Ensure all visitors have exited site prior to end of operating hours.
3.	Unauthorised entries (Site security breaches)	Internally reported to site management on event and regulatory authority as required	To improve site security to limit unauthorised site access.
4.	Reportable Event under MRSDA	ERR / On event	Used to meet Work Authority holder's reporting obligations under the MRSDA

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1	CMPA Traffic Management Guidelines	CMPA website

**ADVERTISED
PLAN**

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	Risk Management Plans	Work Plan
2.	WA and WP conditions	Site Office
3.	Planning permit conditions	Site Office

**ADVERTISED
PLAN**

2.12. Fuel, Lubricants and other Hazardous Materials

Scope

This risk treatment plan is to assess and manage the impacts from use and handling of fuel, lubricants and hazardous materials on and across the site and any potential impacts on the environment or sensitive receptors during quarry operations (ie set up / construction, operations/production and rehabilitation activities).

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site	How hazard may harm or damage Sensitive Receptor	Evidence to support assessment
1.	Surface waters	Melbourne Water asset DR2504	Hydrocarbon and/or chemical release to environment	Proximity to site
2.	Groundwater	Groundwater will be exposed within the excavation area	Hydrocarbon and/or chemical release to environment	Proximity to groundwater
3.	Environment	Adjacent land uses and immediate neighbours	Hydrocarbon and/or chemical release to environment	Proximity to site

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
35.	Fuel / oil leakage from equipment (mechanical failure, accident) resulting in impacts on the environment	ALL	Possible	Moderate	MEDIUM
36.	Spills / discharges whilst refuelling resulting in impacts on the environment	ALL	Possible	Moderate	MEDIUM
37.	Spills / damage to other chemical (eg flocculant) stores resulting in impacts on the environment	ALL	Possible	Moderate	MEDIUM

Quarrying Considerations

This risk treatment plan is for hydrocarbons, dust suppressants, flocculant, neutralising agents and other chemical storage. Other than hydrocarbons, there will only be limited use of hazardous chemicals at the site if or when conditions require (such as neutralising agents, herbicides, pesticides or copper sulphate). Flocculants used to settle and consolidate the slimes and dust suppressants are industry proven and accepted environmentally safe products. MSDS sheets for flocculants, dust suppressants, neutralising agents and any other chemicals used or stored on site will be maintained in the site office. All fuels will be stored or transported in commercially produced, fully compliant containments or tanks.

All hydrocarbon and chemical storage will be compliant to Australian Standards and Earth Resources Regulation requirements, and in accordance with EPA guidance.

The flocculants utilised in the slimes treatment will be included in the blended mix of overburden and consolidated slimes that will be deposited back into the water filled pit, where they will stay permanently.

Neutralising agents may be used, if necessary, in managing the pH of the sediment-laden water coming from the wash plant to the thickener by an automated dosing system to ensure that any acidity does not impact the effectiveness of the flocculants used in the thickener. The acidity of the water supply coming into the plant and water leaving the plant will also be monitored and treated if necessary to maintain, as far as practicable, approximately neutral conditions in the water storages. The water draining from stockpiles of consolidated slimes in the Processing and Stockpiling area or a Temporary Materials Storage and Handling area (Figure 3) will pass through a sediment / interceptor trap prior to returning to the in-pit water storage. Any need to apply neutralising agents, if there were acidic runoff, will be applied in a careful, measured manner at the sediment / interceptor trap.

Objectives

The key objectives of this risk treatment plan are to:

- Minimise the risk of industrial gasses, fuels and lubricants being released into the environment through leaks and spills

Compliance standards

The compliance standards for this risk treatment plan are:

- AS1940 – Storage and Handling of Flammable and Combustible Liquids
- Environment Protection Act 2017, or as amended (ie General Environmental Duty)
- EPA Publication 1823.1, June 2021: Mining and Quarrying – Guide to preventing harm to people and the environment
- EPA Publication 1698, June 2018: Liquid Storage and Handling Guidelines

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- Fuels and lubricants are stored appropriately and are not leaking or discharging
- Industrial gasses are stored appropriately and are not leaking or discharging

Control measures to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented –if not implicit in the control)
1.	Hydrocarbon storage in accordance with AS 1940 (The Storage and Handling of Flammable and Combustible Liquids) and the Dangerous Goods (Storage and Handling) Regulations 2022	Storage in accordance with the standards
2.	A contaminants spill kit available at all times when any minor servicing and/or simple maintenance tasks are undertaken on site.	Spill kits available
3.	Major servicing / repairs conducted at workshop in appropriately bunded area.	Workshop fitted with triple interceptor trap and water management structures
4.	Any areas where refuelling / minor servicing activities or flocculant use are being undertaken are drained to ensure no water leaves the site without first going through an interceptor trap	Surface drainage and other water management controls, directing to an interceptor trap, in place and effective.
5.	MSDS sheets readily available for all dust suppressants, flocculants, neutralising agents, herbicides, pesticides, copper sulphate and any other chemicals used or stored on site.	MSDS sheets for all chemicals used or stored on site maintained in the site office
6.	All chemicals stored in accordance with the EPA Liquid Storage and Handling Guidelines and relevant Australian Standards	Chemical storage in accordance with the guidelines, MSDS sheets and relevant standards

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
35.	Fuel / oil leakage from equipment (mechanical failure, accident) resulting in impacts on the environment	ALL	Unlikely	Moderate	MEDIUM
36.	Spills / discharges whilst refuelling resulting in impacts on the environment	ALL	Unlikely	Moderate	MEDIUM
37.	Spills / damage to other chemical (flocculant) stores resulting in impacts on the environment	O, R	Unlikely	Moderate	MEDIUM

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Integrity of fuel and chemical storages	Monthly site inspections
2.	Pollution controls and surface drainage effective and maintained.	Monthly site inspections

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Performance of fuel and chemical storages and surface drainage	Internally reported following monthly inspections	To initiate remedial actions which will be documented in site record book.
2.	Reportable Event under MRSDA	ERR / On event	Used to meet Work Authority holder's reporting obligations under the MRSDA

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	AS1940 – Storage and Handling of Flammable and Combustible Liquids	
2.	MSDS sheets for chemicals used or stored on site	

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	Risk Management Plans	Work Plan
2.	Site Layout Plan	Work Plan
3.	WA and WP conditions	Site Office
4.	Planning permit conditions	Site Office

**ADVERTISED
PLAN**

2.13. Pests, Weeds and Disease

Scope

This risk treatment plan is to assess and manage the impacts of weeds, pest animals and/or soil-borne disease on and across the site and any potential impacts on the environment or sensitive receptors during quarry operations (ie set up / construction, operations/production and rehabilitation activities).

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site	How hazard may harm or damage Sensitive Receptor	Evidence to support assessment
1.	Environment	WA and surrounding area	Weeds/pest species introduced or allowed to spread	Proximity to site
2.	Adjoining / neighbouring properties	Immediate adjoining land users	Weeds/pest species introduced or allowed to spread	Proximity to site
3.	Surface water / pit lake	Onsite pit	Potential to be impacted by algal blooms	Hydrogeological assessment

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
38.	Allowing weeds to spread from the site to neighbouring properties	ALL	Possible	Moderate	MEDIUM
39.	Harbouring pest animals	ALL	Possible	Moderate	MEDIUM
40.	Unsanitised plant / equipment introducing weeds / diseases	ALL	Possible	Moderate	MEDIUM
41.	Pit lake water becoming affected by blue-green algal blooms	O,R	Unlikely	Minor	LOW

Quarrying Considerations

This Risk Treatment Plan does not address weeds/pathogens contained in soils imported onto the site: all risks associated with imported material are discussed in the risk Imported Materials. This RTP addresses pest species and noxious weeds that may be present on the site or introduced to the site by environmental factors or unsanitised plant/equipment.

The primary objective is to ensure that weed problems do not develop and spread into adjoining land. Weed and pest animal control will be carried out in accordance with guidelines and standards. Any herbicide or pesticide use will be in accordance with the manufacturer's recommendations, including the most appropriate time to ensure effective control. The revegetation of progressively rehabilitated areas will also be regularly monitored for weeds and pest animals, ensuring that the rehabilitation objectives are achieved in accordance with the Rehabilitation Plan.

The site, which is located on a site of past farming activities, is actively managed to identify and mitigate the presence of weeds and pest animals.

There is some potential for blue-green algae to develop in the pit water body, however this is uncommon for such quarries and dependent on temperature and nutrient inputs, being more likely in summer. The impact would mainly be aesthetic, particularly at site closure, but if it occurs it is easily treated with copper sulphate dosing.

Objectives

The key objectives of this risk treatment plan are to:

- Protect biodiversity values associated with the Work Authority area
- Prevent site activities contributing to the proliferation of noxious weeds, plant diseases or pest animals, on or off the Work Authority area

Compliance standards

The compliance standards for this risk treatment plan are:

- Catchment and Land Protection Act (1994)
- Planning and Environment Act (1987)

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- Site operator complies with legislative requirements relating to the control and management of declared noxious weeds and pest animals
- The extractives operation does not contribute to the spread and proliferation of weeds, pest animals or soil-borne plant diseases
- No algal blooms within pit lake.

Control measures to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented –if not implicit in the control)
1.	Eradicate or manage any declared noxious weeds or established pest animals, including habitats, present on the Work Authority area.	Infestations of declared noxious weeds and established pest animals are eradicated or controlled. Any herbicide use will be in accordance with manufacturer's recommendations, including the most appropriate time to ensure effective control.
2.	Identify pest species habitats within the work authority boundary and remove refuge areas (burrows, hollow logs) where practicable and consistent with native vegetation protection requirements	Pest animal habitats are removed or destroyed
3.	Disinfect equipment moved from areas known or suspected to contain <i>Phytophthora cinnamomi</i> .	Hygiene procedures are in place and followed in areas with known or suspected <i>Phytophthora cinnamomi</i> presence.
4.	Limit vegetation clearing and surface disturbance activities to the minimum required operationally.	In accordance with Work Plan and Site Layout Plan
5.	Pit water body monitored for blue-green algal blooms and dosed with copper sulphate, if necessary	Any blue-green algal blooms detected and treated, in accordance with relevant guidance, to ensure that final rehabilitated pit lake remains free of blue-green algae
6.	Engage appropriately licenced personnel to conduct any required herbicide, pesticide or copper sulphate application to control weeds and/or pest animals.	Only licensed personnel are permitted to apply herbicides, pesticides or copper sulphate (for any necessary blue-green algae control)

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
38.	Allowing weeds to spread from the site to neighbouring properties	ALL	Unlikely	Moderate	MEDIUM
39.	Harbouring pest animals	ALL	Unlikely	Moderate	MEDIUM
40.	Unsanitised plant / equipment introducing weeds / diseases	ALL	Unlikely	Moderate	MEDIUM
41.	Pit lake water becoming affected by blue-green algal blooms	O,R	Rare	Insignificant	LOW

**ADVERTISED
PLAN**

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Site flora and fauna for weeds and pests.	6 Monthly site inspections (Spring & Autumn)
2.	Presence of blue-green algal blooms within pit water body	Annual inspection (Summer) for blue-green algal blooms within pit water body, in accordance with Groundwater Management Plan.

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Site flora and fauna for any weeds and pests.	6 Monthly inspections reported to quarry management.	To review and revise adequacy of control measures and trigger further actions.
2.	Blue-green algal blooms	Internal reporting	Management intervention

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	CMPA Noxious Weeds and Pest Animals Control Plan, Guideline and Template	CMPA website

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WP & Risk Management Plan	Work Plan
2.	Site Layout Plan	Work Plan
3.	WA and WP conditions	Site office
4.	Planning permit conditions	Site office

**ADVERTISED
PLAN**

2.14. Rubbish / General Waste

Scope

This risk treatment plan is to assess and manage the hazards associated with generated domestic rubbish and/or general waste on and across the site and any potential impacts on the environment or sensitive receptors during quarry operations (ie set up / construction, operations/production and rehabilitation activities).

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site	How hazard may harm or damage Sensitive Receptor	Evidence to support assessment
1.	Surface water	Melbourne Water asset DR2504	Potential for pollution of adjacent waterway	Proximity to site
2.	Adjacent land uses	Adjacent land and immediate neighbours	Potential for amenity loss or pollution to impact the adjacent land uses	Proximity to site

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
42.	Uncontrolled handling of domestic rubbish and general waste resulting in pollution of waterway and/or adjacent land	ALL	Possible	Minor	MEDIUM
43.	Loss of amenity through the poor handling of redundant plant and equipment	ALL	Possible	Minor	MEDIUM

Quarrying Considerations

The site will generate a small amount of domestic rubbish and general waste. Domestic rubbish includes toilet waste, office waste and food and paper waste from the office and amenities. General waste includes redundant / discarded plant and equipment, discarded conveyor belting, discarded screen decks, discarded tyres, discarded grease cartridges, discarded oil drums and oily rags. These materials will all be collected and periodically removed by contractors authorised to receive the wastes.

Objectives

The key objectives of this risk treatment plan are to:

- Prevent domestic rubbish and general waste generated by site activities from adversely affecting soil, water or other aspects of the environment
- Protect the beneficial uses of water and soil environment as defined in relevant State Environment Protection Policies (SEPPs)

Compliance standards

The compliance standards for this risk treatment plan are:

- Environment Protection Act 2017, or as amended (ie General Environmental Duty)
- EPA Publication 1741.1, October 2020: Industry guidance: supporting you to comply with the general environmental duty.

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- Soil, water and air within and near the Work Authority area are not detrimentally affected by the storage and/or management of domestic rubbish or general waste.

**ADVERTISED
PLAN**

Control measures to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented –if not implicit in the control)
1.	Protect waste storage areas from rainfall and stormwater and locate away from areas of protected habitat	Covered waste storage areas and/or bins
2.	Redundant / discarded oil, grease rags etc stored in sealed drums until removed	“Full” waste oil / grease, etc drums will not be stockpiled on site. Drums removed by contractors authorised to receive the waste
3.	No on-site disposal (or burning) of domestic rubbish and/or general wastes generated from site activities. Use of off-site services / facilities authorised to receive the generated wastes, for recycling or disposal	No domestic rubbish or general wastes disposed on-site
4.	Redundant Tyres / conveyor belting	Redundant / damaged/ discarded tyres and conveyor belting will be removed by the supplier as required
5.	Limit the volume and permitted timeframe for wastes to be stored onsite.	Waste materials not held on-site for more than 6 months.
6.	Provide covered bins for temporary on-site storage of domestic rubbish and/or general wastes	Sealed bins provided
7.	Toilet/Amenities fitted with chemical system or council approved septic system	Septic systems maintained as required and emptied by licensed contractor as required
8.	Redundant plant and equipment located where it cannot be seen from outside the site	Redundant plant & equipment not visible from public roads and removed from site if unattended for greater than 12 months

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
42.	Uncontrolled handling of domestic rubbish and general waste resulting in pollution of waterway and/or adjacent land	ALL	Unlikely	Minor	LOW
43.	Loss of amenity through the poor handling of redundant plant and equipment	ALL	Unlikely	Minor	LOW

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Amount of waste stored on site	Quantities, types and location of wastes stored on site as part of monthly site inspection and review
2.	Disposal of wastes to sites authorised to receive that waste	Register of contractors with appropriate authorisation

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	All waste stored on site	12 Monthly internal reporting and safety compliance audit.	To improve waste management and ensure appropriate collection cycles
2.	Reportable Event under MRSDA	ERR / On Event	Used to meet Work Authority holder's reporting obligations under the MRSDA

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WP & Risk Management Plan	Work Plan
2.	Site Layout Plan	Work Plan
3.	WA and WP conditions	Site office
4.	Planning permit conditions	Site office

ADVERTISED PLAN

2.15. Fire

Scope

This risk treatment plan is to assess and manage the impacts from bushfires burning onto the site and from fires igniting on-site and escaping the site and any potential impacts on the environment or sensitive receptors during quarry operations (ie set up / construction, operations/production and rehabilitation activities).

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site	How hazard may harm or damage Sensitive Receptor	Evidence to support assessment
1.	Biodiversity	Adjacent Properties	Damage/destruction to surrounding land and amenity	Historical exposure to wildfire
2.	Public safety	Site visitors and neighbouring residences	Serious injury / death	ERR directive
3.	Private property	Adjacent Properties	Damage/destruction to infrastructure or pastures	Historical exposure to wildfire
4.	Infrastructure	Bas Gas Plant	Damage/destruction to infrastructure	Proximity to site

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
44.	Uncontrolled fire could either enter or leave the site causing injury or damage	ALL	Possible	Critical	VERY HIGH
45.	Plant / machine / hot works igniting a wildfire	ALL	Possible	Critical	VERY HIGH

Quarrying Considerations

WA007541 consists entirely of cleared grazing land, bounded by further areas of cleared agricultural land and other extractive industries with light vegetation along boundary fence lines. The heavily vegetated Adams Creek Nature Conservation Reserve is located several kilometres to the north east, while the Bass Gas Refining Plant is immediately north east of the site. Potential exists for fire to enter or leave the site.

A site Fire Response and Readiness Plan (FR&RP) will be developed and will be reviewed and revised as part of standard operating practices.

Objectives

The key objectives of this risk treatment plan are to:

- Control potential sources of fire ignition and activities that could lead to fire ignition and escape on days of elevated fire danger
- Minimise environmental and human safety risks associated with fires burning onto a Work Authority area

Compliance standards

The compliance standards for this risk treatment plan are:

- Country Fire Authority Act and Regulations
- Planning and Environment Act (1987)
- EPA Publication 1667.3, June 2021: Management and storage of combustible recyclable and waste materials – guideline

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- Any fire initiating within the Work Authority area is contained within the site
- Grass bushfires burning onto the Work Authority area result in minimal environmental harm

Control measures to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance standards/measurements (specifying how the control is being implemented –if not implicit in the control)
1.	All vehicles well maintained and fitted with spark arrestors and fire extinguishers	Vehicles suitably equipped with fire extinguishers / knapsack spray packs as appropriate.
2.	No “hot works” undertaken on days of Total Fire Ban	No ignition sources (welding, oxy cutting) on Total Fire Ban Days
3.	Refuelling and servicing to be conducted in cleared hard stand areas within the extraction area.	All refuelling and vehicle servicing in accordance with procedures
4.	Monitor VicEmergency App / website, or similar, on days of extreme or catastrophic fire danger rating, or total fire ban days.	Record of engagement with agencies
5.	Liaising with CFA in times of extreme or catastrophic fire danger rating.	Record of engagement with agencies
6.	Fire Response and Readiness Plan in place.	Plan in place, documented and actioned
7.	Flammable and combustible wastes are removed from the site as soon as practicable	No flammable waste is stockpiled onsite

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
44.	Uncontrolled fire could either enter or leave the site causing injury or damage	ALL	Unlikely	Critical	HIGH
45.	Plant / machine / hot works igniting a wildfire	ALL	Unlikely	Critical	HIGH

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Site fire preparedness	Annual inspections will include an assessment of the site's preparedness for fire and be recorded in the Manager's Report Book
2.	Weather/fire warnings	Liaising with CFA in times of extreme or catastrophic fire danger rating.
3.	Total Fire Ban days	Quarry Manager and/or Site Supervisor monitors Radio / CFA warnings (via VicEmergency app / website, or similar)

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Site fire preparedness	Internally following annual inspections	Implement any remedial actions
2.	Ignition/fire	The CFA will be informed of any uncontrolled fire	Implement any remedial actions
3.	Reportable Event under MRSDA	ERR / On Event	Used to meet Work Authority holder's reporting obligations under the MRSDA

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1	CMPA Bushfire Response and Readiness Plan Template	CMPA website

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	Fire Response and Readiness Plan	Site office
2.	WP & Risk Management Plan	Work Plan
3.	Site Layout Plan	Work Plan
4.	WA and WP conditions	Site office
5.	Planning permit conditions	Site office

**ADVERTISED
PLAN**

2.16. Soil Biological Activity

Scope

This risk treatment plan is to assess and manage the impacts from soil stockpiles to maintain the biological activity and any potential impacts on the environment or sensitive receptors during quarry operations (ie set up / construction, operations/production and rehabilitation activities).

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site	How hazard may harm or damage Sensitive Receptor	Evidence to support assessment
1	On-site soils stockpiled for rehabilitation	On site soil stockpiles	Soil may become unfertile	DEWLP recommendation

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
46.	Unsuccessful rehabilitation due to poor soil biological activity	ALL	Likely	Minor	MEDIUM

Quarrying Considerations

The top 200mm (at least) will be stripped and stored separately as topsoil for rehabilitation. Topsoil is removed in planned campaigns and in suitable weather conditions to minimise adverse impacts before direct use in rehabilitation or being stored in low windrows or stockpiles. Initially some soil will be used in constructing the perimeter screening bund.

Soil stockpiles will be limited in height to not greater than 2m and will be located around the site within the disturbance area at sites close to extraction crests, close to where they will be used in rehabilitation. Soil stockpiles retained for more than 6 months will be contoured and stabilised to manage erosion. Topsoil in excess of rehabilitation requirements may be sold.

Objectives

The key objectives of this risk treatment plan are to:

- Protect existing soil structure, nutrient levels and biological activity in onsite soils
- Facilitate the rehabilitation of the quarry site by maintaining biological activity in stockpiled soils.

Compliance standards

The compliance standards for this risk treatment plan are:

- Catchment and Land Protection Act (1994).

**ADVERTISED
PLAN**

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- The health of biologically active soil is maintained while it is stockpiled and reused in rehabilitation.

Control measures to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented – if not implicit in the control)
1.	No soil stripping/removal when it is very dry.	Condition of soil maintained.
2.	Soil stockpiles height.	Stockpiles ≤ 2 m height.

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented – if not implicit in the control)
3.	Stabilise soil and overburden stockpiles (e.g. seeded / roughened / mulched) if they will not be disturbed for an extended period.	Soil and overburden stockpiles are stabilised within 6 months if not used in progressive rehabilitation.
4.	Soil layers, including any surface organic matter and any woody debris segregated and stockpiled separately	Topsoil and woody debris stockpile separately
5.	Imported soil checked/verified (via Imported Materials Management Plan) for pathogens and any disease.	Imported soils verified as pathogen and disease free

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
46.	Unsuccessful rehabilitation due to poor soil biological activity	ALL	Unlikely	Minor	LOW

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Maintenance of site soil stockpiles.	6 Monthly site inspections will be conducted and will include topsoil stockpiles. Inspections, and any required monitoring and remedial actions documented in site record book.

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1	Maintenance of site soil stockpiles.	Internally after 6 monthly inspections	Implement required remedial actions

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1	Rehabilitation Plans & Other Environmental Aspects of Work Plans	http://earthresources.vic.gov.au/earth-resources-regulation/licensing-and-approvals/minerals/guidelines-and-codes-of-practice/rehabilitation-and-environmental-aspects-of-mining-and-extractive-work-plans

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WP & Risk Management Plan	Site Office
2.	Site Layout Plan	Site Office
3.	WA and WP conditions	Site Office
4.	Planning permit conditions	Site Office

**ADVERTISED
PLAN**

2.17. Vehicle Sediment Transport

Scope

This risk treatment plan is to assess and manage the impacts associated with the carriage and deposition of dust, clay (mud) and sand by vehicles leaving the site, and subsequent deposition onto public roads, and any potential impacts on members of the public or sensitive receptors during quarry operations (ie set up / construction, operations/production and rehabilitation activities).

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site	How hazard may harm or damage Sensitive Receptor	Evidence to support assessment
1	South Gippsland Highway	Adjacent to the WA and the point of access and egress from the site.	Dust, mud or sand deposited on road	Proximity to site

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
47.	Dust, mud or sand carried onto public roads	ALL	Likely	Minor	MEDIUM

Quarrying Considerations

This site is accessed directly from the South Gippsland Highway. Some internal sealed roads and a wheel wash will be in place to address the potential for the deposition of extraneous material onto public roadways.

The adoption of standard quarrying controls such as no-go areas, vehicle movement and speed controls will also be implemented.

Objectives

The key objectives of this risk treatment plan are to:

- Avoid carriage of dust, clay (mud) or sand by vehicles leaving the Work Authority area.
- Prevent road safety issues from hazards associated with the deposition of dust and clay (mud) or sand onto external roads by traffic from the Work Authority area.

Compliance standards

The compliance standards for this risk treatment plan are:

- Planning and Environment Act 1979
- EPA Publication 1897, Sept 2020: Managing Truck and Other Vehicle Movement – Guidance sheet
- Planning Permit conditions

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- No complaints from local road users regarding road conditions
- Minimal dust and clay (mud) and sand carried by vehicles beyond the boundary of the Work Authority.

**ADVERTISED
PLAN**

Control measures to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance standards/measures (specifying how the control is being implemented –if not implicit in the control)
1.	Sealed access road	Sales vehicles use sealed road access and egress
2.	Water cart used on access road	Employ water cart on high temperature / windy days, or in response to complaints
3.	Internal traffic management (speed, no-go areas, etc)	Driver instruction and training
4.	Wheel wash	All departing sales trucks use wheel wash
5.	Clearing of loose dust / sediment from side rails, tailgates and drawbars of sales trucks before departing the site	All departing sales trucks cleared of loose dust / sediment that may be deposited on roads before departing the site
6.	Road truck loads properly covered / secured before leaving site and/or not over-filled, to prevent spillage	Driver instruction and training
7.	Management of sediment transport to public roads consistent with EPA guidance	Sediment transport offsite consistent with EPA guidance

Residual Risk Assessment

#	Details of the Risk Event	Phase	Unlikely	Consequence	Residual Risk Rating
47.	Dust, mud or sand carried onto on public roads	ALL	Possible	Minor	MEDIUM

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Dust, mud and sand deposition on surrounding roads	Daily observation
2.	Community complaints / concerns regarding spillage or dust	Publication 1823.1 June 2021 Mining and quarrying: <i>Guide to preventing harm to people and the environment</i> Complaints management/Community Engagement Plan

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Dust, mud or sand deposition on surrounding roads	Internal reports as required	To assess improvement or maintenance required
2.	Reportable Event under MRSDA	ERR / On Event	Used to meet Work Authority holder's reporting obligations under the MRSDA

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	CMPA Traffic Management Guidelines	CMPA website

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WA Work Plan & Risk Treatment Plan	Site office
2.	Work Plan Conditions / Planning Permit Conditions	Site office

**ADVERTISED
PLAN**

Rehabilitation Plan

for

Mineral Resources (Sustainable Development) Act

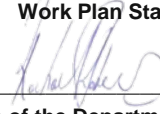
Extractive Industry Work Authority WA007541

Tenement Number: WA007541

Plan Number: PLN-001536

RRAM Designation:- PLN-001536

Work Plan Statutorily Endorsed

Signed: 
Delegate of the Department Head

WA007541 – Lang Lang Sand Resources Pty Ltd

Date: 26/05/2023



Lang Lang Sand Resources Pty Ltd
GM Strategy & Development:- Kelvin Sargent

Site Address: 5575 Sth Gippsland Highway, Lang Lang

Office: Suite 2 Level 1, 20 English St
Essendon Fields Vic 3041
Ph (03) 9408 0666 Mob 0402 534 467
kelvins@acm.com.au
www.acm.com.au

Project No. A25_005
February 2023

**ADVERTISED
PLAN**

Table of Contents

1. PURPOSE OF REHABILITATION PLAN.....	3
1.1. Overall Rehabilitation Objective	3
1.2. End Land Use.....	3
1.3. Rehabilitation Domains	4
2. REHABILITATION STRATEGY	5
2.1. Phases of Rehabilitation	5
2.2. Progressive Rehabilitation	6
2.3. Maximum Disturbed Area	7
2.4. Achievability of Rehabilitation Outcome	7
2.5. Rehabilitation Milestones	8
Milestone: Nearing Maximum Area of Disturbance at any Time	8
Milestone: 1 st Major review of pit lake design	9
Milestone: 2 nd Major review of pit lake design	10
Milestone: Resource Extraction Ceases	11
Milestone: Completion of Rehabilitation Activities	12
Site Closure	12
2.6. Schedule for Rehabilitation	12
Ongoing Progressive Rehabilitation.....	13
Final Rehabilitation Activities, Post Rehabilitation Phase and Closure.....	13
3. REHABILITATION LANDFORM DESIGN.....	15
3.1. Assets To Be Retained	15
3.2. Terminal Face Treatment.....	15
3.3. Pit Floor / Pit Lake Treatment	16
3.4. Dams and Constructed Works	17
3.5. Overburden Requirements.....	17
3.6. Surface Water Management	19
3.7. Imported Material.....	19
3.8. Site Fencing	19
3.9. Weeds and Pest Animals.....	20
3.10. Revegetation	20
4. ACHIEVING SITE CLOSURE	21
4.1. Rehabilitation / Closure Criteria	21
4.2. Rehabilitation Monitoring	22
4.3. Remedial Works	22
4.4. Identification of Post Closure Risks.....	23
5. REHABILITATION DOMAINS TABLE.....	31
6. REHABILITATION MANAGEMENT.....	49
6.1. Roles and Responsibilities	49
6.2. Documentation	49
6.3. Review	49

Revision History

Document Date	Description
Jun 2021	1 st draft of Rehabilitation Plan
Mar 2022	2 nd draft of Rehabilitation Plan
Mar 2022	1 st submission of Rehabilitation Plan to ERR
Aug 2022	2 nd submission of Rehabilitation Plan to ERR
Feb 2023	3 rd submission of Rehabilitation Plan to ERR

ADVERTISED
PLAN

1. PURPOSE OF REHABILITATION PLAN

This Rehabilitation Plan has been developed to address the requirements of Part 2 the Mineral Resources (Sustainable Development) (Extractive Industries) Regulations 2019, and in consideration of the Preparation of Rehabilitation Plans – Guideline for Extractive Industry Projects, March 2021, Version 1.0. This Rehabilitation Plan forms part of the Work Plan for the purposes of the *Minerals Resources (Sustainable Development) Act 1990* (MRSD Act).

The background for this extractive industry operation, including descriptions of the work, site setting, risk assessment and risk management are set out in detail in the other components of the Work Plan, with reference to the included drawings, particularly Figure 3 Site Layout Plan.

1.1. Overall Rehabilitation Objective

The overall objective of the Rehabilitation Plan is to leave the site in a manner that is:

- safe (is not likely to cause injury to visitors)
- stable (is structurally, geotechnically and hydrologically sound)
- sustainable (is non-polluting and aligns with the principles of sustainable development), and
- in a form suitable to the landowner for limited farming activities.

This objective and the end land use have been approved by Kelvin Sargent, GM Strategy & Development, of Lang Lang Sand Resources Pty Ltd, the holder of the Work Authority in agreement with the landowner. The objective is consistent with broader community and local stakeholder expectations, which are routinely and specifically canvassed through implementation of the site Community Engagement Plan.

The rehabilitation landform meeting this objective is represented as a concept plan on the included **Figure 4 Rehabilitation Landform**.

1.2. End Land Use

The excavation area will become a water body filling to approximately RL 19.3m with suitable areas outside the excavation returned to general farming activities, such as livestock grazing, consistent with the Farming Zone of the land.

The terminal quarry batters will be cut at a batter not steeper than 1V:3H, with a beaching zone, not steeper than 1V:5H, established at the final standing water level. A cut batter of 1V:2H will be established from below the beaching zone down to the base of the resource. The terminal batters above water level will be spread with topsoil and planted with suitable pasture grasses and, in the beaching zone, aquatic vegetation.

The northern waterway diversion will remain, as constructed, as a permanent waterway in the rehabilitated landform. This diverted waterway will be revegetated upon construction in accordance with Melbourne Water requirements. Water collecting on the rehabilitated landform that does not enter the waterway diversion will be directed to the water body.

Site access tracks around the property and pit crest will be retained to support the post-closure activities on the site. These tracks also provide access to the waterway diversion and the groundwater monitoring bores, as required by Melbourne Water and Southern Rural Water, respectively.

No additional planning permission is required for the proposed end land use for the rehabilitated site.

**ADVERTISED
PLAN**

1.3. Rehabilitation Domains

The rehabilitation treatment required across the site will differ for the various elements of the landform and how they have been affected by the extractive industry operation. The Regulations require that this Rehabilitation Plan set out distinct rehabilitation domains that collectively amount to the landform that will be achieved upon completion of the site rehabilitation.

Section 2 of the Rehabilitation Plan sets out the strategy for rehabilitation of the site throughout the entire life of the extractive industry operation.

Section 3 of the Rehabilitation Plan sets out the rehabilitation landform design, as shown in Figure 4 Rehabilitation Landform, for each of the key components of the site and how this rehabilitation work is to be undertaken.

Section 4 of the Rehabilitation Plan sets out how the rehabilitation objectives will be achieved with reference to the detail contained within Section 5 Rehabilitation Domains Table and areas outlined in Figure 5 Rehabilitation Domains Plan.

Section 6 of the Rehabilitation Plan sets out the overall management of the site rehabilitation.

**ADVERTISED
PLAN**

2. REHABILITATION STRATEGY

Rehabilitation for the whole site will not be a single linear process, as it will occur in parallel to extraction and processing activities for much of the quarry life, nor will the parallel rehabilitation processes follow consistent timelines for differing parts of the site.

Rehabilitation will be undertaken progressively throughout much of the quarry life, as far as reasonably practicable, i.e. without compromising the ability to work the site and the commercial viability of the operation. Once the resource extraction ceases there will be areas within the site, particularly within the extraction area, that will already be fully rehabilitated and the rehabilitation objectives satisfied.

The Rehabilitation Plan is a conceptual plan for rehabilitation and achieving site closure, based on present thinking and may be influenced in the future by changes in regulatory and/or community expectations, market forces, new technology or operational practice. Changes to the overall rehabilitation objective, as a result of matters raised by Earth Resources Regulation or by the local community through the Community Engagement Plan, will be discussed with Earth Resources Regulation to determine the most appropriate pathway forward under the relevant regulations applicable at that time.

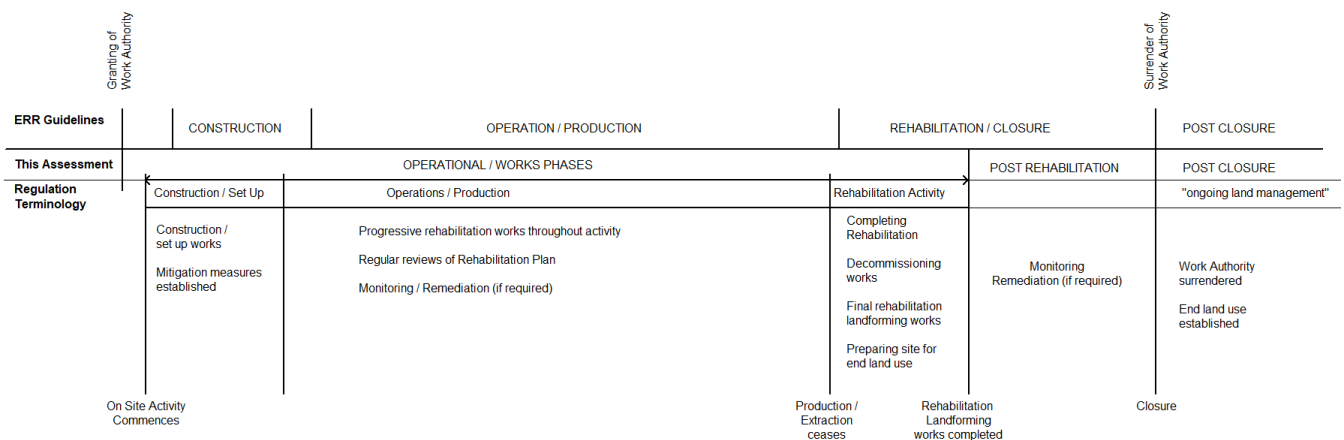
2.1. Phases of Rehabilitation

Rehabilitation for any particular part of the site will occur in a sequence of phases through the life of the quarry, and at any point in time the rehabilitation phase applicable to different parts of the site will differ.

The discussion of site rehabilitation presented in this document, along with any long-term risks associated with the rehabilitated land, aims to satisfy the Regulations while adopting extractive industry accepted norms, which do not neatly fit the requirements of the 2021 *Preparation of Rehabilitation Plans* guideline. A specific example of this is the use of the term “closure”. This is not a term commonly used in the extractive industries and not used in the applicable Regulations, but is used throughout the 2021 guidelines.

The term “closure” is used here to be the point in time, subsequent to completion of all rehabilitation works, when all the stated criteria have been satisfied to achieve the rehabilitation objectives for all rehabilitation domains, and thus allowing surrender of the Work Authority and return of the rehabilitation bond.

As is the case for the hazard identification and risk assessment process, set out in the Risk Management Plan, the rehabilitation at this site is in the context of the quarry life as represented in the following schematic, which includes the indicative rehabilitation sequence as it relates to any particular part on the site.



**ADVERTISED
PLAN**

2.2. Progressive Rehabilitation

Progressive rehabilitation will be undertaken throughout the Operational / Works phases of the quarry to minimise, as far as reasonably practicable, the disturbed area remaining open and unrehabilitated at any given time. Progressive rehabilitation, wherever possible, will be integrated into daily operations and, within the extraction area, will occur as soon as practicable after extraction, however this will not always be possible. Factors affecting the timing of progressive rehabilitation include (but are not limited to):

- the availability at any given time of suitable areas for rehabilitation across the site
- the availability at any given time of suitable material to undertake rehabilitation works
- climatic conditions and seasonal weather variation.

The rehabilitation of available segments of terminal face, including the placement of overburden, topsoiling and revegetation, can only occur after extraction limits have been reached, which requires the temporary stockpiling of soil and overburden material until required. As much as possible, overburden will be stockpiled within the excavation area, close to where it will be required for rehabilitation. The necessary stockpiling of soil and overburden will also limit the rehabilitation of those stockpiling areas until the stockpiled material can be utilised.

The volume of overburden available on the site and the cost of rehandling overburden, along with regulatory requirements, are prime drivers for commencing the progressive rehabilitation of terminal faces as soon as possible.

Progressive rehabilitation is undertaken with the following principles applied to meet the rehabilitation objectives:

- storing adequate topsoil for use in site rehabilitation
- storing adequate overburden in nominated stockpile areas for future use
- undertake rehabilitation of available areas as soon as practicable, including the topdressing and revegetating of upper terminal batters
- where possible, directly place overburden and topsoil in areas available for rehabilitation
- initially revegetate the final rehabilitated surfaces above the designed water level with pasture grass species, and aquatic species on the beaching zones, to stabilise the surfaces and manage erosion
- actively encourage establishment of vegetation on rehabilitated batters and identify and plant out any other suitable areas
- minimising, as far as reasonably practicable, the disturbed area remaining open and unrehabilitated at any given time (including rehabilitated areas that have not yet met the rehabilitation objectives)
- continually monitor and evaluate the effectiveness of rehabilitation and revegetation, and modify as necessary, to ensure the stated objectives for individual rehabilitation domains are being achieved
- divert all surface water areas away from the extraction area
- exclude stock from the rehabilitated upper batters / water body

To establish effective screening from nearby residences early in the operation the majority of the overburden from initial extraction stages will be used in constructing the screening bund along the South Gippsland Highway frontage and part of the eastern boundary. This bund will be progressively stabilised and revegetated at the earliest opportunity and will remain in place permanently as part of the rehabilitation landform. Therefore, no further rehabilitation works in relation to this bund will be required once the vegetation is fully established and the bund is stabilised.

The northern waterway diversion will also remain, as constructed, as a permanent waterway in the rehabilitated landform. This diverted waterway will be required to be revegetated upon construction in

accordance with Melbourne Water requirements. The waterway diversion is designed with floodwater storage and will perform an ongoing role in the management and control of surface water for the site and alleviating downstream flooding. Therefore, the diversion as constructed will remain in place post closure, as required by Melbourne Water, and no further rehabilitation works in relation to this diversion will be required once it is stabilised and fully established.

The proposed staging of extraction (Figure 3, Site Layout Plan) has been designed to allow early progressive rehabilitation of the northern and eastern terminal batters, above the groundwater level, to minimise the visual impact of the operations from the south and west.

The success of progressive rehabilitation will be regularly reviewed and any required changes in the rehabilitation strategy will be implemented as appropriate. The criteria for achieving the rehabilitation objectives for individual rehabilitation domains and the monitoring frequency, as presented in Section 5 Rehabilitation Domains Table, are applied for all progressive rehabilitation undertaken on the site.

2.3. Maximum Disturbed Area

The progressive development of the extraction area is provided schematically in Figure 3 Site Layout Plan.

Extraction will commence in the initial extraction area (Stage 1A1) to create a process water storage and excavation of the northern waterway diversion will commence at an early stage. The overburden from these areas will be used to commence constructing the screening bund adjacent to the South Gippsland Highway, the base for the processing plant / stockpile area and the internal haul roads.

As a general concept, the extraction stages will progress to the east of the initial extraction area and then proceed westward along the southern portion of the site. The last extraction stages (Stage 4A and 4B) in this concept will involve removing the last of the resource in the northwest of the site, with the final Stage 4B involving relocation of the processing and stockpiling area and removal of the above-ground ('turkey nest') dam. That part of this dam outside the extraction area will also be removed and the land returned to pasture. Once all extraction stages are complete, the insitu material in the walls retained around the initial extraction area will be removed and processed.

The total area to be disturbed by this operation, including all roads, hardstands, other earthworks and extraction areas, is estimated to be 84.3 hectares. In addition, 13.5ha is disturbed to establish the northern waterway diversion that remains as a permanent waterway in the rehabilitated landform, as required by Melbourne Water. However, as set out in Section 2.2, progressive rehabilitation will be undertaken as soon as practicable after extraction reaches terminal batters. Therefore, the total area at any given time that may require rehabilitation will be significantly lower than the total disturbed area.

The maximum disturbed area open and unrehabilitated at any given time is estimated to be approximately 58 hectares – including rehabilitated areas that will have not yet met the rehabilitation objectives. This estimate is also in consideration of the areas that will need to remain open for practical operational reasons (e.g. areas required for processing, stockpiling, water management, etc.). However, it should be noted that this includes 13.5 hectares to establish the northern waterway diversion early in the operation, which will be immediately rehabilitated and then remain as a permanent waterway in the rehabilitated landform.

2.4. Achievability of Rehabilitation Outcome

The rehabilitation of the quarry will be in accordance with the overall rehabilitation objective set out above, i.e. resulting in a landform that is safe, stable and sustainable, and in a form suitable for the intended end land use. The rehabilitated landform is designed to meet this objective, as shown in Figure 4 Rehabilitation Landform, and is found to be achievable on the basis of current knowledge that is supported by relevant technical assessments.

**ADVERTISED
PLAN**

Although the rehabilitation outcome is found to be achievable, with supporting technical assessments, there is some remaining uncertainty regarding the site's hydrogeological constraints, which cannot reasonably be resolved prior to commencing the proposed work. As extraction progresses more will be learnt about the hydrogeological conditions and allow these uncertainties to be resolved. Accordingly, two rehabilitation milestones have been implemented (Section 2.5) as major reviews to resolve these uncertainties prior to reaching defined points in the quarry development (triggers or gateways). These major reviews should provide assurance, based on increased knowledge, that the designed rehabilitation landform can be achieved and meet the overall rehabilitation objective, as accords with the current understanding. However, if it were determined that significant modifications to the rehabilitation landform would be necessary to meet the overall rehabilitation objective, unlikely based on current knowledge, then the Work Authority holder would seek a Work Plan variation, or other approval process as deemed appropriate at that point in time, to make the necessary changes.

If modifications to the rehabilitation landform were required then the alternative rehabilitation outcome would still need to form a safe, stable and sustainable landform. The stated triggers or gateways for major reviews as rehabilitation milestones are identified critical points in the development of the extraction pit (refer to individual Rehabilitation Milestones in Section 2.5), which will ensure that if modifications to the rehabilitation landform were required, then an alternative rehabilitation outcome could still be achieved that was safe, stable and sustainable.

ADVERTISED PLAN

2.5. Rehabilitation Milestones

As above, progressive rehabilitation will be undertaken throughout the life of the quarry to minimise, as far as reasonably practicable, the disturbed area remaining open and unrehabilitated at any given time. The progress of extraction for this quarry, as set out in Section 2.3, will involve continuous extraction across the defined extraction area. Given this, rehabilitation will be occurring at various parts within the site and each part will be at a different stage of rehabilitation, particularly the upper batters above the water level. The progress of rehabilitation will mainly depend on the availability of areas for rehabilitation, the availability of suitable materials for rehabilitation and the climatic / seasonal conditions at the time.

The commitment to mitigate visual impacts, particularly due to exposed batters along the northern and eastern sides of the pit, necessitates the early rehabilitation of the upper batters above the water level. Once extraction reaches the terminal limits for any stage the terminal batters will be progressively profiled to be consistent with the rehabilitation landform, and followed up with topsoiling and seeding within 3 months of completing the earthworks.

The quarry resource and the site's geotechnical constraints are all well understood and so are very unlikely to be an impediment to achieving the designed rehabilitation landform. Therefore, there are no clear points in the quarry development at which there would be any need to resolve any geotechnical uncertainties in order to ensure the designed rehabilitation landform would be achieved.

Progressive rehabilitation will be undertaken to ensure that the disturbed area remaining open and unrehabilitated at any given time will not exceed the estimated 58 hectares. Noting that:

- the maximum will occur in early stages of the quarry development with the constructed northern waterway diversion being immediately rehabilitated
- after initial disturbance most of the water body itself will not require any rehabilitation works.

The following milestones in the site rehabilitation ("significant event or step" in the Regulations) and associated actions have been identified:

Milestone: Nearing Maximum Area of Disturbance at any Time

Trigger / Gateway – nearing 58 hectares of disturbed area open and unrehabilitated at any given time (not including established areas of the pit waterbody)

- progressive rehabilitation activities will be increased as soon as possible, particularly within the extraction area, to ensure that the open and unrehabilitated area remains under 58 hectares.
- ensure progressive rehabilitation of segments of terminal batters has occurred as soon as practicable after extraction limits are attained – the treatment of these upper batters is detailed in Section 3.2.
- ensure rehabilitation of segments of terminal batter, as they become available, have included the placement of overburden (where necessary), the spreading of topsoil and revegetation.
- ensure progressively rehabilitated areas are being monitored for rehabilitation success and, where practicable, the rehabilitation objectives have been achieved within 3 years, and the rehabilitation monitoring continues at the planned year-three frequency with remedial actions, if necessary, to ensure the rehabilitation objectives are maintained.

Milestone: 1st Major review of pit lake design

Trigger / Gateway – prior to beginning extraction within the area of Stage 3 (refer to Figure 3, Site Layout Plan).

- undertake further hydrogeological assessment.
- reassess the predicted water level for the pit lake, for subsequent stages and in the long term, determining if the long-term water level could potentially exceed the lower western end of the pit or lower to such an extent that the backfill materials would be exposed.
- review pit lake rehabilitation design in consideration of reassessed pit lake water level.

The final rehabilitated pit lake within the excavation, as shown in Figure 4, is a design based on the findings of the hydrogeological investigations that have been undertaken, which found that the mean stabilised groundwater level will be about RL 19.3m and that it will fluctuate seasonally by up to 0.25m above and below that level. This factors in the effect of evaporation over the long-term (post closure), which modelling showed would lower the water level by only about 0.2m (see Section 3.3). These findings are based on certain assumptions made from the available information but there are some uncertainties in these hydrogeological assumptions that cannot reasonably be resolved prior to commencing the proposed work. As extraction progresses more will be learnt about the hydrogeological conditions, and this acquired knowledge will be captured in the site's adaptive Groundwater Management Plan (initial plan provided as Appendix F in attached Hydrogeological Assessment).

Ahead of the trigger / gateway being reached, it is expected that there will considerable additional data available to support the major review, from both the accumulated knowledge (Groundwater Management Plan) and any necessary further investigations, which may include additional groundwater monitoring bores. The review will reassess the proposed design for the rehabilitated pit lake, including the existing beaching zones design at RL 18-20m, which are based on the current understanding of the likely final lake level. The site's Groundwater Management Plan and Surface Water Management Plan will also be reviewed and revised, as necessary, as a result of this review.

Rehabilitation criteria in relation to completing the review for this rehabilitation milestone are included in Section 5 Rehabilitation Domains Table.

The trigger / gateway for this major review has been identified on the basis that it provides a point in the extraction staging where:

- a) the lowest crest of the extraction pit for Stage 2 (at about RL 23.5m) is similar to that for Stage 1 (excluding the separated in pit water storage) and predicted by the Hydrogeological Assessment to be greater than 2m above the mean water level at that stage, which will be well above the predicted final water level (RL 19.3m) for the completed pit; and
- b) only the upslope half of the final pit area will have been extracted, so the water level within the extraction pit will remain elevated and the total evaporative loss will only be at half its potential.

It is expected that the review will confirm that the existing rehabilitation design is likely to remain safe, stable and sustainable, and the beaching zones will not require any significant alteration to align with the likely stabilised pit lake level. Once this is confirmed, extraction will progress into Stage 3 and the rehabilitation of the terminal batters will continue as designed, although a small revision in the final water level can be accommodated with small adjustments to the constructed beaching zones.

In the unlikely event that this major review required the rehabilitation outcome to be modified, the identified trigger / gateway allows for alternative outcomes that can still produce a rehabilitated landform that is safe, stable and sustainable, based on the gained knowledge. In that event, a Work Plan variation, or other approval process as deemed appropriate at that time, can then be initiated to alter this Rehabilitation Plan. These alternative rehabilitation outcomes may include:

- redesign of the beaching zones and, if necessary, alternative disposal for some backfill material (i.e. not within the pit or offsite), in the event it was determined that at least 3m of water cannot be maintained over the backfill material in the long-term, as currently modelled, or there will be significantly more variability in the pit lake level than expected; or
- ceasing extraction earlier than planned (e.g. end of Stage 3), and modifying the beaching zones, if necessary, in accordance with the revised hydrogeological assessment for the long-term outcome; in the event it was determined that, for the existing design, at least 3m of water cannot be maintained over the backfill material in the long-term or the pit lake may overflow the lower pit crest; or
- modify the pit crest and adjacent waterway diversion design, including inlet and outlet structures to the pit lake, to capture peak / flood flows to maintain at least 3m of water over the backfill material in the long-term, with necessary approvals obtained for redirected flows, in the event it was determined that, for the existing design, at least 3m of water cannot be maintained over the backfill material in the long-term or the pit lake may overflow the lower pit crest.

Milestone: 2nd Major review of pit lake design

Trigger / Gateway – prior to beginning extraction within the area of Stages 4A or 4B (refer to Figure 3, Site Layout Plan).

- undertake further hydrogeological assessment, building on that undertaken for the 1st major review of the pit lake design.
- reassess the predicted water level for the pit lake, for subsequent stages and in the long term, determining if the long-term water level could potentially exceed the lower western end of the pit or lower to such an extent that the backfill materials would be exposed.
- review pit lake rehabilitation design in consideration of reassessed pit lake water level.

As above, the final rehabilitated pit lake within the excavation, as shown in Figure 4, is a design based on the findings of the hydrogeological investigations that have been undertaken, which found that the mean stabilised groundwater level will be about RL 19.3m and that it will fluctuate seasonally by up to 0.25m above and below that level. This factors in the effect of evaporation over the long-term (post closure), which modelling showed would lower the water level by only about 0.2m (see Section 3.3). These findings are based on certain assumptions made from the available information but there are some uncertainties in these hydrogeological assumptions that cannot reasonably be resolved prior to commencing the proposed work. As extraction progresses more will be learnt about the hydrogeological conditions, and this acquired knowledge will be captured in the site's adaptive Groundwater Management Plan (initial plan provided as Appendix F in attached Hydrogeological Assessment).

Ahead of the trigger / gateway being reached, it is expected that enough data will be available to provide certainty on the final stabilised pit lake level. Undertaking this second major review will build on the first major review, the accumulated knowledge (Groundwater Management Plan) and any necessary further investigations, which may include additional groundwater monitoring bores. The review will reassess the proposed design for the rehabilitated pit lake, including the existing beaching zones design at RL 18-20m, which are based on the current understanding of the likely final lake level. Again the site's Groundwater

Management Plan and Surface Water Management Plan will also be reviewed and revised, as necessary, as a result of this second review.

Rehabilitation criteria in relation to completing the review for this rehabilitation milestone are included in Section 5 Rehabilitation Domains Table.

The trigger / gateway for this major review has been identified on the basis that it provides a point in the extraction staging where:

- a) the lowest crest of the extraction pit for Stage 3 (at about RL 22m) remains about 2m above the lowest pit crest of the completed pit and is predicted by the Hydrogeological Assessment to be about 2m above the mean water level at that stage, which is still safely about 1m above the predicted final water level (RL 19.3m) for the completed pit (refer to Hydrogeological Assessment); and
- b) less than two thirds of the final pit area will have been extracted, so the total evaporative loss will be less than that occurring for the full open pit.

The Hydrogeological Assessment assesses the risk of overtopping at the end of Stage 3 as remaining low, even with the existing uncertainties in the model.

It is expected that the review will confirm that the existing rehabilitation design is likely to remain safe, stable and sustainable, and the beaching zones will not require any significant alteration to align with the likely stabilised pit lake level. Once this is confirmed, extraction will progress into Stage 4A and rehabilitation of the terminal batters will continue as designed, although a small revision in the final water level can be accommodated with small adjustments to the constructed beaching zones.

In the unlikely event that this major review required the rehabilitation outcome to be modified, the identified trigger / gateway allows for alternative outcomes that can still produce a rehabilitated landform that is safe, stable and sustainable, based on the gained knowledge. In that event, a Work Plan variation, or other approval process as deemed appropriate at that time, can then be initiated to alter this Rehabilitation Plan. These alternative rehabilitation outcomes may include:

- redesign of the beaching zones and, if necessary, alternative disposal for some backfill material (i.e. not within the pit or offsite), in the event it was determined that at least 3m of water cannot be maintained over the backfill material in the long-term, as currently predicted, or there will be significantly more variability in the pit lake level than expected; or
- ceasing extraction earlier than planned (e.g. end of Stage 3), and modifying the beaching zones, if necessary, in accordance with the revised hydrogeological assessment for the long-term outcome; in the event it was determined that, for the existing design, at least 3m of water cannot be maintained over the backfill material in the long-term or the pit lake may overflow the lower pit crest; or
- modify the pit crest and adjacent waterway diversion design, including inlet and outlet structures to the pit lake, to capture peak / flood flows to maintain at least 3m of water over the backfill material in the long-term, with necessary approvals obtained for redirected flows, in the event it was determined that, for the existing design, at least 3m of water cannot be maintained over the backfill material in the long-term or the pit lake may overflow the lower pit crest.

Milestone: Resource Extraction Ceases

Trigger / Gateway - all resource extraction has been completed.

- at completion of all extraction activities, progressive rehabilitation has been maximised, as far as practicable, with regular monitoring, remediation and reviews of the Rehabilitation Plan.
- final rehabilitation activities commence (final landforming, preparing site for end use and decommissioning works).

**ADVERTISED
PLAN**

Once the resource extraction ceases many areas within the site, particularly the terminal batters within the extraction area, will already be fully rehabilitated and the rehabilitation objectives satisfied.

At completion of all extraction activities, progressive rehabilitation across the site will have been maximised, as far as practicable. The success of the progressive rehabilitation will have been regularly monitored, and any necessary remediation undertaken or adjustments to the rehabilitation program implemented.

The final phase of major rehabilitation activities will commence, which involves works to finalise the rehabilitation landform, works to prepare the site for the intended end uses and decommissioning works to remove plant and infrastructure that is not to be retained. The processing of stockpiles, sales activity, etc, may continue for some time after resource extraction has ceased, therefore the decommissioning and removal of particular plant and infrastructure cannot occur until these activities have finished.

Milestone: Completion of Rehabilitation Activities

Trigger / Gateway - completion of all extractive industry activities and major rehabilitation activities.

- cessation of all extractive industry activities and completion of major rehabilitation activities (earthworks, planting, decommissioning works, etc.) on the site.
- post rehabilitation phase commences – monitoring for rehabilitation success, remediation (if required) and assessment against rehabilitation / closure criteria.

Once all resource extraction ceases, it is anticipated that all earthworks and decommissioning works involved in the final rehabilitation work will be achieved within 12 months. However, revegetation will be dependent upon environmental and practical factors.

After completion of all the major rehabilitation and decommissioning works there will be a period of post rehabilitation monitoring with maintenance and remediation works completed as necessary. This monitoring phase is to confirm that rehabilitation objectives are being met and will continue until all closure criteria have been achieved.

Site Closure

Site Closure is effectively the last rehabilitation milestone. As defined previously, the term “closure” is used here to be the point in time when all the rehabilitation objectives have been achieved, i.e. when all closure criteria have been met, for all the rehabilitation domains. Therefore, allowing surrender of the Work Authority and return of the rehabilitation bond.

Site Closure is achieved once the post rehabilitation monitoring demonstrates that all closure criteria have been met for all the rehabilitation domains, in accordance with Section 5 Rehabilitation Domains Table.

The current understanding of the hydrogeological conditions indicates that the mean stabilised water level for the completed pit will be at about RL 19.3m, with a seasonal fluctuation of up to 0.25m above and below that level. Therefore, beaching zones are to be established between RL 18m-RL20m. Subject to confirmation by further studies and the results of further groundwater monitoring at the above milestones (Major reviews of pit lake design), the existing information, in consideration of potential inflows and evaporation rates, supports that the pit lake is likely to remain safe, stable and sustainable in the long-term.

2.6. Schedule for Rehabilitation

As stated previously, rehabilitation for the whole site will not be a single linear process, as it will occur in multiple areas in parallel to extraction and processing activities for much of the quarry life, nor will the individual areas undergoing rehabilitation across the site follow consistent timelines. The timing of rehabilitation works and the progress through phases of rehabilitation will differ for most of the separate rehabilitation domains. This timing is dependent on a range of factors, including the practical limits on extraction sequencing, availability of overburden / waste rock at various stages of extraction, practical operational limitations (e.g. areas required to remain open for processing, stockpiling, water management,

etc.), the need to limit double handling costs, any need to undertake remedial measures for rehabilitated areas, seasonal / climatic conditions, and also external market forces.

Planning legislation prohibits the imposition of cessation dates on extractive industries, except in some urban situations, and allows for delays in starting the use of up to 5 years and the discontinuance of the use for up to 10 years, in recognition of the inherently variable nature of the market. Given that planning permission is effectively issued for the life of the resource and allows for a highly variable market, and the factors already mentioned regarding the realities of progressive rehabilitation, a schedule of rehabilitation activities can only be stated in relative terms.

Ongoing Progressive Rehabilitation

The planned timing of progressive rehabilitation for any particular part, or segment, of the site to be rehabilitated, where this can be practicably applied, is as follows:

- **As soon as practicable (depending on a range of factors):** Complete earthworks to achieve the rehabilitation landform for that part as the extraction sequence / quarry development allows, including the placement of overburden and topsoil.
- **Within 3 months of completing earthworks on a segment of upper terminal batter:** Initially stabilise segments of slope through seeding with pasture and/or brush matting, including undertaking any remedial works and spreading of additional soil, if necessary.
- **Within 12 months of the completed earthworks:** Initial pasture revegetation, where applied, will generally be established on rehabilitated segments of batters, which will be followed by seeding / fertilising with final vegetation species, as appropriate, being scattered trees and shrubs, however this is dependent upon environmental and practical factors.
- **Each Spring and Autumn (i.e. six monthly intervals):** Review and report vegetation status of rehabilitated segments, undertake any remedial earthworks necessary and supplement vegetation as appropriate.

Progressive rehabilitation will be carried out to ensure that the total disturbed area open and unrehabilitated at any given time will remain below 58 hectares throughout the life of the operation, including rehabilitated areas that will have not yet met the rehabilitation objectives.

Final Rehabilitation Activities, Post Rehabilitation Phase and Closure

Once all resource extraction ceases, the final rehabilitation activities will involve completion of final earthworks, final revegetation works and the decommissioning of any processing plant and/or other quarry infrastructure not identified as being retained post closure. This will be followed by a period of post rehabilitation monitoring and, where necessary, remediation until all the criteria for closure have been met.

At completion of all extraction activities progressive rehabilitation will have been maximised, as far as practicable, with regular monitoring for rehabilitation success, remediation and reviews against the Rehabilitation Plan. Therefore, significant areas of the site will have already met rehabilitation objectives with vegetation well established. It is anticipated that all earthworks and decommissioning works involved in the final rehabilitation activities will be achieved within 12 months. However, the time required for full establishment of vegetation on the remaining unvegetated landform will be dependent upon environmental and practical factors.

- **As soon as practicable after ceasing extraction:** Complete final earthworks and decommissioning works for remaining unrehabilitated areas to achieve the rehabilitation landform across the whole site, including the placement of overburden and topsoil.

Note: processing of stockpiles, etc. may continue for some time after extraction ceases.

- **Within 3 months of completing final earthworks and decommissioning:** Initially stabilise remaining unrehabilitated slopes through brush matting and/or seeding with pasture, including undertaking

any remedial works and spreading of additional soil where necessary, followed by later seeding / fertilising for final intended vegetation, as appropriate.

- ***Within 12 months of the completed earthworks and decommissioning:*** Initial pasture revegetation, where applied, will generally be established on remaining unrehabilitated batters, however, this will be dependent upon environmental and practical factors. Once initial pasture cover is established, seeding and fertilising with final vegetation species, as appropriate, will be undertaken (generally within the 12 months).
- ***Within 12 months of the completed earthworks:*** Any retained site infrastructure, hardstands, etc., prepared in accordance with requirements for end land use.
- **Post Rehabilitation Monitoring:** Continue monitoring of rehabilitation outcomes in accordance with the monitoring frequency, as presented in Section 5 Rehabilitation Domains Table, assessing against the criteria for closure to achieve the rehabilitation objectives for individual rehabilitation domains.
- ***Each Spring and Autumn (i.e. six monthly intervals):*** Review and report vegetation status of rehabilitation across the site, undertake any maintenance and remedial works, where necessary, including earthworks, supplementing vegetation as appropriate, and implementing any necessary remedial actions for site drainage and retained assets.
- ***Site Closure – Meeting Criteria for Closure:*** The post rehabilitation monitoring will continue until the criteria for closure have been met and the rehabilitation objectives achieved for all rehabilitation domains. This monitoring and maintenance period is planned to continue for at least three years. The post rehabilitation monitoring and remedial actions may continue for a longer period, if necessary, until the relevant authorities are satisfied. This period could potentially be shorter if all the closure criteria were to be met and the rehabilitation objectives achieved prior to the end of the planned three years.

Potentially, previously extracted areas that have been fully rehabilitated could be excised from the Work Authority at some future stage, where it is practical to do so. This could occur where it can be demonstrated that the rehabilitation objectives are achieved for those areas and that they are ready for the proposed end land use. This would allow a reassessment and potential reduction of the rehabilitation bond at that time for the ongoing extractive industry on the remainder of the Work Authority.

**ADVERTISED
PLAN**

3. REHABILITATION LANDFORM DESIGN

A conceptual, site wide plan of the Rehabilitation Landform is attached as Figure 4.

3.1. Assets To Be Retained

The land and the Work Authority upon application are owned by separate entities, however, there is a contract of sale in place with settlement in December 2023. After which the land and the Work Authority will both be owned by Lang Lang Sand Resources Pty Ltd.

The constructed infrastructure / assets to be retained are mainly associated with the screening mound and water management, as listed below. There will be no processing infrastructure retained post closure.

Assets to be retained include:

- Site access tracks around the property and pit crest providing access to the waterway diversion and the groundwater monitoring bores
- Visual screening bund (and any vegetation) to South Gippsland Highway
- Northern waterway diversion
- Water supply bores and monitoring bores for ongoing agricultural uses
- All perimeter fencing and any internal fencing established over the life of the resource.
- Bund and drain to extraction crest

It is estimated that approximately 1.8ha of internal tracks will be retained.

The constructed northern waterway diversion is designed with floodwater storage and will perform an ongoing role in the management and control of surface water for the site and alleviating downstream flooding. Therefore, the diversion as constructed will remain in place post closure as required by Melbourne Water.

The visual screening bund established along the South Gippsland Highway frontage and part of the eastern boundary will be will remain in place permanently as part of the rehabilitation landform. Vegetation will have been established on the bund at an early stage of the quarry development, with low shrubs and other vegetation on those parts of the bund nearest the relocated power line, so as to avoid the need for future lopping of the vegetation.

These features / assets are presented on Figure 4, Rehabilitation Landform. The total area of these retained assets is approximately 21.6ha. Additionally, the pit lake will occupy about 58.3ha in the rehabilitated landform.

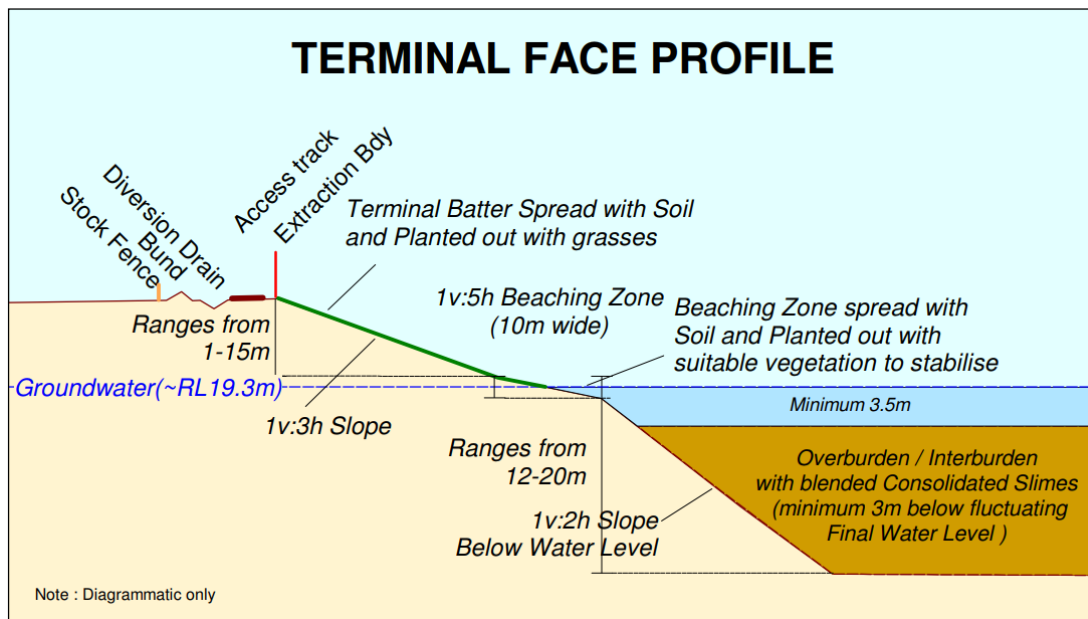
All mobile and/or any processing plant and equipment will be removed from the site.

3.2. Terminal Face Treatment

Terminal faces will be cut in insitu material and will not be constructed with backfill. Overburden and/or other unsaleable material may be used to level out or rehabilitate hardstand areas. The terminal batters will be cut from the surface to RL20m at a batter not steeper than 1V:3H. A beaching zone, not steeper than 1V:5H, will be established between RL18m-RL20m. A cut batter of 1V:2H will be established from RL18m down to the base of the resource.

Terminal faces above the designed water level will be rehabilitated as soon as practicable by placing, spreading and where necessary compacting suitable material. Where suitable, some consolidated slimes blended with overburden, interburden and plant oversize / waste may be used to aid rehabilitation of the

terminal extraction batters above water. Batter slopes will be lightly scoured, covered with minimum 200mm of topsoil and vegetated with pasture grasses within 3 months of completing the earthwork to aid in managing erosion and dust. The beaching zones will be planted with suitable aquatic species.



During the Operational / Works phases, a safety bund will be established around the crest of terminal faces. Such safety bunds will be remodelled into a small mound and swale drain once the final rehabilitation profile has been achieved. The purpose of this crest bund and drain is to prevent surface water from flowing over the rehabilitated batters and minimise the erosion potential on the batter.

A 1.2m standard stock-proof fence will be established behind the crest of terminal faces. These farm fences will be retained at closure. See Section 3.8 for further discussion.

ADVERTISED PLAN

3.3. Pit Floor / Pit Lake Treatment

The floor of the pit will be completely covered by groundwater resulting in the establishment of a pit lake. Overburden / interburden, with blended consolidated slimes material, will have been placed as backfill within the pit. Such material will have been deposited so that it will be at least 3m below the seasonal fluctuations in the water surface after the stabilisation of the water level.

The walls of insitu material around the in pit water storage will have been largely removed during the final phase of the quarry extraction. Any limited volume of slimes at its base will mix with the much greater volume of surrounding backfill material (i.e. overburden with blended consolidated slimes), which will have been deposited at the bottom of the water body throughout the operation. The surrounding backfill material will be moved into the space of the in pit water storage during the removal of the walls. All of these remaining materials will be greater than 3m below the seasonal fluctuations in the final, stabilised water surface.

The hydrogeological assessment (attached, undertaken by Nolan) estimates a mean pit lake level of RL 19.3m, based on the extraction through to the end of Stage 4, with a seasonal fluctuation of up to 0.25m above and below that level. Additionally, modelling conducted for this assessment showed that the effect of evaporation over the long-term (post closure) was to lower this water level by about 0.2m, bringing the final stabilised level down to about RL 19.3m. Beaching zones (as shown in the schematic above and on Figure 4) will be established between RL18m-RL20m, with a slope no steeper than 1V:5H, to mitigate any wave erosion risk. Additionally, the land immediately adjacent to the lower western end of the pit will have been raised by 1m due to the construction of a hardstand for the final stage of extraction, which, prior to closure, will be linked with a 1m high bund to be constructed around the remainder of the pit crest at the western end. This will effectively increase the freeboard of the final pit lake by an extra metre.

3.4. Dams and Constructed Works

There are no slimes storage dams or process water storages retained post closure. The pre-existing farm dam ('turkey nest' dam) will be entirely removed and that part outside of the extraction area returned to pasture. Slimes generated from the sand washing process will be consolidated and blended with overburden, interburden and plant oversize / waste and placed at least 3m below seasonal fluctuations in the final water level within the excavation, as partial backfill.

There will be no workshop, fuel stores, oil and grease stores, spare parts stores, amenities, weighbridge, offices, meeting room, laboratory, etc. remaining on the site.

Roads and tracks that might have been constructed as part of the works, other than those shown on Figure 4 Rehabilitation Landform, which are deemed unnecessary for the post closure land use will be removed / ripped and rehabilitated. Internal access tracks may be extended through the Work Authority buffer areas during final rehabilitation to provide practical linkages with existing external access tracks to facilitate post closure farming activities.

Hardstand and stockpile areas, that might have been constructed as part of the works and ultimately considered surplus to future farming use will be removed / ripped and rehabilitated.

The 5m high visual screening bund to the South Gippsland Highway is to be retained at closure. The screening bund is to be established early in the quarry development and rehabilitated as soon as practicable with topsoil and establishment of vegetation. Where suitable, some consolidated slimes blended with overburden, interburden and plant oversize / waste may be used to aid rehabilitation of the terminal extraction batters above water. The powerline will be permanently relocated along the southern boundary of the property and generally align with the outer toe of the screening bund. While there is no requirement forbidding the planting of trees and shrubs within the required 12m wide easement, it is proposed to limit plantings on the nearest parts of the screening bund to low shrubs to avoid the need for later lopping and maintenance. In accordance with AusNet Services advice relating to the relocation (attached to the Work Plan), there will be sufficient access retained (at least 10m) between the toe of the bund and the property boundary for any future maintenance of the relocated power poles.

The northern waterway diversion is also to be established early in the quarry development and rehabilitated as soon as practicable and then retained at closure, in accordance with Melbourne Water advice. In addition to excavating the shallow channel itself there will be some associated surficial disturbance at the margins to flatten the adjacent ground, which will also be rehabilitated as soon as practicable. Spoil from the construction of the waterway diversion, other than the topsoil, may also be used in constructing the visual screening bund. No further rehabilitation works in relation to this diversion will be required once it is stabilised, revegetated and fully established.

Water supply bores and monitoring bores will be retained for ongoing agricultural uses.

3.5. Overburden Requirements

The following estimates of material excavated have been obtained from the proposed pit design, the resource mapping, local site experience, and extrapolation.

The Fine-Medium Sand Resource contains interlayered clay/silt lenses (interburden) as well as layers of peat/organic material.

The total volume of the excavation is estimated at 14.3 million cubic metres – not including the area of shallow excavation for the northern waterway diversion (approx. 120,000 cubic metres).

**ADVERTISED
PLAN**

- **Soil:- 165,000 cubic metres:** the top 2-300mm of material is treated as soil and stockpiled (250mm has been used for estimate)
- **Overburden :- 2,600,000 cubic metres:** the next 3-7m of material is clayey granular material, easily diggable and has been classified as overburden. This layer varies considerably across the site from virtually zero in some areas to up to 7m in other areas. An average depth of 4m has been assumed across the extraction areas.
- **Fine-Medium sand:- 13,500,000 tonnes:** the upper levels of the resource is a fine-medium sand, with variable organic content/coatings.
- **Interburden material:- 2,500,000 cubic metres:** the resource is characterised by clayey / organic lenses and bands that occur throughout the deposit in varying thickness from 2-8m, averaging 3m of the total profile.

The volume of overburden required to construct the screening bund to the South Gippsland Highway is 150,000 cubic metres: 115,000m³ for the bund east of the site entrance and 35,000m³ for the bund west of the site entrance.

The volume of soil required to top dress the bund with a minimum 200mm of soil is 12,000m³: 9,000m³ for the bund east of the site entrance and 3,000m³ for the bund west of the site entrance.

The volume of soil required to dress disturbed areas outside the extraction area is 8,200m³ (4.1ha at 200mm) and the terminal batters down to RL20 is 9,200m³ (4.6ha at 200mm).

Given the excess balance of soil and overburden available to soil and overburden required for rehabilitation, some soil and overburden may be sold, blended with other materials on site or removed from the site, but will be continually monitored to ensure sufficient is available to achieve rehabilitation.

In addition to the identified overburden / interburden material, other sources of quarry waste material generated at the site include, but not limited to:

- Plant oversize / reject (estimated at approx. 3-5% of the primary raw feed (PRF))
- Unsaleable products
- Imported Material (clean fill)

ADVERTISED PLAN

Please Note:

- The timing of final treatment of the terminal faces occurs as soon as possible after extraction limits have been achieved and will initially require the temporary stockpiling of soil and overburden until required.
- The site has the potential to accept clean fill and in addition to other sources of plant waste this may result in the overall rehabilitation surface being at a higher level than proposed, or flatter batters than proposed, but will always be consistent with the overall rehabilitation objective.

Overburden / fill quantities will be continually monitored to ensure consistency with the rehabilitation objective, and if a significant deviation from the primary objective is observed the relevant authorities will be notified and the appropriate actions set in place.

Excess overburden and unsaleable material will be placed within the excavation area, initially on the surface until adequate excavated area has been established, then into worked out areas. Some excess overburden may also be blended with other materials for sale and use as select fill. Remaining stockpiles of overburden and oversize / reject material will be placed in the pit before closure, deposited at least 3m below the seasonal fluctuations in the final water's surface, and, apart from the screening bunds that are remaining in place, there will be no overburden stockpiles or oversize / reject dumps remaining post closure.

3.6. Surface Water Management

Through the Operational / Works phases surface water is managed to ensure run-off from disturbed areas (including roads, hard stand areas, stockpiles and waste rock dumps) is intercepted and directed back to the excavation. Thereby minimising the potential for dirty water run-off and erosion.

Surface water diversion bunding and swale drains associated with the excavation area will remain in place after rehabilitation and closure.

The northern waterway diversion directs surface water entering the property from the east around the disturbed areas to exit into the existing drainage line near the north-western corner of the property. This northern waterway diversion will be retained in the rehabilitated landform. The diversion is designed with broad areas for floodwater storage and the attached flood assessment and waterway diversion design by Spiire Australia Pty Ltd shows that it will easily prevent floodwaters from a 1%AEP event entering the excavation.

Water collecting in the sediment traps throughout the operating stages of the quarry will be used around the site for processing, dust suppression and irrigation. Sediment removed from sediment traps will be incorporated into products for sale or mixed with overburden or plant oversize / waste for use in site rehabilitation.

At closure, much of the surface water management infrastructure, consisting of swale drains and perimeter bunds will be retained in the rehabilitation landform, directing surface water away from the excavation, with only the incident rainfall collecting within the site directed to the retained pit lake.

3.7. Imported Material

Whilst the volume of overburden and plant waste material generated by the site is sufficient to fulfil the rehabilitation requirements (see Section 3.5), imported material may be used to supplement onsite rehabilitation or for commercial reasons. Any material imported for rehabilitation purposes will be limited to small amounts of topsoil or possibly mulch, but only if necessary to aid in the rehabilitation of areas that may be proving difficult to remediate. Imported sand, clean fill or soil may be used to blend with onsite material or products: i.e. coarse sand may be imported to blend with the sand resource, or clean fill /soil may be imported to commercial advantage.

The importation of any material will be in accordance with the Imported Fill Management Plan, which is developed in accordance with Earth Resources Regulation guidelines and Environment Protection legislation. The Imported Materials Management Plan will be regularly reviewed to continue meeting these guidelines and any other relevant guidelines issued by the Environment Protection Authority.

It is acknowledged that if “solid inert waste” were to be imported for “recycling” then separate planning permission would be required.

There will be no stockpiles of imported materials remaining on the site once rehabilitation is complete.

3.8. Site Fencing

The site has direct access to the South Gippsland Highway, hence this road frontage will be fenced and a screening mound constructed. This perimeter fence and screening mound will be retained post closure.

The Work Authority boundary and title boundary are coincident for most of the property, apart from an area in the northeast, that was removed from the Work Authority to avoid a ACHS trigger area. This area of the site, as will areas of the Work Authority not immediately required for extraction, will continue to be farmed but will be clearly identified with signage and temporary fencing as required to identify it as a no-go area for quarry operations.

All perimeter fencing and any additional fencing established for protection of vegetation, management of stock, or other activities, will be retained at the completion of operations if desired for ongoing farming activities.

The Rehabilitation Plan does not leave any steep or exposed faces, therefore no fencing or other security measures to the site’s perimeter are required post closure. However, a 1.2m standard stock-proof fence will be installed behind the crest of the pit and retained at closure. This farm fencing will be utilised in the ongoing use of the site for farming after closure.

Perimeter and any additional fencing established will be reviewed at the annual reviews as required, including during site rehabilitation.

3.9. Weeds and Pest Animals

The development of any weed or pest animal issues on the site will be monitored and managed on an ongoing basis at the quarry through to site closure, to satisfy the requirements of both Earth Resources Regulation and DELWP.

Spraying to control weeds will be undertaken using approved treatments and all pest animals will be controlled using approved methods.

There will be no legacy of the extractive industry related activity that poses a post closure risk of weeds, pest animals and/or soil-borne disease on the rehabilitated land.

3.10. Revegetation

The overall rehabilitation objective includes returning the site to a form suitable for ongoing farming / grazing activities, with any treed revegetation to be suitable initially as a visual screen and post closure as shelter for any livestock.

Whilst it is not planned to establish any specific areas of endemic native vegetation, it will be necessary throughout the life of the site to establish some perimeter planting / vegetation screens or windbreaks and to manage erosion. Based on hardiness and growth rate, the following species are recommended, but may be supplemented with other species as recommended by DELWP or other agencies. Note that no trees (only shrubs) are planned for the buffer and/or the adjacent parts of the bund to the South Gippsland Highway as this will be the location of the relocated power line.

Trees: (approx. 1000/ha)	Blue gum	Eucalyptus globulus	~100%
Shrubs: (approx. 1000/ha)	Black Wattle	Acacia mearnsii	~40%
	Common Cassinia	Cassinia aculeata	~30%
	Rough-barked Honey-myrtle	Acacia acinacea	~40%
Pasture:	Perennial grasses		~100%
Beaching Zone	Harding grass	Phalaris aquatica	~100%

The rehabilitated terminal batters, beaching zone and other disturbed areas will be fertilised and seeded with appropriate pasture grasses as soon as possible after extraction within respective areas. In due course, some of these areas may be incorporated into the general farming activities on the remainder of the site. A variety of re-vegetation methods may be required to establish a viable vegetative cover. Where appropriate short-term cover grasses may be established to stabilise topsoil stockpiles or other disturbed areas prone to wind or surface water erosion.

The conceptual plan of rehabilitation is presented on Figure 4 Rehabilitation Landform.

**ADVERTISED
PLAN**

4. ACHIEVING SITE CLOSURE

The Rehabilitation Domains Table in Section 5 outlines the criteria and monitoring to evaluate the success of the site’s rehabilitation program. These apply to the rehabilitation works carried out throughout the Operational / Works phases, i.e. the progressive rehabilitation works during the construction and production phases, and the final rehabilitation works completed toward the end of the site’s Operational / Works phases. The rehabilitation of the site has been designed such that the rehabilitated land will not, after closure, pose any risks to the environment, members of the public, or to land, property or infrastructure that would require ongoing monitoring, maintenance, treatment or land management.

4.1. Rehabilitation / Closure Criteria

The success of site rehabilitation will be regularly reviewed against stated criteria for individual rehabilitation domains that when met will demonstrate that the rehabilitation objectives have been achieved. The specific criteria and the monitoring frequency for assessing them are presented in Section 5 Rehabilitation Domains Table.

Progressive rehabilitation works will be ongoing throughout most of the quarry life, and will be particularly applicable to the rehabilitation of the terminal batters above groundwater level, and its success will be assessed against the relevant criteria for the rehabilitated parts of the site on an ongoing basis.

In line with rehabilitation objectives, a focus of the criteria during progressive rehabilitation of the various domains will initially be on measuring the success of the prevention of erosion within the extraction area and dirty water run-off from the disturbance footprint. These risks will be mitigated through cut off drains, vegetation establishment, strategic location of batter swale drains and other surface water management strategies as required.

Obtaining a quantitative measure of erosion from rehabilitated areas as erosion control measures / revegetation takes effect is difficult, therefore the erosion criteria presented in Section 5 Rehabilitation Domains Table are based on a qualitative (visual) assessment. The table below offers some generally accepted interpretations comparing quantitative soil losses to a visual assessment of any scouring on relatively uniform slopes (i.e. not involving concentrated flows).

Quantitative Assessment Soil Loss (RUSLE Equation or similar)	Qualitative / Visual assessment
Less than 5 tonnes per hectare per annum	Not noticeable to the naked eye
5-50 tonnes per hectare per annum	Scouring / erosion barely noticeable
50-200 tonnes per hectare per annum	Scouring typically up to 200mm wide and/or deep (criteria for rehabilitated batters not yet stabilised)
200-600 tonnes per hectare per annum	Scouring typically up to 5-600mm wide and/or deep

Other criteria will concentrate on the establishment and maintenance of the rehabilitated land for agricultural uses in applicable areas and ensuring the health and viability of the pit lake.

In addition to the criteria outlined in the Rehabilitation Domains Table it is understood that Earth Resources Regulation may, from time to time, require specific rehabilitation and/or site closure requirements, including any monitoring and reporting requirements. If there are additional requirements, they shall be documented appropriately (i.e. Trigger Action Response Plans / TARPs, etc.) and available for review on request.

**ADVERTISED
PLAN**

4.2. Rehabilitation Monitoring

Monitoring of rehabilitation success against the stated criteria, particularly progressive rehabilitation and through to the final rehabilitation works, is an integral part of the Operational / Works phases of the site, and will continue after completion of all rehabilitation works (i.e. the Post Rehabilitation phase). The rehabilitation monitoring will occur at varying frequency, generally decreasing over the first three years, until the stated criteria are met. The ongoing rehabilitation monitoring records will adopt the worksheets / proformas used throughout the Operational / Works phases.

Section 5 Rehabilitation Domains Table lists the rehabilitation / closure criteria and details the monitoring frequency over the initial three years for each rehabilitation domain, during both the Operational / Works phases (throughout production and final rehabilitation works) and the period following completion of rehabilitation works (post rehabilitation). Given the projected site closure is some decades in the future it is difficult to commit to a more specific rehabilitation monitoring program at this point-in-time. For those parts of the site where progressive rehabilitation has been completed and the rehabilitation objectives already achieved, the rehabilitation monitoring will continue at the planned year-three frequency to ensure the rehabilitation objectives are maintained. The monitoring program is the subject of constant review and, if required, increased monitoring can be adopted, or more effective criteria imposed, if it becomes apparent through the Operational / Works phases that the rehabilitation objectives are not being met.

After completion of all the major rehabilitation and decommissioning works there will be a period of post rehabilitation monitoring for the final rehabilitation works, with maintenance and remedial works completed as necessary. This final post rehabilitation monitoring program is designed to demonstrate that the criteria for closure have been met and that the rehabilitation objectives have been achieved for all rehabilitation domains. This monitoring phase will continue until the closure criteria have been met and is planned to continue for at least three years.

The post rehabilitation monitoring and remedial actions may continue for more than three years, if necessary, as could also be required by Earth Resources Regulation. If so, the monitoring will be conducted at the planned year-three frequency, or more frequently if required, until the relevant authorities are satisfied that all the closure criteria have been met. It is also possible that all the closure criteria could be met and the rehabilitation objectives achieved prior to the end of the planned three years, and then the Work Authority could be surrendered ahead of schedule.

A critical review of the rehabilitation monitoring program and effectiveness of the monitoring frequency and closure criteria will be undertaken either:

- some 5 years before the anticipated cessation of resource extraction, or
- when there is less than 8ha of undisturbed extraction area remaining (i.e. approx. 50% of Stage 4);

and will address all relevant matters to the satisfaction of all the relevant authorities at that time.

To ensure that the rehabilitation monitoring reflects the stated criteria the following activities will occur:

- auditing the site for remaining plant, machinery, scrap, rubbish, etc.
- measuring suspended solids in run-off from the site
- pasture establishment that is agriculturally viable.

4.3. Remedial Works

If criteria are not being met or rehabilitation is not satisfactorily progressing, based on the monitoring, maintenance and remedial activities will be undertaken to ensure criteria are met. Example situations would include, but not limited to:

**ADVERTISED
PLAN**

- Damage to fencing – repair fencing, investigate the cause, initiate additional measures as necessary (Note: perimeter fencing to be maintained up to site closure and then retained by agreement with landowner, but not required to manage any post closure risk associated with the rehabilitated land)
- Poor pasture development – investigate cause, engage agronomist for advice on pasture species, soil properties, fertiliser, remedial works as required
- Excessive weed presence – initiate one off weed eradication program, review weed management schedule and pasture development
- Excessive erosion – repair the area, review pasture development, review surface water management activities, consider more appropriate location of drains and/or culverts. Investigate alternative erosion control devices (e.g. rock armour, hay bales, vegetation).

4.4. Identification of Post Closure Risks

Hazards potentially associated with the rehabilitated land (post closure), as a consequence of the changes due to the extractive industry use, may pose long-term risks to the environment, members of the public, or to land, property or infrastructure. If such post closure risks are posed to these sensitive receptors and require monitoring, maintenance, treatment or any other ongoing land management activities, then these ‘relevant risks’ (as defined in the Regulations) must be identified and assessed in the Rehabilitation Plan.

The table below is from the Risk Management Plan and lists the hazards that are typically associated with extractive industries and rehabilitation works, with the last column specifically identifying the hazards potentially associated with the rehabilitated land (post closure). This list of hazards formed the basis of the hazard identification in relation to the whole proposal. Where such hazards are identified as being present, individual Risk Treatment Plans are provided for the Operational / Works phases in the Risk Management Plan. If the hazard is not present at the site then it is marked as such in the table below.

HAZARD	COMMENT	OPERATIONAL / WORKS PHASES		POST CLOSURE
		PRODUCTION & CONSTRUCTION	REHABILITATION ACTIVITIES	
Altered visual amenity		YES	YES	NO
Noise		YES	YES	NO
Dust		YES	YES	NO
Surface water flows		YES	YES	YES
Ground disturbance		YES	YES	NO
Ground instability		YES	YES	YES
Blasting	NOT PRESENT	NO	NO	NO
Erosion and sedimentation		YES	YES	YES
Process water and storages		YES	YES	YES
Slimes storage		YES	YES	YES
Imported materials		YES	YES	YES
Unauthorised site access		YES	YES	NO
Fuel, lubricants, other hazardous materials		YES	YES	NO
Weeds, pests and diseases		YES	YES	NO
Rubbish / general waste		YES	YES	NO
Fire		YES	YES	NO
Soil biological activity		YES	YES	NO
Vehicle sediment transport		YES	YES	NO

While there may be potential hazards associated with the rehabilitated land (post-closure), that relate to the past use of extractive industry, it firstly needs to be determined if such hazards would pose a risk that requires ongoing management after closure.

As detailed below for each hazard that is present, there will not be any 'relevant risks' (post closure) posed by the hazards potentially associated with the rehabilitated land that would require monitoring, maintenance, treatment or any other ongoing land management activities.

ADVERTISED PLAN

Altered visual amenity

The screening bund and vegetation established during the Operational / Works phases of the site will be retained post closure, however, as there is no activity proposed post closure that requires screening they are not required to manage any risk. There is no ongoing commitment, management or maintenance associated with the bund or any screening vegetation. By the time site closure comes around, the bunds and any screening vegetation will have been in place for several decades and become "part of the amenity" and removing them serves no purpose.

There is no post closure hazard posed by the rehabilitated land that requires visual screening. Therefore, no relevant risks will be posed to the environment, members of the public, or to land, property or infrastructure in the vicinity of the rehabilitated land that would require monitoring, maintenance, treatment or any other ongoing land management activities after closure.

Noise

There will be no ongoing vehicle or quarry related machinery operating post closure, with the Rehabilitation Plan preparing the site for a return to general farming on those parts not occupied by the water body.

There is no extractive industry related activity proposed post closure on the rehabilitated land that could generate noise. Therefore, no relevant risks will be posed to the environment, members of the public, or to land, property or infrastructure in the vicinity of the rehabilitated land that would require monitoring, maintenance, treatment or any other ongoing land management activities after closure.

Dust

There will be no ongoing vehicle or quarry related machinery operating post closure, with the Rehabilitation Plan preparing the site for a return to general farming, with no exposed or unvegetated areas at closure apart from the water body.

There is no extractive industry related activity proposed post closure on the rehabilitated land that could generate dust. Therefore, no relevant risks will be posed to the environment, members of the public, or to land, property or infrastructure in the vicinity of the rehabilitated land that would require monitoring, maintenance, treatment or any other ongoing land management activities after closure.

Surface water flows

The risks associated with this hazard occur as a result of surface water flows being modified or diverted during Operational / Works phases. The waterway permanently diverted in the north of the site early in the operation will be well established and any necessary remedial actions taken, to Melbourne Water's satisfaction, decades before site closure. The diversion design includes floodwater storage to mitigate any downstream flooding impacts, which is also a Melbourne Water requirement. So, it is concluded that there will be no risks from surface water flows, in relation to the waterway diversion, posed by the rehabilitated land post closure.

The hydrogeological assessment (attached, undertaken by Nolan) found that there was minimal risk of the pit lake level (RL 19.3m, with seasonal fluctuation up to 0.25m above and below that level), in consideration of potential inflows during high flow periods and evaporation rates, either exceeding the lower western end of the pit or lowering to such an extent that the backfill materials would be exposed. Modelling conducted for this assessment showed that the effect of evaporation over the long-term (post closure) was to lower the

lake water level by about 0.2m. The flood modelling by Spiire (refer to attached flood assessment and waterway diversion design) found that the proposed northern waterway diversion would easily accommodate a 1% AEP flood event without any overflow toward the pit. So, there will not be any external inflows to the pit during high flow periods and the lake level will be controlled by evaporation, therefore (subject to confirmation at the Major review milestones) it is very unlikely that the pit lake level would exceed the lower western end of the pit. Particularly given that the lower western end of the pit will effectively have an extra 1m of freeboard, prior to closure, due to the construction of the hardstand outside the pit, infill / rehabilitation of the former farm dam, and linkage between the two with a bund at the western pit crest.

The hydrogeological assessment (attached) also found that the occurrence of elevated turbidity in the pit water body, post closure, would be limited to inflow events, with associated risk of turbid water then flowing out of the site. However, as above, the flood modelling by Spiire shows that the waterway diversion would prevent any external inflows to the pit from that northern waterway, therefore inputs of elevated turbidity are not possible. Additionally, the hydrogeological assessment found that long-term salinity will depend on the net evaporative loss versus inflows and states that the lake level will be controlled by evaporation. The modelling long-term effect of evaporation found that it would have a minor impact and so the long-term salinity in the pit lake would likely reflect the salinity levels in the existing groundwater bores. If increased salinity and dropping water levels were to be detected during operations, then peak surface water flows could be directed into the pit (with appropriate authorisation).

The groundwater is likely to be naturally slightly acidic but the acidity could potentially be increased by exposure of acid producing materials during the quarry operations. However, during operations the exposure of such materials will be managed to minimise acidification. Together with the use of an isolated (walled off) in pit water storage to manage return waters from the processing and stockpiling areas, with the use of neutralising agents, as necessary, for water inputs and outputs from the plant as well as captured runoff, these measures will ensure that the water in the pit lake has not become acidified. If any blue-green algae is detected during operations then copper sulphate dosing will have been utilised to limit any further blooms.

With the above mitigation measures in place during the site operations, and with all site objectives achieved, the risks associated with surface water flows (including storm water) at closure will be very low and there will be no legacy of the extractive industry related activity that increases the post closure risk associated with surface water flows and flooding on the rehabilitated land. Therefore, no relevant risks will be posed to the environment, members of the public, or to land, property or infrastructure in the vicinity of the rehabilitated land that would require monitoring, maintenance, treatment or any other ongoing land management activities after closure.

Ground disturbance

The risks associated with the hazard of ground disturbance occur when disturbing the ground. Post closure there will be no quarry related ground disturbance, the northern waterway diversion, screening bunds and vegetation established in the initial stages of the operation will remain in place, and no additional ground will be required to be disturbed to achieve the rehabilitated landform. Any topsoil or overburden mounds will have been used in rehabilitation of the pit batters or used in partial backfill, and there will be no ongoing disturbance of groundwater or any potential acid producing materials within the pit, so there will not be any ground disturbance activity in association with extractive industry occurring post closure.

At closure all areas of ground disturbance will be fully rehabilitated and there will be no legacy of the extractive industry related activity that increases the post closure risk associated with ground disturbance on the rehabilitated land. Therefore, no relevant risks will be posed to the environment, members of the public, or to land, property or infrastructure in the vicinity of the rehabilitated land that would require monitoring, maintenance, treatment or any other ongoing land management activities after closure.

Ground instability

The majority of risks associated with the hazard of ground instability occur when excavating new ground. After completion of the final rehabilitation works some risk may still be present and a simple monitoring

program will be put in place. The rehabilitated landform will be monitored / inspected as per the Rehabilitation Plan with any recommendations and remediation implemented, or as directed by ERR.

Whilst some residual risk of ground instability remains post closure, it is concluded that given the competency of the cut terminal batters, the 1V:3H rehabilitated upper batters, and the erosion controls implemented, the likelihood of a failure is very low.

The ground instability risk at closure will be very low and there is no activity proposed post closure on the rehabilitated land that increases the risk of ground instability. Therefore, no relevant risks will be posed to the environment, members of the public, or to land, property or infrastructure in the vicinity of the rehabilitated land that would require monitoring, maintenance, treatment or any other ongoing land management activities after closure.

Erosion and sedimentation

Uncontrolled surface water flows have the potential to cause erosion on the rehabilitated landform, so this hazard could still exist post closure. The rehabilitated landform will have gentle (1V:3H) batters above groundwater, that will be covered in pasture grasses at closure and suitable for general farming. This landform is consistent with the surrounding land and ground cover. It is anticipated that when the rehabilitation objective of “pasture” has been achieved, the rehabilitated landform will be self-sustaining and erosion negligible. Some site drainage will be retained in the rehabilitated landform and any sedimentation that may occur, particularly as a result of any erosion on the rehabilitated batters, will be contained within the excavated landform and will not increase the risk to the surrounding environment.

The hydrogeological assessment (attached, undertaken by Nolan) found that there was minimal risk of the pit lake level (RL 19.3m, with seasonal fluctuation up to 0.25m above and below that level), in consideration of potential inflows during high flow periods and evaporation rates, either exceeding the lower western end of the pit or lowering to such an extent that the backfill materials would be exposed. Modelling conducted for the hydrogeological assessment showed that the effect of evaporation over the long-term (post closure) was to lower the lake water level by only about 0.2m. The flood modelling by Spiire (refer to attached flood assessment and waterway diversion design) found that the proposed northern waterway diversion would easily accommodate a 1% AEP flood event without any overflow toward the pit. So, there will not be any external inflows to the pit during high flow periods that could potentially disturb the backfill materials below the water’s surface and lead to turbid discharge from the pit lake.

The erosion and sedimentation risk at closure will be very low and there will be no legacy of the extractive industry related activity that increases the post closure risk of erosion and sedimentation on the rehabilitated land. Therefore, no relevant risks will be posed to the environment, members of the public, or to land, property or infrastructure in the vicinity of the rehabilitated land that would require monitoring, maintenance, treatment or any other ongoing land management activities after closure.

Process water and storages

Post closure the existing large (“turkey nest”) dam will have been removed due to the expanding extraction. If needed, any sediment collected in farm dams will be cleaned from the dams during the post rehabilitation monitoring phase and used to supplement site rehabilitation, prior to closure. The in pit water storage, within the initial extraction area, will be removed during the final phase of the quarry extraction by removing the retained walls of insitu material for processing.

The risk associated with process water and storage at closure will be very low and there is no activity proposed post closure on the rehabilitated land that increases this risk. Therefore, no relevant risks will be posed to the environment, members of the public, or to land, property or infrastructure in the vicinity of the rehabilitated land that would require monitoring, maintenance, treatment or any other ongoing land management activities after closure.

**ADVERTISED
PLAN**

Slimes storage

Post closure the only potential (limited) slimes storage remaining within the rehabilitated landform will be under water within the in pit water storage, within the initial extraction area, which will be largely removed during the final phase of the quarry extraction. As the in pit water storage acts as a contingency slimes storage, during plant establishment and break-downs, there may be a limited volume of slimes at its bottom. When the insitu earthen walls are removed the contained slimes will mix with the much greater volume of surrounding backfill material moved into the space, this material having been deposited in the water body throughout the operation. Any slimes that have been placed within the extraction area in the water body will be at least 3m below the seasonal fluctuations (0.25m above and below) in the final, stabilised water's surface. The capacity below RL 15.5m, down to the maximum extraction depth of 30m, below ground level, is approximately 9.0 million cubic metres, which is more than necessary to contain the volume of blended materials to be backfilled into the pit, including allowance for wetting of those materials.

The hydrogeological assessment (attached, undertaken by Nolan) found that there was minimal risk of the pit lake level (RL19.3m, with seasonal fluctuation up to 0.25m), in consideration of potential inflows during high flow periods and evaporation rates, either exceeding the lower western end of the pit or lowering to such an extent that the backfill materials would be exposed. Modelling conducted for this assessment showed that the effect of evaporation over the long-term (post closure) was to lower the lake water level by only about 0.2m. The flood modelling conducted by Spiire (refer to attached flood assessment and waterway diversion design) demonstrates that the northern waterway diversion would easily accommodate a 1% AEP flood event without any overflow toward the pit, so uncontrolled floodwaters will not enter the extraction area and cannot displace any contained slimes. Neither will the backfill materials become exposed due to a drop in lake level and potentially pose a risk to the public.

There will be no slimes storage structures remaining post closure and the Rehabilitation Plan will prepare the site for a return to general farming. The slimes deposited at the bottom of the water body below the water's surface, largely as consolidated slimes blended with overburden, interburden and plant oversize / waste, has no potential to be released into the environment or pose a risk to members of the public. Therefore, no relevant risks will be posed to the environment, members of the public, or to land, property or infrastructure in the vicinity of the rehabilitated land that would require monitoring, maintenance, treatment or any other ongoing land management activities after closure.

Imported materials

Any materials importation will be in accordance with the Imported Materials Management Plan and so it will be extremely unlikely that such imported materials incorporated into the site rehabilitation will pose any post closure risk. During the Operational / Works phases only clean fill', recycled inert aggregates or mulch, along with quarried sands for blending, could potentially have been imported to the site and used in constructing hardstands, etc or used in site rehabilitation. Additionally, there will be no stockpiles of imported materials remaining on the site once rehabilitation is complete.

The imported materials risk at closure will be extremely low and there will be no legacy of the extractive industry related activity that increases the post closure risk of imported materials on the rehabilitated land. Therefore, no relevant risks will be posed to the environment, members of the public, or to land, property or infrastructure in the vicinity of the rehabilitated land that would require monitoring, maintenance, treatment or any other ongoing land management activities after closure.

Unauthorised site access

Post closure the site will retain the established fencing. However, members of the public will no longer be at risk post closure as the rehabilitated landform will eliminate steep slopes and the potential for injury that will be present during the Operational / Works phases. The water filled extraction area will be analogous to the pre-existing large farm dam ('turkey nest' dam). While unauthorised site access by the public is still possible post closure, the public will not be at risk due to any past extractive industry on the site, sharing the same risk as the surrounding farm land with regard to unauthorised access. The fencing to be retained across the site is not required to manage any risk to the public.

There will be no legacy of the extractive industry related activity that poses a post closure risk to the public, due to unauthorised site access, on the rehabilitated land. Therefore, no relevant risks will be posed to the environment, members of the public, or to land, property or infrastructure in the vicinity of the rehabilitated land that would require monitoring, maintenance, treatment or any other ongoing land management activities after closure.

Fuel, lubricants, other hazardous materials

There will be no fuel, lubricants or hazardous materials stored on site post closure in association with extractive industry activities, with the Rehabilitation Plan preparing the site for a return to general farming, including the removal of any plant and equipment. Therefore, no relevant risks will be posed to the environment, members of the public, or to land, property or infrastructure in the vicinity of the rehabilitated land that would require monitoring, maintenance, treatment or any other ongoing land management activities after closure.

Weeds, pests and diseases

While weeds, pest animals and/or soil-borne disease are still possible on the site post closure, they will not be as a result of the past extractive industry on the site, sharing the same risk as the surrounding farm land. All landowners have an obligation to manage weeds, pest animals and/or soil-borne disease, and the rehabilitated landform does not introduce any new or additional risk that requires any additional controls beyond the monitoring and maintenance up to site closure that is set out in the Rehabilitation Plan.

There will be no legacy of the extractive industry related activity that poses a post closure risk of weeds, pest animals and/or soil-borne disease on the rehabilitated land. Therefore, no relevant risks will be posed to the environment, members of the public, or to land, property or infrastructure in the vicinity of the rehabilitated land that would require monitoring, maintenance, treatment or any other ongoing land management activities after closure.

Rubbish / general waste

There will be no ongoing requirement to manage rubbish and general waste post closure in association with extractive industry activities, with the Rehabilitation Plan preparing the site for a return to general farming, including the removal of any redundant / discarded plant and equipment. Therefore, no relevant risks will be posed to the environment, members of the public, or to land, property or infrastructure in the vicinity of the rehabilitated land that would require monitoring, maintenance, treatment or any other ongoing land management activities after closure.

Fire

While fire is still possible on the site post closure, it will not be as a result of the past extractive industry on the site, sharing the same risk as the surrounding farm land. All landowners have an obligation to manage the risk of fire, and the rehabilitated landform does not introduce any new or additional risk that requires any additional controls beyond that set out in this Risk Management Plan that apply up to site closure.

There will be no legacy of the extractive industry related activity that poses a post closure risk of fire on the rehabilitated land. Therefore, no relevant risks will be posed to the environment, members of the public, or to land, property or infrastructure in the vicinity of the rehabilitated land that would require monitoring, maintenance, treatment or any other ongoing land management activities after closure.

Soil biological activity

The biological activity of the soil stored in stockpiles will be maintained as much as possible to assist in achieving rehabilitation objectives, with the Rehabilitation Plan preparing the site for a return to general farming. There will be no ongoing soil storage post closure, with all stored soil used in the site rehabilitation. Therefore, no relevant risks will be posed to the environment, members of the public, or to land, property or infrastructure in the vicinity of the rehabilitated land that would require monitoring, maintenance, treatment or any other ongoing land management activities after closure.

**ADVERTISED
PLAN**

Vehicle sediment transport

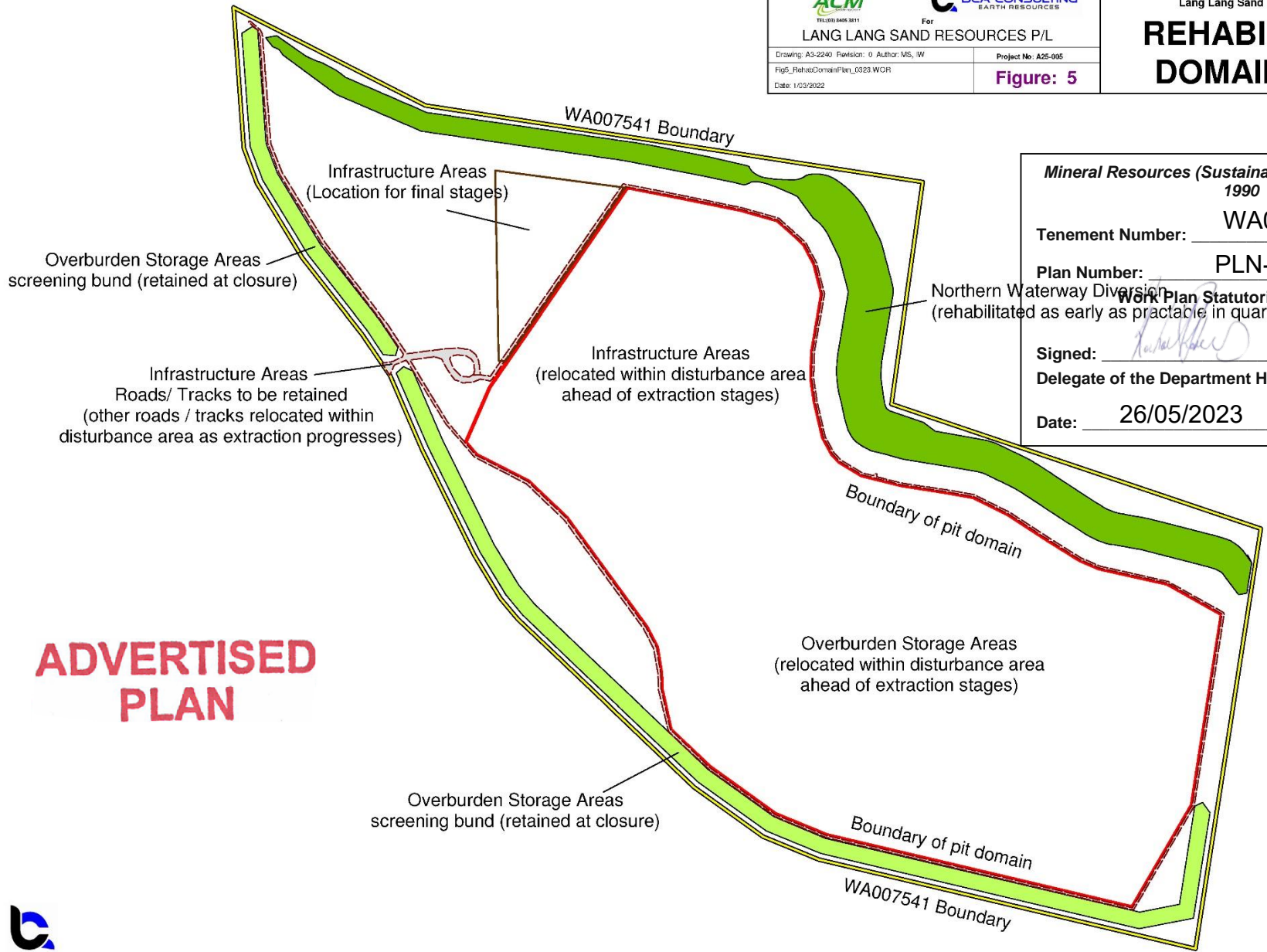
There will be no ongoing truck or vehicle movements post closure in association with extractive industry activities, with the Rehabilitation Plan preparing the site for a return to general farming. Therefore, no relevant risks will be posed to the environment, members of the public, or to land, property or infrastructure in the vicinity of the rehabilitated land that would require monitoring, maintenance, treatment or any other ongoing land management activities after closure.

**ADVERTISED
PLAN**

 TEL: 081 434 3111 For LANG LANG SAND RESOURCES P/L	 Project No: A25-095
Drawing: A3-2240 Revision: 0 Author: MS, W Fig5_RehabDomainPlan_0323 WOP Date: 1/03/2022	Figure: 5

Extractive Industry Work Authority No: WA007541
Lang Lang Sand Pit, LANG LANG

REHABILITATION DOMAINS PLAN




Mineral Resources (Sustainable Development) Act 1990

Tenement Number: WA007451

Plan Number: PLN-001536

Work Plan Statutorily Endorsed
(rehabilitated as early as practicable in quarry development)

Signed: 
Delegate of the Department Head

Date: 26/05/2023

**ADVERTISED
PLAN**



5. REHABILITATION DOMAINS TABLE

Domain: Infrastructure Areas Objective: At closure identified quarry infrastructure has been decommissioned and removed, with associated areas fully rehabilitated and (outside of the extraction area) suitable for use for general farming and animal husbandry.			
Subdomain	Rehabilitation / Closure Criteria	Elements to be Monitored	Monitoring Frequency
Administration Buildings	<p>Areas of Completed Progressive Rehabilitation: Any redundant areas amongst administration office, amenities, weighbridge, small buildings and light vehicle parking infrastructure will be rehabilitated as soon as practicable.</p> <p>Closure: Administration office, amenities, weighbridge, all small buildings, light vehicle parking infrastructure and surrounding areas will be removed, areas outside extraction area rehabilitated to viable pasture. Min 90% pasture establishment. No bare patches in pasture greater than 10m².</p>	<p>Record / photograph any redundant or derelict buildings.</p> <p>Record / photograph any weed infestation</p> <p>Visual estimate of pasture establishment (ground cover)</p> <p>General description of pasture vitality</p> <p>Record / photograph any bare patches</p>	<p>Ongoing Progressive Rehabilitation Annually review for any redundant areas that could be rehabilitated, aiding compliance with maximum disturbed area at any given time.</p> <p>Post Rehabilitation Phase Final decommissioning and removal of administration buildings Annually review adequate completion of decommissioning works. Pasture establishment Y1 - 3 Monthly Y2 - 6 Monthly Y3 - 12 Monthly (and further, if required)</p>
Workshops, Processing / Screening Plant	<p>Areas of Completed Progressive Rehabilitation: Any redundant workshop, fuel stores, oil and grease stores, and any associated buildings, containers and hardstands, will be rehabilitated as soon as practicable.</p> <p>Closure: Workshops and processing plant will be decommissioned and removed from site. No contaminated land remains on site. Workshop, fuel stores, oil and grease stores, and all associated buildings, containers and hardstands, including surrounding areas, will be removed will be rehabilitated to viable pastures. Min 90% pasture establishment No bare patches greater than 10m².</p>	<p>Record / photograph any redundant or derelict plant or infrastructure</p> <p>Presence of any contamination of land, remedial works undertaken, if necessary. Visual estimate of pasture establishment (ground cover)</p> <p>General description of pasture vitality</p> <p>Record / photograph any bare patches</p> <p>Record / photograph any weed infestation</p>	<p>Ongoing Progressive Rehabilitation Annually review for any redundant areas that could be rehabilitated, aiding compliance with maximum disturbed area at any given time.</p> <p>Post Rehabilitation Phase Final decommissioning and removal of infrastructure Annually review adequate completion of decommissioning works. Pasture establishment Y1 - 3 Monthly Y2 - 6 Monthly Y3 - 12 Monthly (and further, if required)</p>

Domain: Infrastructure Areas

Objective: At closure identified quarry infrastructure has been decommissioned and removed, with associated areas fully rehabilitated and (outside of the extraction area) suitable for use for general farming and animal husbandry.

Subdomain	Rehabilitation / Closure Criteria	Elements to be Monitored	Monitoring Frequency
Product Stockpile Area(s) and any Associated Hardstands	<p>Areas of Completed Progressive Rehabilitation: Any redundant product stockpile areas, including any associated hardstands, will be rehabilitated as soon as practicable.</p> <p>Closure: All stockpiles removed and any hardstands outside extraction area rehabilitated to viable pastures Min 90% pasture establishment No bare patches greater than 10m².</p>	<p>Visual estimate of pasture establishment (ground cover) General description of pasture vitality Record / photograph any bare patches Record / photograph any weed infestation</p>	<p>Ongoing Progressive Rehabilitation Annually review for any redundant areas that could be rehabilitated, aiding compliance with maximum disturbed area at any given time.</p> <p>Post Rehabilitation Phase Final removal of stockpiles and hardstands. Annually review adequate completion of decommissioning works. Pasture establishment Y1 - 3 Monthly Y2 - 6 Monthly Y3 - 12 Monthly (and further, if required)</p>
Access Roads / Tracks	<p>Areas of Completed Progressive Rehabilitation: Any redundant roads and tracks will be rehabilitated as soon as practicable.</p> <p>Closure: All redundant roads and tracks (in excess of approx. 1.8ha to be retained) rehabilitated to viable pastures. Min 90% pasture establishment. No bare patches greater than 10m².</p>	<p>Visual estimate of pasture establishment (ground cover) General description of pasture vitality Record / photograph any bare patches Record / photograph any weed infestation</p>	<p>Ongoing Progressive Rehabilitation Annually review for any redundant roads / tracks that could be rehabilitated, aiding compliance with maximum disturbed area at any given time.</p> <p>Post Rehabilitation Phase Final removal of roads and tracks that are not to be retained. Annually review adequate completion of road / track decommissioning works. Pasture establishment Y1 - 3 Monthly Y2 - 6 Monthly Y3 - 12 Monthly (and further, if required)</p>
Roads / Tracks Retained post closure (see Sec 3.1)	<p>Closure: Main site access and internal site access tracks (totalling approx. 1.8ha) retained. Surfaces of site access road and internal tracks maintained to standard acceptable for end use. Edge drains to roads and tracks in good repair and effectively managing surface water flows.</p>	<p>General description of retained road and track surfaces and edge drains Record / photograph typical sections</p>	<p>Post Rehabilitation Phase Annually for general condition.</p>

**ADVERTISED
PLAN**

Domain: Infrastructure Areas

Objective: At closure identified quarry infrastructure has been decommissioned and removed, with associated areas fully rehabilitated and (outside of the extraction area) suitable for use for general farming and animal husbandry.

Subdomain	Rehabilitation / Closure Criteria	Elements to be Monitored	Monitoring Frequency
Infrastructure Areas (Erosion)	<p>Areas of Completed Progressive Rehabilitation:</p> <p>No erosion channels greater than 50mm deep and/or wide on any progressive rehabilitation.</p> <p>No more than 5 erosion channels greater than 20mm deep and/or wide within a 20m wide area on any progressive rehabilitation.</p> <p>Any necessary remedial rehabilitation undertaken as soon as practicable.</p> <p>Closure:</p> <p>No erosion channels greater than 50mm deep and/or wide on any rehabilitated infrastructure areas.</p> <p>No more than 5 erosion channels greater than 20mm deep and/or wide within a 20m wide area on any rehabilitated infrastructure areas.</p>	<p>Visual inspection for erosion channels, recording depth, width and number of any channels and photographed for follow up.</p>	<p>Ongoing Progressive Rehabilitation</p> <p>6 Monthly.</p> <p>Additional inspections after significant rainfall events.</p> <p>Post Rehabilitation Phase</p> <p>Y1 - 2 Monthly</p> <p>Y2 - 3 Monthly</p> <p>Y3 - 6 Monthly (and further, if required)</p> <p>Additional inspections after significant rainfall events.</p>
Infrastructure Areas (Surface Water Controls)	<p>Areas of Completed Progressive Rehabilitation:</p> <p>No turbid water leaving progressively rehabilitated infrastructure areas.</p> <p>Any necessary remedial rehabilitation undertaken as soon as practicable.</p> <p>Closure:</p> <p>No turbid water leaving any rehabilitated infrastructure areas.</p>	<p>Visual inspection for water quality, specific monitoring as per Surface Water Management Plan</p> <p>Water quality in accordance with the Water Quality Criteria for Farm Water Supplies as per Agriculture Victoria’s recommendations or specific CMA requirements</p>	<p>Ongoing Progressive Rehabilitation</p> <p>Monthly visual inspection</p> <p>Additional inspections after significant rainfall events.</p> <p>Post Rehabilitation Phase</p> <p>Y1 - 1 Monthly</p> <p>Y2 - 6 Monthly</p> <p>Y3 - 12 Monthly (and further, if required)</p> <p>Additional inspections after significant rainfall events.</p>

**ADVERTISED
PLAN**

Domain: Overburden Storage Areas

Objective: At closure all overburden stockpiles and oversize / reject dumps have been removed with associated areas fully rehabilitated and (outside of the extraction area) suitable for use for general farming and animal husbandry.

Subdomain	Rehabilitation / Closure Criteria	Elements to be Monitored	Monitoring Frequency
Overburden Mounds	<p>Areas of Completed Progressive Rehabilitation: Any redundant overburden mound areas will be rehabilitated as soon as practicable.</p> <p>Closure: All overburden mounds (apart from retained perimeter bund) removed or used in rehabilitation and land rehabilitated to viable pastures. Min 90% pasture establishment No bare patches greater than 10m².</p>	<p>General description of overburden mounds Record / photograph overburden mounds Visual estimate of pasture establishment (ground cover) General description of pasture vitality Record / photograph any bare patches</p>	<p>Ongoing Progressive Rehabilitation Annually review for any redundant areas that could be rehabilitated, aiding compliance with maximum disturbed area at any given time.</p> <p>Post Rehabilitation Phase Upon completion of rehabilitation landforming works. Pasture establishment Y1 - 3 Monthly Y2 - 6 Monthly Y3 - 12 Monthly (and further, if required)</p>
Oversize / Reject Dumps or Imported Materials Stockpiles	<p>Areas of Completed Progressive Rehabilitation: Any redundant oversize / reject dump areas or any redundant imported materials stockpile areas will be rehabilitated as soon as practicable.</p> <p>Closure: All oversize / reject dumps, including any associated hardstands, removed or used in rehabilitation and land rehabilitated to viable pastures. Any stockpiles of imported materials, including any associated hardstands, removed or used in rehabilitation and land rehabilitated to viable pastures. Min 90% pasture establishment No bare patches greater than 10m².</p>	<p>General description of oversize / reject dumps and any imported materials stockpiles Record / photograph oversize / reject dumps and any imported materials stockpiles Visual estimate of pasture establishment (ground cover) General description of pasture vitality Record / photograph any bare patches</p>	<p>Ongoing Progressive Rehabilitation Annually review for any redundant areas that could be rehabilitated, aiding compliance with maximum disturbed area at any given time.</p> <p>Post Rehabilitation Phase Upon completion of rehabilitation landforming works, then annually. Pasture establishment Y1 - 3 Monthly Y2 - 6 Monthly Y3 - 12 Monthly (and further, if required)</p>

**ADVERTISED
PLAN**

Domain: Overburden Storage Areas

Objective: At closure all overburden stockpiles and oversize / reject dumps have been removed with associated areas fully rehabilitated and (outside of the extraction area) suitable for use for general farming and animal husbandry.

Subdomain	Rehabilitation / Closure Criteria	Elements to be Monitored	Monitoring Frequency
<p>Screening Bunds Retained post closure (see Sec 3.1)</p>	<p>Areas of Completed Progressive Rehabilitation: Screening bunds graded and profiled to design. Viable pasture / screening vegetation established on bunds as soon as practicable after construction. Min 90% pasture establishment or min 80% overstorey vegetation establishment with a min 70% understorey vegetation established. No bare patches greater than 10m². Any necessary remedial rehabilitation undertaken as soon as practicable.</p> <p>Closure: Screening bunds (approx. 6.2ha) maintained in good repair with viable vegetation established. Min 90% pasture establishment or min 80% overstorey vegetation establishment with a min 70% understorey vegetation established. No bare patches greater than 10m².</p>	<p>Effectiveness of screening bunds in screening site operations (prior to final site rehabilitation). Visual estimate of pasture / screening vegetation establishment. General description of vegetation vitality / species survival Visual inspection for condition of swale drains. Record / photograph any bare patches Record / photograph condition of swale drains.</p>	<p>Ongoing Progressive Rehabilitation 3 Monthly following completion of construction works until initial pasture established. Then 6 monthly until vegetation fully established and erosion minimised. Additional inspections after significant rainfall events until vegetation fully established. Annually review for any need to remediate bund faces or planted vegetation.</p> <p>Post Rehabilitation Phase Y1 – 3 Monthly Y2 – 6 Monthly Y3 - 12 Monthly (and further, if required)</p>
<p>Overburden Storage Areas (Associated Tracks)</p>	<p>Closure: All tracks associated with overburden storage areas rehabilitated to viable pastures. Min 90% pasture establishment No bare patches greater than 10m².</p>	<p>Visual estimate of pasture establishment (ground cover) General description of pasture vitality Record / photograph any bare patches</p>	<p>Post Rehabilitation Phase Final removal of access tracks for overburden storage area. Annually review adequate completion of track decommissioning works. Pasture establishment Y1 - 3 Monthly Y2 - 6 Monthly Y3 - 12 Monthly (and further, if required)</p>

ADVERTISED PLAN

Domain: Overburden Storage Areas

Objective: At closure all overburden stockpiles and oversize / reject dumps have been removed with associated areas fully rehabilitated and (outside of the extraction area) suitable for use for general farming and animal husbandry.

Subdomain	Rehabilitation / Closure Criteria	Elements to be Monitored	Monitoring Frequency
<p>Overburden Storage Areas (Erosion)</p>	<p>Areas of Completed Progressive Rehabilitation: <u>In the first year after screening bund construction:</u> No erosion channels greater than 200mm deep and/or wide on any progressive rehabilitation. No more than 5 erosion channels greater than 150mm deep and/or wide within a 20m wide area on any progressive rehabilitation. <u>By end of the third year after bund construction:</u> No erosion channels greater than 50mm deep and/or wide on any progressive rehabilitation. No more than 5 erosion channels greater than 20mm deep and/or wide within a 20m wide area on any progressive rehabilitation. Any necessary remedial rehabilitation undertaken as soon as practicable. Closure: No erosion channels greater than 50mm deep and/or wide on any rehabilitated overburden storage areas. No more than 5 erosion channels greater than 20mm deep and/or wide within a 20m wide area on any rehabilitated overburden storage areas.</p>	<p>Visual inspection for erosion channels, recording depth, width and number of any channels & photographed for follow up.</p> <p style="text-align: center; color: red; font-weight: bold; font-size: 24px;">ADVERTISED PLAN</p>	<p>Ongoing Progressive Rehabilitation 6 Monthly. Additional inspections after significant rainfall events.</p> <p>Post Rehabilitation Phase Y1 - 2 Monthly Y2 - 3 Monthly Y3 - 6 Monthly (and further, if required) Additional inspections after significant rainfall events.</p>
<p>Overburden Storage Areas (Surface Water Controls)</p>	<p>Areas of Completed Progressive Rehabilitation: No turbid water leaving progressively rehabilitated overburden storage areas. Any necessary remedial rehabilitation undertaken as soon as practicable. Closure: No turbid water leaving any rehabilitated overburden storage areas.</p>	<p>Visual inspection for water quality, specific monitoring as per Surface Water Management Plan</p> <p>Water quality in accordance with the Water Quality Criteria for Farm Water Supplies as per Agriculture Victoria’s recommendations or specific CMA requirements</p>	<p>Ongoing Progressive Rehabilitation Monthly visual inspection. Additional inspections after significant rainfall events.</p> <p>Post Rehabilitation Phase Y1 – 1 Monthly Y2 – 6 Monthly Y3 - 12 Monthly (and further, if required) Additional inspections after significant rainfall events.</p>

Domain: Northern Waterway Diversion

Objective: As early as practicable in the site development, the northern waterway diversion and associated disturbance will have been fully rehabilitated and functioning to manage diverted surface water flows, as well as being suitable at closure for land use as general farming and animal husbandry.

Subdomain	Rehabilitation / Closure Criteria	Elements to be Monitored	Monitoring Frequency
<p>Waterway Diversion channel Retained post closure (see Sec 3.1)</p>	<p>Areas of Completed Early Rehabilitation: Waterway diversion constructed to final design and any conditions as approved by Melbourne Water. Waterway diversion functioning to manage surface water flows in accordance with Melbourne Water approval. Viable pasture established within constructed channel as soon as practicable with construction. Min 90% pasture and any other vegetation established, or in accordance with Melbourne Water approval. No bare patches greater than 5m² or in accordance with Melbourne Water approval. No turbid water being generated from early rehabilitated waterway channel areas. Any necessary remedial rehabilitation undertaken as soon as practicable.</p> <p>Closure: Waterway diversion channel maintained in good repair with viable vegetation maintained, in accordance with Melbourne Water approval. Waterway diversion functioning to manage surface water flows in accordance with Melbourne Water approval. Min 90% pasture and any other vegetation established, or in accordance with Melbourne Water approval. No bare patches greater than 5m² or in accordance with Melbourne Water approval. No turbid water being generated from waterway channel areas.</p>	<p>Visual inspection for performance of northern waterway diversion, specific monitoring as per Surface Water Management Plan Water quality in accordance with the Water Quality Criteria for Farm Water Supplies as per Agriculture Victoria’s recommendations or specific Melbourne Water requirements Visual estimate of pasture establishment (ground cover) General description of vegetation vitality / survival Record / photograph any bare patches Record / photograph any weed infestation Record / photograph condition of northern waterway diversion channel.</p> <p style="text-align: center; color: red; font-weight: bold; font-size: 24px;">ADVERTISED PLAN</p>	<p>Completed Early Rehabilitation Monthly following completion of construction works until initial pasture fully established and erosion minimised. Additional inspections after significant rainfall events until vegetation fully established. Annually review for any need to remediate waterway diversion channel or planted vegetation. Or as required by Melbourne Water approval.</p> <p>Post Rehabilitation Phase Visual inspections of condition and functioning of northern waterway diversion Y1 – 3 Monthly Y2 – 6 Monthly Y3 - 12 Monthly (and further, if required) Additional inspections after significant rainfall events.</p>

Domain: Northern Waterway Diversion

Objective: As early as practicable in the site development, the northern waterway diversion and associated disturbance will have been fully rehabilitated and functioning to manage diverted surface water flows, as well as being suitable at closure for land use as general farming and animal husbandry.

Subdomain	Rehabilitation / Closure Criteria	Elements to be Monitored	Monitoring Frequency
Disturbed areas associated with construction of waterway diversion	<p>Areas of Completed Early Rehabilitation: Viable pasture established within disturbed areas associated with construction of waterway diversion as soon as practicable after construction. Min 90% pasture and any other vegetation established, or in accordance with Melbourne Water approval. No bare patches greater than 5m² or in accordance with Melbourne Water approval. Any necessary remedial rehabilitation undertaken as soon as practicable.</p> <p>Closure: All disturbed areas associated with construction of waterway diversion rehabilitated to viable pastures, or in accordance with Melbourne Water approval. Min 90% pasture and any other vegetation established, or in accordance with Melbourne Water approval. No bare patches greater than 5m² or in accordance with Melbourne Water approval.</p>	<p>Visual estimate of pasture establishment (ground cover) General description of vegetation vitality / survival Record / photograph any bare patches Record / photograph any weed infestation</p>	<p>Completed Early Rehabilitation Monthly following completion of construction works until initial pasture fully established and erosion minimised. Additional inspections after significant rainfall events until vegetation fully established. Annually review for any need to remediate waterway diversion or planted vegetation.</p> <p>Post Rehabilitation Phase Pasture and other vegetation establishment Y1 - 3 Monthly Y2 - 6 Monthly Y3 - 12 Monthly (and further, if required)</p>

**ADVERTISED
PLAN**

Domain: Northern Waterway Diversion

Objective: As early as practicable in the site development, the northern waterway diversion and associated disturbance will have been fully rehabilitated and functioning to manage diverted surface water flows, as well as being suitable at closure for land use as general farming and animal husbandry.

Subdomain	Rehabilitation / Closure Criteria	Elements to be Monitored	Monitoring Frequency
Northern Waterway Diversion (Erosion)	<p>Areas of Completed Early Rehabilitation:</p> <p>Erosion to be minimised for all disturbance areas in relation to construction of waterway diversion as soon as practicable after construction, or in accordance with Melbourne Water approval.</p> <p>Turbid water being generated as a result of constructing northern waterway diversion to be minimised as soon as practicable after construction, or in accordance with Melbourne Water approval.</p> <p>Any necessary remedial rehabilitation undertaken as soon as practicable.</p> <p>Closure:</p> <p>No erosion occurring within original disturbance area for construction of waterway diversion.</p> <p>No turbid water being generated from original disturbance area for northern waterway diversion.</p>	<p>Visual inspection for water quality, specific monitoring as per Surface Water Management Plan</p> <p>Visual inspection for erosion channels, recording depth, width and number of any channels & photographed for follow up.</p> <p>Water quality in accordance with the Water Quality Criteria for Farm Water Supplies as per Agriculture Victoria’s recommendations or specific Melbourne Water requirements</p>	<p>Completed Early Rehabilitation:</p> <p>Monthly following completion of construction works until initial pasture fully established and erosion minimised.</p> <p>Additional inspections after significant rainfall events until vegetation fully established.</p> <p>Annually review for any need to remediate waterway diversion.</p> <p>Post Rehabilitation Phase</p> <p>Y1 - 3 Monthly</p> <p>Y2 - 6 Monthly</p> <p>Y3 - 12 Monthly (and further, if required)</p>

**ADVERTISED
PLAN**

Domain: Pit

Objective: At closure above water quarry batters fully rehabilitated, with established healthy vegetation cover, fringing an established, healthy pit lake that forms a safe, stable and sustainable landform.

Subdomain	Rehabilitation / Closure Criteria	Elements to be Monitored	Monitoring Frequency
<p>Terminal Batters (Design and Construction)</p>	<p>Areas of Completed Progressive Rehabilitation:</p> <p>Upper terminal batters cut not steeper than 1V:3H (18 deg), with 1V:5H beaching slopes (10m wide), in progressively rehabilitated areas.</p> <p>Lower terminal batters (below final water level) cut not steeper than 1V:2H (27 deg) in progressive rehabilitated areas.</p> <p>Crest diversion drains constructed and functioning to manage surface water flows in progressively rehabilitated areas.</p> <p>Safety bund established at crest in progressively rehabilitated areas.</p> <p>Viable pasture initially established on upper terminal batters, as soon as practicable, in progressively rehabilitated areas.</p> <p>Min 90% initial pasture establishment on progressively rehabilitated areas.</p> <p>No bare patches greater than 10m² on progressively rehabilitated areas.</p> <p>Fencing maintained to exclude stock access to upper batters, where necessary, while pasture is being established.</p> <p>Any necessary remedial rehabilitation undertaken as soon as practicable.</p> <p>Closure:</p> <p>Rehabilitated batters established in accordance with the Rehabilitation Plan, are stable and likely to remain stable in long-term.</p> <p>Crest diversion drains functioning to manage surface water and do not require maintenance.</p> <p>Raised ground (former hardstand) linking to bund (~1m high) established around lower western crest of pit to provide increased freeboard.</p> <p>Upper terminal batters and beaching zones have established long-term vegetation (see below).</p>	<p>Effectiveness of surface water diversion drains and bunding at extraction crest.</p> <p>Visual assessment of rehabilitated terminal batters, looking for presence/absence of landform slumping, cracks or movement</p> <p>Effectiveness of any temporary fencing to control stock and feral animals until vegetation established</p> <p>Visual estimate of pasture establishment (ground cover) and visual impact remediation</p> <p>General description of pasture vitality</p> <p>Record / photograph condition of surface water diversion drains and bunding.</p> <p>Record / photograph condition of rehabilitated terminal batters.</p> <p>Record / photograph any bare patches</p> <p>Record / photograph any weed infestation</p> <p>Rehabilitated landform constructed in accordance with the Rehabilitation Plan</p>	<p>Ongoing Progressive Rehabilitation</p> <p>Annually review for any terminal batters that could be rehabilitated.</p> <p>3 Monthly following completion of earthworks until initial pasture established.</p> <p>Then 6 monthly until long-term vegetation fully established and erosion minimised.</p> <p>Additional inspections after significant rainfall events until vegetation fully established.</p> <p>Post Rehabilitation Phase</p> <p>Y1 - 3 Monthly</p> <p>Y2 - 6 Monthly</p> <p>Y3 - 12 Monthly (and further, if required)</p> <p>Additional inspections after significant rainfall events.</p> <p style="text-align: center;">ADVERTISED PLAN</p>

Domain: Pit

Objective: At closure above water quarry batters fully rehabilitated, with established healthy vegetation cover, fringing an established, healthy pit lake that forms a safe, stable and sustainable landform.

Subdomain	Rehabilitation / Closure Criteria	Elements to be Monitored	Monitoring Frequency
Upper Terminal Batters (Erosion)	<p>Areas of Completed Progressive Rehabilitation: Pasture or brush matting initially established on erodible materials, as soon as practicable, on progressively rehabilitated upper batters.</p> <p><u>In the first year after rehab. batter earthworks:</u> No erosion channels greater than 200mm deep and/or wide on any progressive rehabilitation. No more than 5 erosion channels greater than 150mm deep and/or wide within a 20m wide area on any progressive rehabilitation.</p> <p><u>By the end of the third year after earthworks:</u> No erosion channels greater than 50mm deep and/or wide on any progressive rehabilitation. No more than 5 erosion channels greater than 20mm deep and/or wide within a 20m wide area on any progressive rehabilitation Any necessary remedial rehabilitation undertaken as soon as practicable.</p> <p>Closure: No erosion channels greater than 50mm deep and/or wide on any rehabilitated upper batters. No more than 5 erosion channels greater than 20mm deep and/or wide within a 20m wide area on any rehabilitated upper batters.</p>	<p>Visual inspection for erosion channels, recording depth, width and number of any channels and photographed for follow up.</p>	<p>Ongoing Progressive Rehabilitation 3 Monthly following completion of earthworks until initial pasture established. Then 6 monthly until long-term vegetation fully established and erosion minimised. Additional inspections after significant rainfall events until vegetation fully established. Annually review for any need to remediate areas of erosion.</p> <p>Post Rehabilitation Phase Y1 - 2 Monthly Y2 - 3 Monthly Y3 - 6 Monthly (and further, if required) Additional inspections after significant rainfall events.</p>

**ADVERTISED
PLAN**

Domain: Pit

Objective: At closure above water quarry batters fully rehabilitated, with established healthy vegetation cover, fringing an established, healthy pit lake that forms a safe, stable and sustainable landform.

Subdomain	Rehabilitation / Closure Criteria	Elements to be Monitored	Monitoring Frequency
<p>Upper Terminal Batters (Native Vegetation, where established - Trees / Shrubs)</p>	<p>Areas of Completed Progressive Rehabilitation: Viable vegetation established on upper batters and beaching zones in progressively rehabilitated areas. Min 80% overstorey vegetation establishment, with a min 70% understorey vegetation established, on progressively rehabilitated upper batters. Min 70% establishment of suitable vegetation on progressively rehabilitated beaching zones. No bare patches greater than 10m² on progressively rehabilitated batters. Fencing maintained to exclude stock access to upper batters, where necessary, while vegetation is being established. Any necessary remedial rehabilitation undertaken as soon as practicable.</p> <p>Closure: Viable vegetation established on upper batters and beaching zones. Min 80% overstorey vegetation establishment, with a min 70% understorey vegetation established, in established plantings on upper batters. Min 70% establishment of suitable vegetation on beaching zones. No bare patches greater than 10m² in established plantings.</p>	<p>Visual estimate of vegetation establishment (canopy cover) General description of vegetation vitality / species survival Record / photograph any bare patches</p>	<p>Ongoing Progressive Rehabilitation 3 Monthly until initial pasture established on disturbed areas. Then 6 monthly until trees / shrubs fully established and erosion minimised. Additional inspections after significant rainfall events until vegetation fully established. Annually review for any need to remediate planted vegetation.</p> <p>Post Rehabilitation Phase Y1 - 3 Monthly Y2 - 6 Monthly Y3 -12 Monthly (and further, if required) Additional inspections after significant rainfall events.</p>

**ADVERTISED
PLAN**

Domain: Pit

Objective: At closure above water quarry batters fully rehabilitated, with established healthy vegetation cover, fringing an established, healthy pit lake that forms a safe, stable and sustainable landform.

Subdomain	Rehabilitation / Closure Criteria	Elements to be Monitored	Monitoring Frequency
Upper Terminal Batters (Surface Water Controls)	<p>Areas of Completed Progressive Rehabilitation:</p> <p>Surface water diversion drains functioning to divert surface water flows away from progressively rehabilitated extraction areas.</p> <p>No turbid water leaving progressively rehabilitated extraction areas.</p> <p>Any necessary remedial rehabilitation undertaken as soon as practicable.</p> <p>Closure:</p> <p>No turbid water leaving progressively rehabilitated extraction areas.</p> <p>Surface water diversion drains functioning to divert surface water flows away from all rehabilitated extraction areas and do not require maintenance.</p> <p>No turbid water leaving progressively rehabilitated extraction areas.</p>	<p>Visual inspection for performance of diversion drainage, specific monitoring as per Surface Water Management Plan</p> <p>Water quality in accordance with the Water Quality Criteria for Farm Water Supplies as per Agriculture Victoria’s recommendations or specific CMA requirements</p>	<p>Ongoing Progressive Rehabilitation</p> <p>Visual inspections of surface water controls for progressively rehabilitated areas</p> <p>Y1 - 1 Monthly</p> <p>Y2 - 6 Monthly</p> <p>Y3 - 12 Monthly (and further, if required)</p> <p>Additional inspections after significant rainfall events.</p> <p>Post Rehabilitation Phase</p> <p>Visual inspections of surface water controls</p> <p>Y1 - 1 Monthly</p> <p>Y2 - 6 Monthly</p> <p>Y3 - 12 Monthly (and further, if required)</p> <p>Additional inspections after significant rainfall events.</p>

**ADVERTISED
PLAN**

Domain: Residual Work Authority Area

Objective: At closure site fencing, weeds, pest animals and surface water flows in the remainder of the Work Authority will have met required standards and will not be adversely affected by past quarry operations and associated rehabilitation works.

Subdomain	Rehabilitation / Closure Criteria	Elements to be Monitored	Monitoring Frequency
Residual Area (Site Fencing) All retained post closure (see Sec 3.1)	<p>Areas of Completed Progressive Rehabilitation: Integrity / suitability for purpose of Work Authority perimeter fencing and stock-proof fencing. Any necessary remedial rehabilitation undertaken as soon as practicable.</p> <p>Closure: Not required for site security – standard stock-proof fencing. The site perimeter and internal fencing (including fence established behind the crest of terminal faces) will be retained upon closure and must be suitable for end land uses. Integrity / suitability at closure for end land uses, without requiring maintenance.</p>	<p>Condition and effectiveness of fencing (stock proof fencing) in preventing access while works are still being undertaken, and while vegetation is being established.</p> <p>Condition and suitability of perimeter fencing and internal fencing for end land uses.</p>	<p>Ongoing Progressive Rehabilitation Annually review for any need to remediate site fencing.</p> <p>Post Rehabilitation Phase Annually review for suitability for end land uses.</p>
Residual Area (Weeds)	<p>Areas of Completed Progressive Rehabilitation: Weeds less than 5% total ground cover within any specific progressively rehabilitated areas Any necessary remedial rehabilitation undertaken as soon as practicable.</p> <p>Closure: Weeds less than 5% total ground cover within any specific areas</p>	<p>Visual estimate of weed coverage Record / photograph any weed infestation</p>	<p>Ongoing Progressive Rehabilitation 6 monthly inspections for any weeds within the Work Authority area.</p> <p>Post Rehabilitation Phase 6 monthly for any weeds within the Work Authority area.</p>
Residual Area (Pest Animals)	<p>Areas of Completed Progressive Rehabilitation: Local guidelines are met for pest animals in any progressively rehabilitated areas No visible impact of pest animals on land for any progressively rehabilitated areas Any necessary remedial rehabilitation undertaken as soon as practicable.</p> <p>Closure: Local guidelines are met for pest animals No visible impact of pest animals on land</p>	<p>Evidence of pest animals (photograph) Assessment of numbers (if possible)</p>	<p>Ongoing Progressive Rehabilitation 6 monthly inspections for any pest animals within the Work Authority area.</p> <p>Post Rehabilitation Phase 6 monthly for any pest animals within the Work Authority area</p>

ADVERTISED PLAN

Domain: Residual Work Authority Area

Objective: At closure site fencing, weeds, pest animals and surface water flows in the remainder of the Work Authority will have met required standards and will not be adversely affected by past quarry operations and associated rehabilitation works.

Subdomain	Rehabilitation / Closure Criteria	Elements to be Monitored	Monitoring Frequency
Residual Area (Diversion Drains and Diversion Bunds) Retained post closure (see Sec 3.1)	<p>Areas of Completed Progressive Rehabilitation:</p> <p>Surface water diversion drains and bunds in place and functioning to manage surface water flows for progressively rehabilitated areas.</p> <p>Surface water flows satisfactorily controlled to prevent erosion for progressively rehabilitated areas.</p> <p>Any necessary remedial rehabilitation undertaken as soon as practicable.</p> <p>Closure:</p> <p>All retained surface water diversion drains and bunds in place and functioning to manage surface water flows and do not require maintenance.</p> <p>Surface water flows satisfactorily controlled to prevent erosion across the site.</p>	<p>Visual inspection for performance of diversion drains and diversion bunds to ensure that no sediment is leaving the site, specific monitoring as per Surface Water Management Plan.</p> <p>Record / photograph condition of surface water diversion drains and diversion bunds.</p>	<p>Ongoing Progressive Rehabilitation</p> <p>Visual inspections of diversion drains and bunds for progressively rehabilitated areas</p> <p>Y1 - 1 Monthly</p> <p>Y2 - 6 Monthly</p> <p>Y3 - 12 Monthly (and further, if required)</p> <p>Additional inspections after significant rainfall events.</p> <p>Post Rehabilitation Phase</p> <p>Visual inspections of diversion drains and bunds</p> <p>Y1 - 1 Monthly</p> <p>Y2 - 6 Monthly</p> <p>Y3 - 12 Monthly (and further, if required)</p> <p>Additional inspections after significant rainfall events.</p>

**ADVERTISED
PLAN**

Domain: Residual Work Authority Area

Objective: At closure site fencing, weeds, pest animals and surface water flows in the remainder of the Work Authority will have met required standards and will not be adversely affected by past quarry operations and associated rehabilitation works.

Subdomain	Rehabilitation / Closure Criteria	Elements to be Monitored	Monitoring Frequency
Residual Area (Grazing Land)	<p>Areas of Completed Progressive Rehabilitation:</p> <p>Any necessary remedial rehabilitation of grazing land in residual Work Authority areas undertaken as soon as practicable.</p> <p>Pasture is viable and in good condition for any remedial rehabilitation of grazing land in residual Work Authority areas.</p> <p>Min 90% pasture establishment for any remedial rehabilitation of grazing land in residual Work Authority areas.</p> <p>No bare patches greater than 10m² for any remedial rehabilitation of grazing land in residual Work Authority areas.</p> <p>Closure:</p> <p>Pasture viable and in good condition for grazing land in residual Work Authority areas.</p> <p>Min 90% pasture cover for grazing land in residual Work Authority areas.</p> <p>No bare patches greater than 10m² for grazing land in residual Work Authority areas.</p>	<p>Visual estimate of pasture cover</p> <p>General description of pasture vitality</p> <p>Record / photograph any bare patches</p>	<p>Ongoing Progressive Rehabilitation</p> <p>Annual inspection for any need to remediate grazing land in residual Work Authority areas.</p> <p>For any remedial pasture establishment</p> <p>Y1 - 3 Monthly</p> <p>Y2 - 6 Monthly</p> <p>Y3 - 12 Monthly (and further, if required)</p> <p>Post Rehabilitation Phase</p> <p>Annual inspection for any need to remediate grazing land in residual Work Authority areas.</p> <p>For any remedial pasture establishment</p> <p>Y1 - 3 Monthly</p> <p>Y2 - 6 Monthly</p> <p>Y3 - 12 Monthly (and further, if required)</p>

**ADVERTISED
PLAN**

6. REHABILITATION MANAGEMENT

6.1. Roles and Responsibilities

The Work Authority holder will have the responsibility to ensure compliance with this Rehabilitation Plan throughout the life of the quarry and period of rehabilitation monitoring until the closure criteria are met and the rehabilitation bond is returned.

This responsibility will be delegated to the Quarry Manager (or their nominated representative) who will be responsible for managing the implementation of the Rehabilitation Plan, including:

- Delegating tasks associated with this Rehabilitation Plan where necessary.
- Providing adequate resources to implement this Rehabilitation Plan; and
- Providing adequate training to employees and contractors regarding their requirements under this Rehabilitation Plan.

6.2. Documentation

All monitoring outcomes, including any visual inspection worksheets/reports, testing or analysis, specialist reports, etc, will be recorded and retained at the quarry offices for periodic review. Where required or as appropriate this information will be available to Earth Resources Regulation or other relevant authorities.

6.3. Review

This Rehabilitation Plan will be subject to annual reviews, including when the ground is broken for each stage presented in the Site Layout Plan, with a comprehensive review undertaken prior to breaking ground in Stage 4. The purpose of the review is to ensure the Rehabilitation Plan adequately addresses current community expectations and Earth Resources Regulation requirements. As a result of the comprehensive review, some 5-8 years before the anticipated cessation of resource extraction, the Rehabilitation Plan may be revised and may initiate a Work Plan variation, or other approval process as deemed appropriate at that point in time.

Community consultation with regards to the site end use and Rehabilitation objectives will be sought via the Community Engagement process, and will be a permanent agenda item on all Community Engagement meetings, mail outs or other forms of consultation.

The Rehabilitation Plan reviews will take into consideration:

- any feedback from the community consultation process,
- changes that may have occurred on site,
- the results of any monitoring,
- advice from any specialist,
- the effectiveness or otherwise of any progressive rehabilitation and
- any directives by ERR.

**ADVERTISED
PLAN**

Depending on the nature of any changes to the plan discussions will be undertaken with Earth Resources Regulation to determine if there is any significant change in the risk profile of the site to determine if a variation or other approval process is required. This decision will be assessed at the time of the review and the most appropriate pathway undertaken.

Mineral Resources (Sustainable Development) Act
1990

Tenement Number: WA007541

Plan Number: PLN-001536
Work Plan Statutorily Endorsed

Signed: 
Delegate of the Department Head

Date: 26/05/2023



Lang Lang Sand Resources

WA007541

COMMUNITY ENGAGEMENT PLAN

September 2022



**ADVERTISED
PLAN**

Table of Contents

1.	Company Representative Statement.....	3
2.	Introduction	4
3.	Site description.....	5
4.	Prior Stakeholder Engagement.....	6
5.	Legislative framework.....	7
6.	Goals and objectives	8
7.	Stakeholder analysis	9
8.	Communication	10
9.	Stakeholder engagement plan.....	11
10.	Complaints management process	13
11.	Evaluation	13
12.	Contact us.....	14

ADVERTISED PLAN

Version Control and Approval

Version No.	Prepared	Reviewed	Approved	Date	Description	Next Revision
1	BCA Consulting	Kelvin Sargent General Manager	Kelvin Sargent General Manager	May 2021	Initial Plan	May 2023
2	BCA Consulting	Kelvin Sargent General Manager	Kelvin Sargent General Manager	September 2022	Revision	September 2024



1. Company Representative Statement

Aurora Construction Materials, through its subsidiary Lang Lang Sand Resources, acknowledges the environmental and economic values in the area surrounding the quarry site at Lang Lang and:

- will respect the rights held by private and public landowners in the area.
- are committed to engaging with the local community, listening to community concerns and responding appropriately to community feedback.
- seek to be recognised as a valuable contributor to the Lang Lang and broader community.

Kelvin Sargent
General Manager

**ADVERTISED
PLAN**

2. Introduction

The Lang Lang Sand Quarry is a new sand extraction and processing operation owned and operated by Aurora Construction Materials (ACM).

ACM is a leading provider of sustainable aggregate, crushed rock and concrete products to the civil construction, residential and commercial building segments throughout Victoria. The ACM ethos of 'redefining green' seeks to capture our commitment to sustainability, recycling and waste minimisation.

The Lang Lang Quarry will provide an additional feed source to ACM's existing sand and recycled product supplies, utilising standard 'soft' extraction (no blasting) and optimum processing techniques.

ACM will engage with the community to gain a broad understanding of the potential impacts that the quarry's operation may have and provide the opportunity for better communication with stakeholders in the Lang Lang area. This Community Engagement Plan outlines the details of that engagement.

**ADVERTISED
PLAN**

3. Site description

Extraction of sand has taken place in the Lang Lang area for many years, with the importance of the resource to the Victorian construction industry highlighted in the State Government's 1996 Regional Sand Strategy. ACM's Lang Lang site is within the Cardinia Shire and was previously used for dairy farming.

The operation at WA007541 consists of extracting raw sand, either by dry methods or by dredging below groundwater, and processing through a screening and washing plant. Extraction areas are initially prepared by removing and stockpiling topsoil and any overburden materials. At completion of mining vegetated slopes will be established.

The site is located at 5575 South Gippsland Highway.

The closest dwellings are approximately 200m from the Work Authority boundary, two on the south side of the South Gippsland Highway and one to the east.

Significant industrial land uses in close proximity to the site are the Lang Lang Gas Plant (Bass Gas/Beach Gas facility) immediately to the north east, and a number of other Work Authorities (WA1338, WA1004 and WA1002) to the west and east.

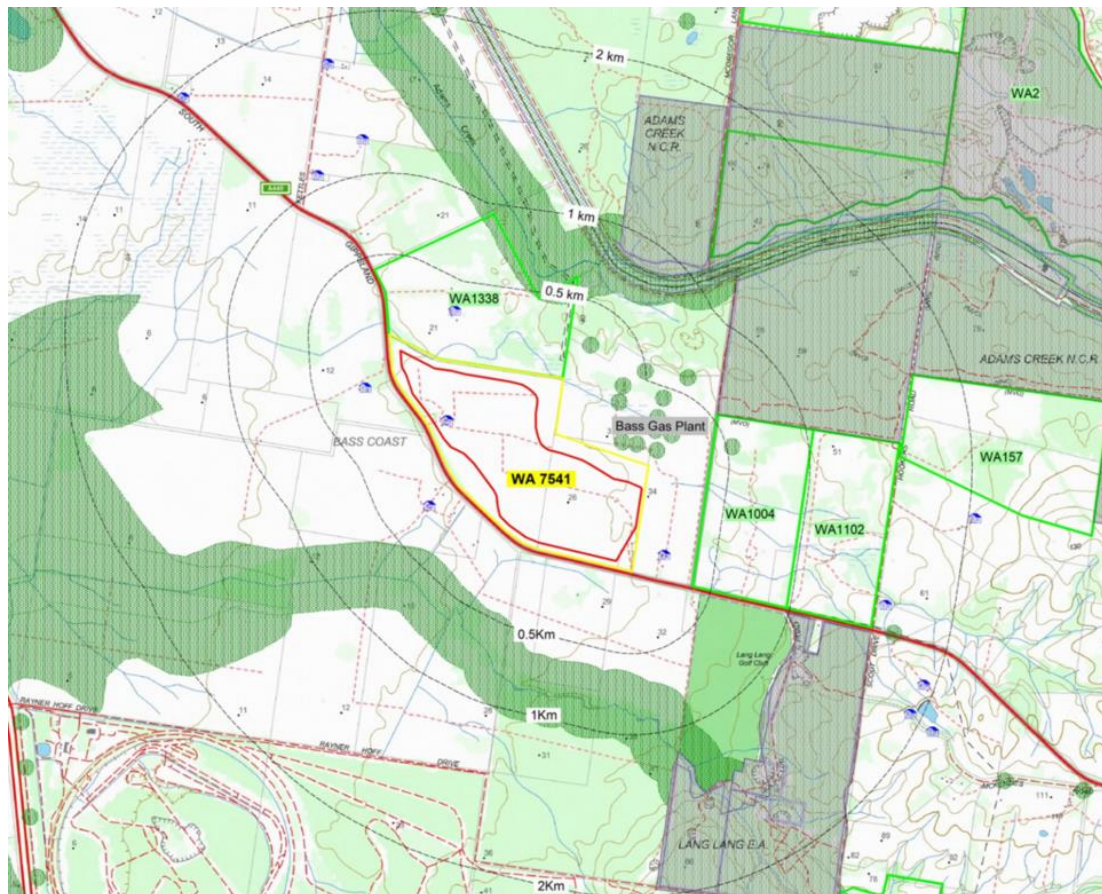


Figure 1 Quarry Area and Adjacent Land Uses shows the immediate quarry area and adjacent land uses and sensitive receptors.

**ADVERTISED
PLAN**

4. Prior Stakeholder Engagement

Engagement with stakeholders has previously taken place during the licensing and approvals processes, including a virtual site meeting in October 2020, and the initial operating phase of the project.

The Table below provides a snapshot summary of prior engagement activities.

Table 1.

Stakeholder	What was discussed	Why were they engaged	When did engagement take place	Outcome
Earth Resources Regulation (ERR)	MRSDA approvals	Work Authority and Work Plan applications	Since 2019	WA and WPV submissions
Cardinia Shire	Land use issues and offsite impacts	Planning approvals	Since 2020	Planning permit application
Melbourne Water	Proposed waterway diversion (asset DR2504)	Melbourne Water support required for design and their approval ultimately required	Since 2020	Engagement for in principal support of waterway diversion design Commitment to construct in accordance with MW approval
Southern Rural Water	Water licences	Monitoring bores Transfer and usage changes	Sep 2020 to Mar 2021	Monitoring bore licences issued Amended SRW Take & Use Licences
Neighbouring landowners / residents	Potential water impacts and other impacts	As part of SRW engagement	Early 2021	Satisfaction with proposed activities
Beach Energy (Bass Gas Refining Facility)	Potential water impacts and other impacts	As part of SRW engagement	Early 2021	Satisfaction with proposed activities
Beach Energy (Gas Pipeline)	Gas pipeline adjacent to site boundary	Sought advice on required offsets from gas pipeline	2022	Agreed to offsets for waterway diversion and monitoring bores from gas pipeline
AusNet Services (powerlines)	Powerline across the site requires relocation	Sought advice on requirements for relocation of powerline and their approval ultimately required	2022	Advice provided for relocation of powerline Commitment to complete relocation application prior to Stage 2

5. Legislative framework

This community engagement plan is subject to the legislative requirements set out in the *Minerals Resource (Sustainable Development) Act 1990* and associated regulations. These are provided below:

Mineral Resource (Sustainable Development) Act 1990

Section 77G(3)(e) – Community Engagement Plan

Section 77K – Extractives industry duty to consult

Mineral Resource (Sustainable Development) (Extractive Industries) Regs 2019

Part 2, Regulation 12 – A Community Engagement Plan that –

- (a) identifies the community likely to be affected by the quarry operations; and
- (b) sets out how the extractive industry authority holder will—
 - (i) identify community attitudes and expectations; and
 - (ii) share information with the community; and
 - (iii) receive feedback from the community; and
 - (iv) analyse community feedback and consider community concerns or expectations; and
 - (v) register, document and respond to complaints and other communications from members of the community in relation to the quarry operations.

**ADVERTISED
PLAN**

6. Goals and objectives

Goals

The goals of this community engagement plan are to maintain and improve Lang Lang Sand Resources standing in the local community through,

- Identifying stakeholders
- Understanding stakeholder concerns
- Establishing and maintaining communication linkages with stakeholders, and
- Responding to enquiries and complaints in a timely manner

Objectives

To achieve the goals of this community engagement plan, the objectives are to:

- Establish and maintain, through an annual review, a stakeholder register.
- Analyse stakeholder feedback regularly and use the results to modify operational activities and behaviours where appropriate.
- Engage with key stakeholders six monthly and meet biennially.
- Respond to all enquiries and complaints within 48 hours of receiving them.

**ADVERTISED
PLAN**

ADVERTISED PLAN

7. Stakeholder analysis

The following stakeholder analysis was compiled from research and analysis as outlined in the ERR Community Engagement Guidelines.

Table 2.

Stakeholder	Level of impact by project	Level of impact on project	Issues	Risk rating	Mitigation measure	Risk rating after mitigation
Neighbouring residences	Medium	Medium	Impact of noise and dust Operating hours Visual Impact Ground water impacts	Medium	Operating hours Noise attenuation and dust suppression Progressive rehabilitation	Low
Cardinia Shire	Low	High	Permit compliance No complaints received	High	Community Engagement Plan	Medium
ERR/DJPR	Medium	High	Quarry managed in accordance with all legislative requirements	High	Compliance with legislative requirements	Medium
Melbourne Water	High	High	Waterway diversion required (asset DR2504)	High	Engagement for in principal support of waterway diversion design Commitment to construct in accordance with MW approval	Medium
Southern Rural Water	Medium	High	Water usage and any potential licensing requirement	Medium	Compliance with licensing	Medium
Beach Energy (Bass Gas Refining Facility and Pipeline)	Low	Low	Impact of noise and dust Gas pipeline adjacent to site boundary	Medium	Operating hours Noise attenuation and dust suppression Agreed offsets to gas pipeline	Low
AusNet Services (powerlines)	Medium	Low	Powerline across the site requires relocation	Medium	Engagement to understand requirements for relocated powerline Commitment to complete relocation application prior to Stage 2	Low

8. Communication

A variety of engagement techniques and communications channels will be used to meet the goals and objectives of this Community Engagement Plan. These will include

- Lang Lang Sand Resources initiating one-on-one engagement, both in person and otherwise
- The distribution of written information
- Routine meetings for groups of stakeholders
- The scheduling of specific meetings or forums associated with individual issues
- Responding to enquiries and complaints

Feedback from all engagement activities will be collected and recorded, with attitudes and Issues regularly reviewed.

The Quarry Manager will be responsible for ensuring feedback is considered in the planning and execution of operational activities.

**ADVERTISED
PLAN**

9. Stakeholder engagement plan

The following stakeholder engagement plan has been developed to respond to the issues identified in the stakeholder issues analysis. This plan has been developed in line with the International Association for Public Participation (IAP2) best practice.

IAP2's Spectrum of Public Participation was designed to assist with the selection of the level of participation that defines the public's role in any public participation process. The Spectrum is used internationally and is ERR recommended approach for interaction with stakeholders. The table below outlines each of the five levels included within the Spectrum.

Level	IAP2 Goal	Promise
Inform	Provide balanced and objective information to stakeholders and assist their understanding	Keep stakeholders informed
Consult	Obtain stakeholder feedback on analysis, alternatives and/or decisions	Acknowledge stakeholder concerns and provide feedback on how stakeholder input influenced the final decisions
Involve	Work directly with stakeholders throughout the process to measure concerns. Stakeholder aspirations are understood and considered.	Stakeholder concerns directly reflected in alternatives
Collaborate	Partner stakeholders in each aspect of the decision including alternatives and solutions	Incorporate stakeholder advice and recommendations in decisions
Empower	Final decision making in the hands of the public	Implement community decisions

There are numerous community engagement techniques available to Lang Lang Sand Resources to enable effective and transparent engagement with the local community. These techniques include, but are not limited to newsletters, fact sheets, workshops, advertisements/public displays, community notice boards, community activities, open days, public meetings, face to face meetings and surveys.

The appropriate community engagement technique is targeted to the individual stakeholder and will be varied as required based on a review of any changes to operational activities that have the potential to affect that stakeholder.

**ADVERTISED
PLAN**

ADVERTISED PLAN

Table 3.

Stakeholder	Issue	Level of engagement (IAP2)	Key message	Method of engagement	Timing (weekly, monthly, as required)
Neighbouring residences	Any matters of concern of impacts from site activities, including impacts of noise and dust, operating hours and visual amenity	Informed and consulted	Active community engagement Noise and dust attenuation measures Working hours are adhered too	Face to face meeting Phone calls/email Letterbox drop	As required At least every 3 months
Cardinia Shire	Permit compliance Community consulted and no complaints received	Informed	Compliance with obligations Advise of any adverse events	Face to face meeting Phone calls/email	Annual meeting or as required
ERR/DJPR	Regulatory compliance Community consulted and no complaints received	Informed	Compliance with obligations Advise of any adverse events	Face to face meeting Phone calls/email	As required
Melbourne Water	Waterway diversion required (asset DR2504)	Consulted & involved	Compliance with waterway obligations Advise of any adverse events	Face to face meeting Phone calls/email	As required
Southern Rural Water	Licence compliance	Informed and consulted	Compliance with obligations Advise of any adverse events	Face to face meeting Phone calls/email	As required
Beach Energy (neighbour) (Bass Gas Refining Facility and Pipeline)	Impact of noise and dust Gas pipeline adjacent to site boundary	Consulted & involved	Compliance with pipeline obligations Noise and dust attenuation measures Advise of any adverse events	Face to face meeting Phone calls/email Letterbox drop	As required At least every 3 months
AusNet Services (powerlines)	Powerline across the site requires relocation	Consulted & involved	Compliance with powerline obligations Advise of any adverse events	Face to face meeting Phone calls/email	As required

10. Complaints management process

In accordance with the requirements of *Mineral Resource (Sustainable Development) (Extractive Industries) Regulations 2019*, the Lang Lang Sand Resources complaints management process includes registering, documenting, and responding to complaints and other communications from members of the community in relation to the quarry operations.

The Lang Lang Sand Resources complaints management process is documented and reviewed as part of the review of this Community Engagement Plan.

Complaints and enquiries can be directed either to the Quarry directly, with contact details at the Quarry entrance, or through the ACM Corporate office.

The process includes:

- acknowledging complaints promptly
- assessing complaints and assigning them priority
- planning an investigation if one is needed
- investigating the complaint to determine the facts and options for resolution
- responding to the complainant, including by keeping them informed of progress
- and providing a detailed response

Lang Lang Sand Resources is committed to being accessible and responsive when dealing with complaints. We expect our staff to be respectful, providing clear and reasoned information, and we recognise that people making complaints to us may be stressed, frustrated or upset. However, we do not tolerate behaviour that is offensive, abusive, threatening or consumes disproportionate resources. Where this is the case, we may take steps to reduce any detrimental impact of such behaviour on our staff, our productivity and resources.

ADVERTISED PLAN

11. Evaluation

To ensure compliance against the goals and objectives outlined in Section 6 of this document Lang Lang Sand Resources will review this Community Engagement plan every two years.

The review will include an analysis and assessment of the complaints register and stakeholder register, to

- determine if particular activities or actions have changed the risk profile
- ensure compliance with response time frames

Any subsequent revision of the plan will be provided to ERR.

Any changes that are made to operations that have the potential to change the risk profile of a stakeholder will result in the plan being updated as soon as practicable.

12. Contact us

Lang Lang Sand Resources

5575 Sth Gippsland Highway
Lang Lang, Vic. 3984

Aurora Construction Materials

Suite 2, Level 1, 20 English Street,
Essendon Fields, VIC, 3041.

Phone: (03) 9408 0666

**ADVERTISED
PLAN**