VHM Limited

Rehabilitation Plan- MIN007256

VHM001-000-AP-PLN-0005

Goschen Rare Earths and Minerals Sands Project
November-2025

Controlled Document

Goschen Rare Earths and Mineral Sands Project Rehabilitation Plan

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Acronyms and Definitions

Term	Description
AMD	Acid Mine Drainage
ANCOLD	Australian National Committee on Large Dams
CEP	Community Engagement Plan
Closure	Defined as the period after rehabilitation criteria has been achieved and the mining tenement has been relinquished.
Criteria	a principle or standard (qualitative or quantitative), set out in the Rehabilitation Plan, used to measure whether an Objective as described in Regulation 43(c) has been met
DEECA	Department of Energy, Environment and Climate Action (Vic)
EC	Electrical conductivity
EES	Environment Effects Statement
EPBC	Environment Protection Biodiversity Conservation Act 1999
EQOs	Environmental Quality Objectives
ERC	Environmental Review Committee
ERRV	Earth Resources Regulation Victoria
EVC	Ecological Vegetation Class
FFG	Flora and Fauna Guarantee Act 1988
FOS	Factor of Safety
GDE	Groundwater Dependent Ecosystems
Goschen Project	Goschen Rares Earths and Mineral Sands Project
H:V	Horizontal to vertical ratio
ha	Hectare(s)
In-pit tailings cells	Tailings placed with an engineering cell within the mine void. In-pit Tailings Storage Facility, designed to meet ANCOLD, 2019.
ITR	Independent Technical Review
m	Metre(s)

Term	Description
Mining Block	Rectangular block used to subdivide the reserve for mine scheduling purposes. Generally 125m long (N-S) with variable width between 275m and 600m.
mm	Millimetre(s)
MRSD Act	Mineral Resources (Sustainable Development) Act 1990
MRSD Regulations	Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2019
Mtpa	Million tonnes per annum
NEPM	National Environment Protection Measure
Objectives	A statement of the measurable outcome of what you must achieve through rehabilitation activities. Objectives can relate to the whole site, or a specific rehabilitation domain
Post-closure	The period following mining licence relinquishment.
Post-execution phase	Rehabilitation phase: The post execution phase is a period of maintenance and monitoring until the site achieves a safe, stable and sustainable sate in terms of all aspects to the new landform.
Rehabilitation	Refers to the period following operations, and includes: decommissioning, rehabilitation earthworks and the monitoring period prior to the rehabilitation criteria being met. From ERR, 2020. *Preparation of Rehabilitation Plans*: “in Victorian legislation rehabilitation is the term used to encompass all aspects of rehabilitation through to completion with the aim of leaving the site in a safe, stable and sustainable state.”
Rehabilitation domain	An area of the site comprising features that have had similar activities and/or rehabilitation requirements.
Rehabilitation hazard	Any rehabilitation activity and circumstance that may pose a risk to the environment, to any member of the public, or to land, property, or infrastructure in the vicinity of the rehabilitation activity.
RoM	Run of Mine
Sensitive Receptor	Sensitive receptors are people or other organisms that may have an increased sensitivity or exposure to an emission by virtue of their age and health (e.g. schools, day care centres, hospitals, nursing homes), status (e.g. sensitive or endangered species), proximity to the contamination, dwelling construction, or the facilities they use (e.g. water supply).
t	Tonne(s)
tpa	Tonnes per annum

Term	Description
VHM	VHM Limited
Work Plan Area	Work plan area covers the full 1,534 ha area within Mining Licence 007256.
WQO	Water Quality Objectives

1. Introduction

1.1 Background and Purpose

This Rehabilitation Plan has been prepared as a part of a work plan submission for the Goschen Rare Earths and Mineral Sands Project (Goschen Project) owned by VHM Limited (VHM).

The Goschen Project (Figure 1) located in the Loddon Mallee Region of Victoria, approximately 35 km south of Swan Hill in the Gannawarra Shire. The project includes mining of heavy mineral sands and rare earths in stages over an approximate mine life of 20-25 years using a stepped approach to reach peak throughput rates.

Production will commence in Area 1 and will increase to an approximate 5 Mtpa Run of Mine (ROM) throughput capacity, which will continue into Area 3. The processing facility for ore extracted from Area 1 and Area 3 is to be located in Area 1.

Following receipt of a referral from VHM Ltd, in October 2018 the Minister for Planning decided that under the Environment Effects Act 1978 an environment effects statement (EES) was required for the Goschen Project. VHM prepared an EES: VHM Limited, November 2023*. Environmental Effects Statement- Goshen Rare Earths and Mineral Sands Project,* which included a draft Rehabilitation Plan, pitt&sherry, 2023), which was authorised for public exhibition and exhibited for public comment from 20 November 2023 to 17 January 2024.

An inquiry under the EE Act was also held and the inquiry and advisory committee (IAC) held a public hearing for 21 days across a 6-week period (between 25 March- 30 April 2024).

The Minister for Planning completed her assessment of the environmental effects of the project in December 2024, which included recommendations regarding rehabilitation and closure of the mine (refer to Appendix B).

This Rehabilitation Plan is based on the draft rehabilitation plan exhibited with the EES and has been updated and prepared in accordance with the overarching requirements within the *Minerals Resources (Sustainable Development) Act 1990* (MRSD Act) and associated *Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2019* (MRSD Regulations).

1.2 Legislation and Guidelines

Legislation:

- Minerals Resources (Sustainable Development) Act 1990 (MRSD Act)
- Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2019 (MRSD Regulations)
- Environment Protection Act 2017 (EP Act)

Guidelines:

- Earth Resources Regulation's Preparation of Rehabilitation Plans Guideline for Mining & Prospecting Projects Version 1.0, (ERR, February 2020).
- Technical Guideline – Design and Management of Tailings Storage Facilities (ERRV, April 2017)
- Australian National Committee on Large Dams Guidelines (ANCOLD, 2019)

1.3 Plan Checklist

In accordance with the *MRSD Act 1990 and the MRSD Regulations*, this Rehabilitation Plan provides the required site-specific information. An overview of these requirements and where they are addressed, is provided in Table 1 below

Table 1 Checklist of information requirements as required from the MRSD Act.

Information requirements	Where addressed in this plan
project summary	Section 2.1
checklist	Section 1.3
site information and setting	Section 2
community engagement details	Section 3.2
post-mining land uses and landform	Section 4
rehabilitation domains	Section 5
objectives	Section 6
criteria for measuring whether objectives are met	Section 6.3
schedule for rehabilitation milestones	Section 7
post-rehabilitation risks.	Section 9

1.4 Technical Studies and Reference Material

A number of supporting technical assessments have been prepared which have supported the development of the Rehabilitation Plan, including;

- ATCW, April 2025. Tailings Storage Facility Design, Goschen Rare Earths and Mineral Sands Project Goschen.
- CDM Smith, October 2023. *Goschen Project EES- Groundwater..* Prepared for VHM Limited.
- JRHC Enterprises Pty Ltd, May 2023. Radiation Impact Assessment. Prepared for VHM Limited. Land and Water Consulting, December 2022. VHM Goschen project geochemical assessment - Updated preliminary CSM. Prepared for VHM Limited.
- Nature Advisory, October 2023. Goschen Mineral Sands and Rare Earth Project- Native Vegetation and Flora Assessment. Prepared for VHM Limited.
- pitt&sherry, November 2023. Goshen Mineral Sands and Rare Earths Project- Mine Site Surface Water Impact Assessment [rev 0]. Prepared for VHM Limited.
- pitt&sherry, April 2025a. Surface water strategy, modelling simulations, gravity/pressurise pipe and pump sizing - Goschen Mineral Sands and Rare Earths Project. Prepared for VHM Limited.
- pitt&sherry, 2025. Basis of Geotechnical Design. Prepared for VHM Limited.
- SLR, July, 2023. Soil and Land Resources Assessment. Goschen Rare Earths and Mineral Sands Project. Prepared for VHM Limited.

1.5 Related Management Plans

This Rehabilitation Plan is to be implemented in conjunction with the following documents:

- Soil and Stockpile Management Plan (SSMP) VHM001-000-AP-PLN-0010
- Groundwater Management Plan (GWMP) VHM001-000-AP-PLN-0017
- Surface Water Management Plan (SWMP) VHM001-000-AP-PLN-0016
- Biodiversity Management Plan (BMP) VHM001-000-AP-PLN-0015
- Radiation Management Plan VHM001-000-AP-PLN-0018
- Radiation Waste Management Plan VHM001-000-AP-PLN-0020
- Radiation Environment Management Plan VHM001-000-AP-PLN-0019
- Community Engagement Plan (CEP) VHM001-000-AP-PLN002

1.6 Rehabilitation Obligations and Commitments

All obligations and commitments applicable to rehabilitation and closure for the Project have been identified and are provided in the Obligations Register (Appendix B).

The Obligations Register will be regularly reviewed and updated to ensure that all closure and rehabilitation requirements are identified and completed within appropriate timeframes. Any rehabilitation requirements under secondary consents will also be implemented as part of the rehabilitation obligations.

2. Site Information and Setting

2.1 Mine Location

The Goschen Project on MIN007256 is located near Lalbert, in the Murray Basin (Figure 1 below), Victoria, approximately 35 kilometres south of Swan Hill. The MIN tenement boundary is shown on and is within land within the Retention Licence held by VHM (RL6806) as shown on Figure 2 below.

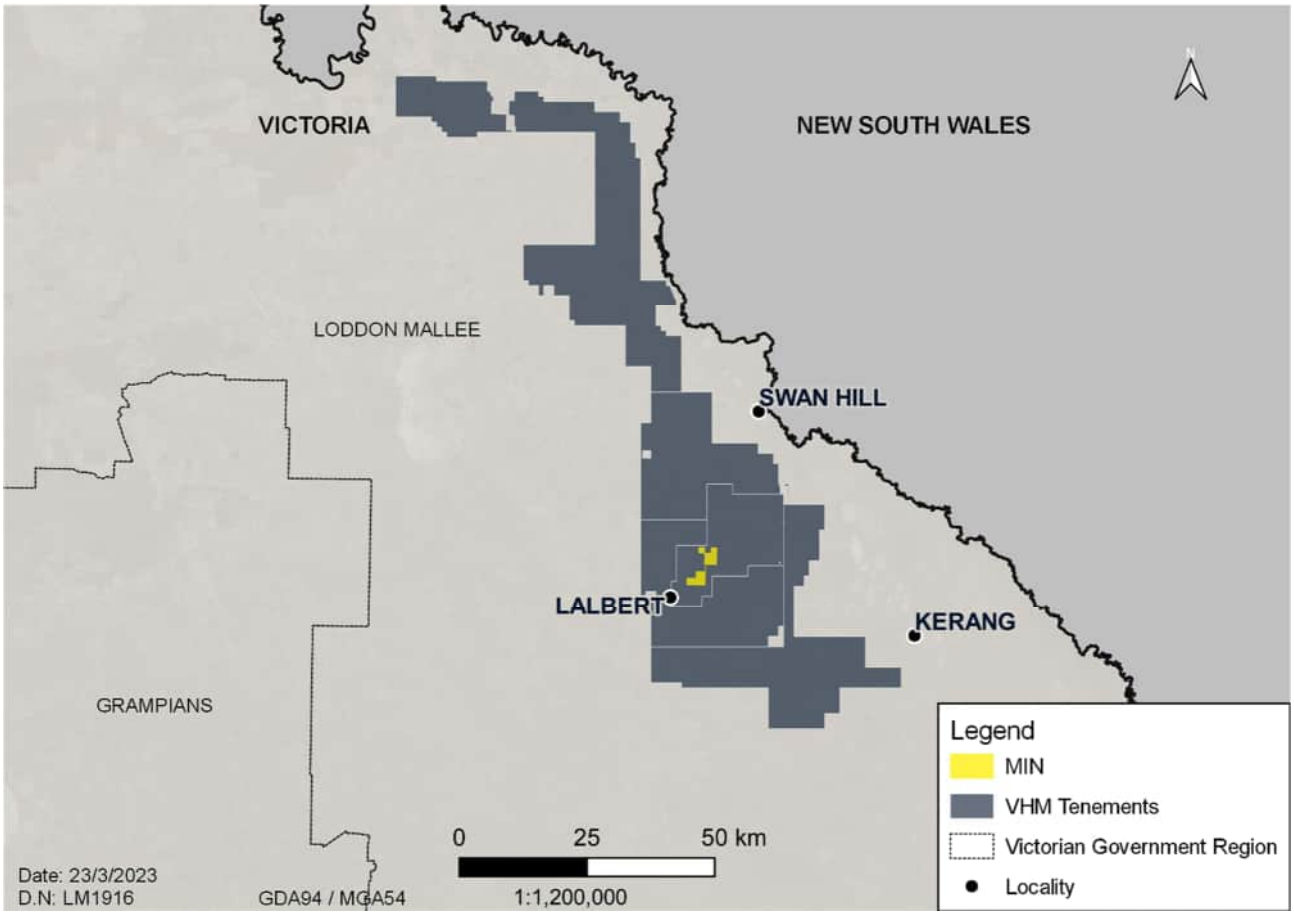

Figure 1 Goschen Project Location

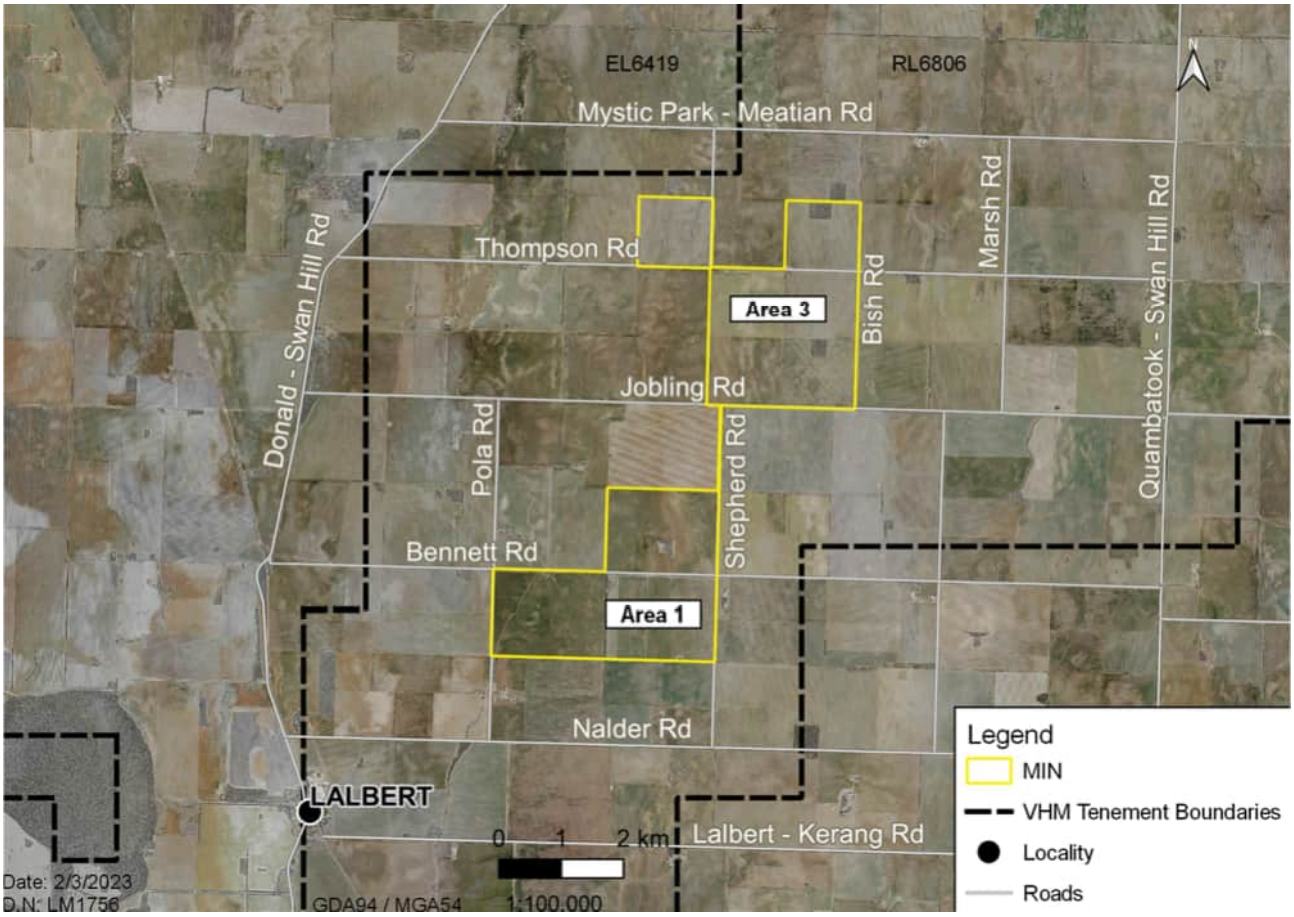

Figure 2 Mine Footprint

2.2 Project summary

SUMMARY	
Project Name	Goschen Rare Earths and Mineral Sands Project
Address:	Bennett Road, Lalbert
MIN Area Size:	1,534.6 hectares
Licensee:	VHM Limited
Land Tenure:	Freehold
Depth Limitations:	None
Area of Disturbance:	Approximately 1,247 hectares
Maximum Area of Disturbance at any one time	400 hectares

VHM has been developing the Goschen Project in MIN007256 (Figure 1 below) in the context of a rapidly growing global demand for rare earths.

Exploration undertaken to date has discovered a significant high-grade zircon, rutile and rare earth mineral deposit. The project includes mining and processing of heavy mineral sands and rare earths in stages over an approximate mine life of 20-25 years using a stepped approach to reach peak throughput rates over two key mining areas (Area 1 and Area 3). Production will commence in Area 1 and will increase to an approximate 5 Mtpa Run of Mine (ROM) throughput capacity, which will continue into Area 3.

The mine footprint and depth has been restricted to avoid intersection with groundwater and significant areas of remnant native vegetation.

In summary, the project will include:

- A process plant and power generation plant.
- Supporting infrastructure, including raw water delivery pipeline and water storage, process water storage, offices/ administration, lunchroom, ablutions, workshops, stores, fuel and chemical storage and wastewater treatment plant.
- Haul roads across the operational areas.
- Surface water management (sediment basins, drains, diversion bunds) to manage stormwater runoff across the operational areas.
- Development of Area 1 and Area 3 including topsoil, subsoil, overburden storage areas, within mining blocks.
- Placement of tailings within tailings cells (in-pit Tailings Storage Facilities, referred to as Tailings Cells, within mined voids and return of overburden, subsoil and topsoil.
- Services corridor between two mining areas (Area 1 and Area 3), including power supply, process water, ore slurry and tailings return pipelines.

2.2.1 Overview of mining method

The mining sequence is a conventional open cut operation comprising removal of topsoil and overburden to expose the ore which extends from a depth of approximately 20 m to 50 m below current surface.

Topsoil will be stripped to a nominal depth of 200 mm and stockpiled for rehabilitation in nominated areas, with topsoil stockpiles to a maximum height of 2 m. Where practicable, direct transfer of topsoil from new mine blocks to adjacent cells undergoing rehabilitation, avoiding double handling and stockpiling will occur.

Beneath the topsoil is a clayey subsoil (B-horizon) and beneath this, a clayey overburden above the thick layer of more sandy overburden. The soil profile will be stripped as per the pre-strip soil survey and the SSMP, with the nominal sub-soil thickness of 800 mm and preserved strictly for use within the reinstated soil profile. This subsoil material will not be used for any civil purposes like construction of hardstands, sealing of dams or construction of in-pit bunds. It will be preserved exclusively for rehabilitation purposes. The existing subsoil is important to the rehabilitated soil profile as it provides moisture and nutrient retention among other things. As per topsoil, dedicated stockpiles will be created for all subsoil material to ensure its preservation for rehabilitation purposes. Sub-soil stockpile heights will be no higher than 2 m, other than where the characteristics of the subsoil will not be affected by a greater maximum height (e.g. as assessed by an agronomist).

Following topsoil and sub-soil stripping, overburden will be stripped and, where not used in construction activities, will be stockpiled.

All management of topsoil, subsoil and overburden will be undertaken with input from an agronomist as part of implementation of the Soil and Stockpile Management Plan (SSMP) to maximise rehabilitation outcomes.

2.2.2 Overview of tailings disposal and mine void backfilling

Mined out voids will be used to return tailings from processing operations and so avoid the need for construction of dedicated above-ground tailings storage facilities.

Sand and fines tailings will be combined and co-disposed in the in-pit tailings cells. A flocculant will be added to improve handling, dewatering and consolidation time of the tailings.

Tailings cells will be created in two adjacent mining blocks with the next mining block void partially filled with overburden to create an in-pit, engineered tailings embankment. These embankments permit mining to proceed in successive blocks while tailings emplacement and overburden backfill occur sequentially in mined out areas.

Tailings generated from the first four (approximate) mining blocks will be placed in an initial below ground tailings cell to the immediate east of the Processing Plant area, to allow for mining of ore and tailings cell construction in mining voids, before being placed sequentially in Cell 1 as part of progressive rehabilitation.

Tailings will be deposited in voids to backfill to about the depth of the top of the orebody, allowing space for subsequent replacement of overburden, subsoil and topsoil to restore the upper subsurface and landscape to as close as possible to the original landform and levels.

This design and process is further described in section 5.2.2 below.

2.3 Disturbance Footprint

The location and layout of mine infrastructure have been designed to avoid and minimise impacts to native vegetation. Approximately 1,247 ha of the 1,534.6 ha of MIN007256 will be disturbed during construction and operation of the mine (refer to Figure 8 and Figure 9).

Based on the mine sequence and design, at any given time, approximately 400 ha of the mining licence area may be disturbed, comprising approximately of:

- 40 ha for processing plant, ancillary and power station area;
- 115 ha for mining blocks in various stages of mining, tailings deposition and rehabilitation (nominally 8 blocks in various stages of stripping, mining, tailings placement and rehabilitation active at any one time)
- 180 ha for stockpiles
- 65 ha of additional land disturbed for haul roads, surface drainage and other mining infrastructure etc.

Given the progressive rehabilitation and moving pit design that is applicable to this type of mining, the disturbance footprint changes throughout the life of the mine as the pit and stockpiles move through the work plan area.

Mining will essentially reach a steady state of progression as the mine advances through the work plan area with; blocks in advance of the active mining being stripped and prepared for mining, blocks being actively mined and blocks being rehabilitated.

2.4 Environmental and Social Setting

2.4.1 History and Past Land use

The landscape typical of the region and of the Work Plan area is predominantly cleared for croplands, consistent to its historical land use as broadacre dryland cropping for production of wheat, barley, pulses, legumes and livestock grazing.

There is no history of mining on the land, however there are two former Council borrow pits within the MIN boundary. They are understood to be less than 5 m in depth and have not been backfilled. These former borrow pits are within the Area 1 mining area and will be incorporated into progressive rehabilitation and therefore dealt with prior to the rehabilitation phase.

2.4.2 Climate

The area experiences a relatively dry climate where average monthly rates of rainfall are exceeded by evaporation in all months of the year. Climate data was obtained from the Bureau of Meteorology Station at Lake Boga (Kunat), ID 77021, located approximately 10 kilometres north-east of the Study Area. Mean minimum and maximum temperatures range between 9.7°C to 23°C. Average annual rainfall is 327 millimetres (Table 2) and evaporation 1,620 millimetres.

The area is classed as a low rainfall cropping zone, being less than 350 millimetres per annum. The growing season rainfall for winter cropping in the area falls between April and October, with rainfall spread reasonably evenly across all months. There is a net moisture deficit annually and the moisture deficit is most significant over the warmer summer months. This moisture deficit presents a risk for rehabilitation during vegetation establishment.

Table 2 Annual average rainfall data

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
23.9	21.0	20.4	21.4	31.3	26.9	33.8	33.2	31.0	34.9	27.8	20.7	327.3

(Source: Data taken from BoM, Lake Boga (Kunat) station, referenced in CDM Smith, 2023)

2.4.3 Topography

The Project area is characterised by a gently undulating topography, with small depressions in the landscape. The Cannie Ridge is located on the east side of the Project area, trending from north to south, and represents a peak in the regional topography at 125 metres AHD. The lowest point in the region topographically is 53 metres AHD, which is characterised by Lake Lalbert, located 4 kilometres west from the Project area.

Within the Project area the topography ranges from approximately 90 m to 125 m Australian Height Datum (AHD) and is characterised by the north–south-orientated Cannie Ridge that can be seen transecting the proposed pit areas as shown in Figure 3. Surface gradients are typically less than 2%. There are no outstanding landscape features located within or near the Project area.

Surrounding the Project area, the main landform is a wide flat alluvial plain with minor features such as swamps, shallow lakes, lunettes, sand sheets and minor drainage features. The main water features near the Project area are Lake Boga to the northeast and the Kerang wetlands 15 kilometres to the east.

The gentle landform gradients with limited relief and absence of natural watercourses, suggest the landform poses minimal constraints to the proposed mining and rehabilitation operations.

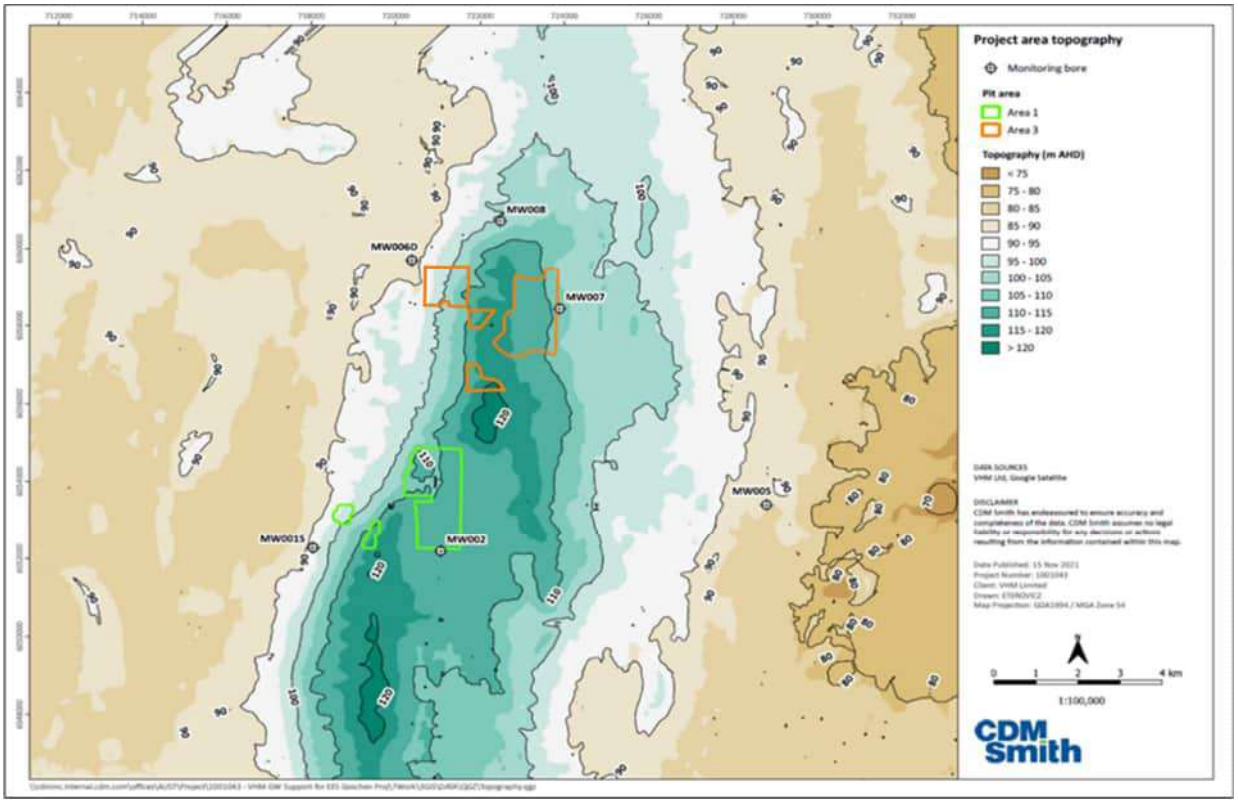

Figure 3 Project area topography (reproduced from CDM Smith)

2.4.4 Hydrology

The Project area has relatively low rainfall and is not in direct proximity to any waterways. CDM Smith (2023) describes the surface water drainage patterns of the Project area, indicating that surface water runoff within the Project area flows predominantly to the west. While there are more defined flow paths across Area 1 than Area 3, the runoff from both areas largely forms isolated pools in depressions and quickly infiltrates or evaporates.

The closets waterways include:

- Murray River – 30 km north at its closest point to the mine site, the Murray River forms part of the Murray–Darling basin river system which drains most of the inland waterways in Victoria and New South Wales
- Avoca River – 18 km southeast and east of the mine site, the Avoca River has a history of flooding, with significant events in September 2010 and January 2011 and October/November 2022 which filled the Avoca Marshes and flowed through to Lake Boga. The river is an ana-branching system, with the majority of floodwater leaving the river downstream of Charlton and spreading across the floodplain and through various anabranching waterways
- Back Creek – 14km to the east, Back Creek is part of the Avoca floodplain and is one of its anabranching waterways. It also drains a large local catchment to the west of the Avoca River and flows back into the Avoca River system at the Avoca Marshes; and
- Lalbert Creek – 10km to the southwest Lalbert Creek is an ephemeral stream of the Avoca River, carrying flood flows to the terminal lake systems of Lake Lalbert and Lake Timboram.

Lalbert Creek and Back Creek catchments intersect the Project area. Lalbert Creek catchment intersects the southwestern corner of Area 1. Back Creek originates on the eastern boundary and flows in an easterly direction into Avoca River system. The local catchment is gently undulating, with a large, raised dune running north–south through the middle of the tenement areas. Due to the low rainfall,

sandy soils with high infiltration and gradually sloping land surface, the formation of natural waterways appears to be inhibited.

2.4.5 Local Geology

The outcropping geology at the Project site is comprised of a thin quaternary cover of sandy clay and ranges from approximately 5 – 10 m. The quaternary material overlays tertiary sediments including the Loxton Sand (formerly 'Loxton–Parilla Sand/s'), which hosts the target mineralisation zone. This unit consists of a typically well sorted, fine to medium grained, quartz rich sand) and has an average thickness of 50 m across the basin. The deposit has both sheet-style and strandline mineralisation within original fluvial, marginal marine and marine environments.

The site stratigraphy is summarised as follows:

- Topsoil/Quaternary - Loam and sandy clay – 5-10 m thick;
- Loxton-Parilla Sand - Coarse-grained to gravelly quarts-rich sand – 35-55 m thick;
- Geera Clay - Dark grey/black clay of low plasticity – 32-46 m thick;
- Olney Formation - Dark grey/black silty clay of low plasticity – 13-25 m thick; and
- Warina Sand - Coarse-grained sand with clayey interbeds, minor shale.

The Goschen site has a relatively simple lithology. From the geotechnical perspective the site lithology is relatively simple and can be described as topsoil over clays and silty sands with discontinuous areas of cemented sands which in places represent as weak and very weak sandstones. These layers have been considered as overburden and overly the mineralised fine to medium sand which is the layer that is of primary interest to the mining operation.

Additional information on site geology is provided in the Geotechnical Assessment (pitt&sherry, 2023b, 2023c).

2.4.6 Soils

The Project's Soil & Land Resource Assessment (SLR, 2023) identified one soil map unit (SMU), a Calcic Red-Brown Calcarosol, in the Study Area, having been mapped according to the dominant Australian Soil Classification (ASC) soil type (Table 3). The Calcic Red Calcarosol and Calcic Brown Calcarosol soil types are dominant across the Study Area.

Table 3 Soil types within the Study Area

ASC Soil Type	Soil Type Group	Hectares
Calcic Red Calcarosol	Dominant	1,492
Calcic Brown Calcarosol		
Eutrophic Red Chromosol	Sub-Dominant	
Subnatric Brown Sodosol		

It is possible that the "original" soil type across the entire Study Area was a Calcarosol, with the actual physical textural characteristics of the topsoil (A horizon) having changed through loss of fine clay particles due to wind erosion, resulting from the rabbit plagues of the late 1880's and 150 years of cultivation in the Mallee region, with minimum and zero tillage methods only adopted in the early 1980's.

The characteristics of the identified soil types are:

- Calcarosols are soils which are calcareous throughout the solum, or calcareous at least directly

below the A1 horizon, or within a depth of 0.2 metres. Carbonate accumulations must be judged to be pedogenic. Calcarosols do not have a clear or abrupt texture contrast between the A and B horizons;

- Chromosols are soils with a strong texture contrast between the A horizon and B horizon where the B horizon is not strongly acidic or sodic; and
- Sodosols are soils with a strong texture contrast between the A horizon and a sodic B horizon which is not strongly acidic.

SLR (2023) undertook sampling and analysis of topsoil and subsoil materials from 14 detailed soil description sites. Soil physical and chemical attributes were analysed. A generalised summary of soils attributes in the topsoils and upper part of the subsoil profile, is as follows:

- pH ranges from neutral to very strongly alkaline in topsoils; and strongly alkaline to very strongly alkaline in subsoils;
- salinity (measured as ECe) ranges from non-saline to slightly saline in topsoils; and non-saline to moderately saline in subsoils;
- texture ranges from sandy loam to clay loam in topsoils; and light clay to medium clay in subsoils;
- exchangeable sodium percentage (ESP) indicates non-sodic properties in topsoils; and non-sodic to sodic properties in subsoils. Deeper subsoils (nominally >50 cm depth) commonly have high ESP and high field dispersion properties;
- dispersion rating as estimated by the Emerson Aggregate class is typically moderate in topsoils; and moderate-high in subsoils; and
- Ca:Mg ratios indicate predominantly balanced conditions in topsoils, tending to calcium deficient in subsoils. magnesium is not deficient.

The site backfilling plan intends to restore to as similar as possible the existing site geology and soil conditions. The plan identifies three discrete horizons of overburden, subsoils and topsoils that will be independently managed, separated and replaced in reverse order as part of the backfilling plan. Specific geotechnical and chemical/fertility aspects of each material have been acknowledged in developing the soil amelioration plan, detailed in the Soil and Stockpile Management Plan.

A key management issue for operational stockpile management and rehabilitation is the soils dispersibility particularly associated with the subsoils. A comprehensive program of amelioration with gypsum is proposed to help minimise the impacts of dispersion and soil structural decline and optimise soil properties on return to rehabilitation areas. This is detailed in the Soil and Stockpile Management Plan.

2.4.7 Hydrogeology

Four regional hydrogeological units have been identified and are described in the Groundwater Impact Assessment (CDM Smith, 2023):

- Loxton Parilla Sands, which forms the main aquifer in the Study Area, with aquifer thickness ranging from 35 to 55 m.
- Geera Clay, which acts as an aquitard in the region, separating the Loxton-Parilla Sands and the underlying Renmark Group aquifer, with aquitard thickness ranging from 32 to 46 m; and
- Renmark Group, consisting of the Olney Formation underlying the Geera Clay and the Warina Sand which forms an aquifer underlying the Olney Formation.

There are no licenced or stock and domestic bores domestic within 10 km of the Study Area. All monitoring bores have recorded electrical conductivity (EC) of over 19,000 uS/cm (up to 44,100) and TDS of over 13,000 mg/L (up to 29,500) (CDM Smith, 2023), making the groundwater unsuitable for any agricultural or domestic use. The Project has been designed to minimise impact to groundwater, specifically by limiting extraction depths to above the water table.

The Groundwater Impact Assessment does identify some groundwater mounding is likely due to tailings dewatering, but the mounding effects are generally localised around the mine pits. Potential groundwater contaminants have been identified. Forward particle tracking shows that for a pre-defined period of 10,000 years the approximate zone of potential contamination in groundwater travels at a distance of 2 km. Leachability testing is still ongoing and testing and modelling to date is conservative. Potential impacts associated with groundwater dependent ecosystems (GDEs) were assessed, and it was concluded that the proposed mine is not expected to impact GDEs associated with nearby wetlands and water features such as Lake Lalbert, Avoca Marshes and other unnamed wetlands in closer proximity.

The assessment also considered groundwater fauna. Groundwater fauna are found in aquifers across Australia, predominantly in aquifers with large pore spaces, especially alluvial, karstic and some fractured rock aquifers. The size of the pore spaces is a key determinant of the suitability of an aquifer as stygofauna habitat. The assessment found that the aquifer environment beneath and surrounding the site is highly unlikely suitable for groundwater for reasons including the high groundwater salinity, small pore spaces and low permeability.

2.4.8 Radiation

The radionuclide content of surface soils in the Project area are consistent with worldwide soil radionuclide concentrations. On this basis, the soils do not have elevated levels of these radionuclides.

The background gamma radiation dose rate vary, as they depend primarily on the natural levels of radionuclides in soil. A portion of the background gamma dose rate also comes from cosmic radiation. The results of monitoring show an average similar to the gamma dose rates in other areas of Australia.

Groundwater contains naturally occurring radionuclides, which are present due to a combination of locational geology, hydrogeology and land-use practices (past and present). Both U and Th were below detection limits of 0.01 mg/L which equated to 0.1 Bq/L U-238 and 0.041 Bq/L Th-232. Pb-210 was detected in only one sample with an activity concentration of 0.15 Bq/L. The radium concentrations in the study area groundwater are elevated, and the groundwater exceeds Australian Drinking Water guidelines. However due to its high salinity, this groundwater is not used for human consumption, stock watering or irrigation.

These baseline (naturally occurring) levels of radiation provide the basis for setting appropriate closure targets, i.e., less than or equal to baseline levels found within the Project area. Further information on radiation in the Radiation Impact Assessment (JRHC Enterprises, 2023).

2.4.9 Native Flora and Fauna

The existing vegetation across the project area (pre-mining) is dominated by pasture supporting introduced grasses and weeds. Areas of native vegetation (less than 10% of the project area) represent mostly disturbed habitat and are concentrated along public roads, as well as farm lanes and fences separating farm properties. A few large remnants of native mallee vegetation occurred in private land, ranging in size from 5 and 20 ha. Numerous scattered trees occurred in farmed paddocks, most of which were old multi-stemmed mallee eucalypts, although Buloke and Slender Cypress Pine were occasionally recorded.

Where farmhouses and outbuildings occur in private property, planted trees are common. Planted tree species include Pepper Tree and Sugar Gum, both introduced species.

Across the broader study area Mallee woodland comprises the vast majority of the native vegetation recorded, occurring on red sands throughout the central and east. The western portion of the study area is on the edge of a floodplain and portions support a healthy canopy of large Black Box trees over a chenopod dominated understorey. Small, scattered occurrences of Buloke Woodlands existed in the western and northern parts of the broader study area.

Remnant mallee vegetation was distinguished by an open canopy of typical mallee eucalypts. The four most common canopy trees recorded were Dumosa Mallee, Oil Mallee, Red Mallee and Bull Mallee, many of which were old growth multi-stemmed trees. The understorey often comprised a mid-layer of shrubs (including Cattle Bush, Weeping Pittosporum, Sugarwood and Umbrella Wattle) as well a diverse ground layer of saltbushes, with Hedge Saltbush, Prickly Saltwort, Ruby Saltbush, Grey Copperburr and Black Cotton-bush commonly recorded. Native grasses and herbs were present but generally sparse. Common herbs included Pale Twin-leaf and Variable Sida. Introduced flora varied in cover across the study area and survey period, with the vast majority being annual grasses, which had died off by the time of the summer and autumn surveys. Other common weed species included African Box-thorn and Common Heliotrope

An understanding of the types and distribution of existing vegetation (and the fauna species that use different habitats) helps to inform the selection of flora species to revegetate the different land use zones in the final post-mining landform. For example, native species currently occurring in the project area, could be selected for revegetation of mined areas that provide habitat for listed threatened species known to occur or that have the potential to occur within the project area.

2.4.10 Cultural and Historical Heritage

Cultural heritage

There is no cultural heritage sensitivity layer overlying the MIN or adjacent areas.

A review for historical heritage was completed by Eco Logical Australia (Eco Logical Australia, 2023). The desktop assessment and subsequent standard assessment (survey) for cultural heritage, did not identify any cultural heritage evidence within the MIN.

Historic heritage

A review for historical heritage was completed by Eco Logical Australia (Eco Logical Australia, 2023). The desktop review did not identify any historical heritage sites or sites of archaeological potential within the MIN or in the local vicinity (2 km) of the mining area.

2.4.11 Summary of Proximity to Sensitive Receptors

The sensitive receptors that are inferred to be relevant for rehabilitation and closure within a 2 km radius of the mining licence are summarized in Table 4 and are shown on Figure 4 below.

Table 4 Sensitive Receptors in Proximity to the Work Plan Area (at rehabilitation phase)

Receptor category	Description of the sensitive receptor
Community and residential receptors	Five (5) dwellings within 2 km of the mining licence, excluding one dwelling where a receptor agreement will be in place during life of operations.
Historic Heritage	None
Aboriginal Cultural Heritage	None

Receptor category	Description of the sensitive receptor
Public Safety and infrastructure	eleven (11) council roads (crown land) Powerlines in the south-western block of Area 1
National parks and conservation reserves (crown land)	Talgitcha Bushland Reserve, approximately 2 km southeast
Biodiversity and ecosystems	Across the broader study area Mallee woodland comprises the vast majority of the native vegetation recorded, occurring on red sands throughout the central and east. The western portion of the study area is on the edge of a floodplain and portions support a healthy canopy of large Black Box trees over a chenopod dominated understorey. Small, scattered occurrences of [redacted] existed in the western and northern parts of the study area.
Surface water	No registered waterways
Groundwater	No register groundwater bores for use- the closest being 10 km.

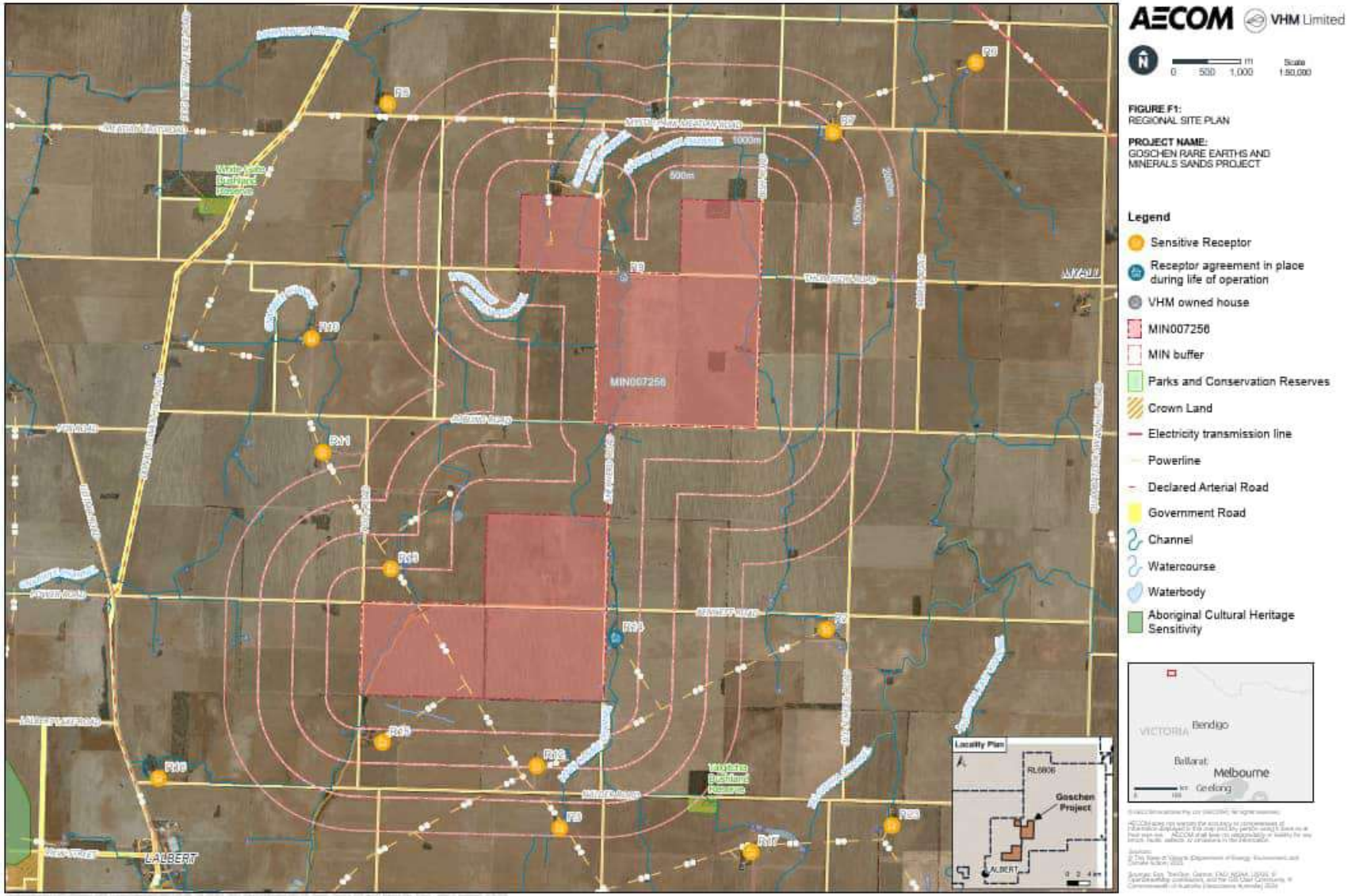

Figure 4 MIN007256 and sensitive receptors

3. Stakeholder Identification and Community Engagement

3.1 Land Tenure

All land within the MIN is freehold owned by VHM, with the exception of road reserves (Crown Land).

Figure 5 Land tenure in relation to mining licence boundaries

3.2 Stakeholder and Community Engagement

3.2.1 Purpose and Objectives

The Goschen Project's Community Engagement Plan (CEP) sets out VHM's plan to engage stakeholders in the Loddon-Mallee region of Victoria for the life of the Goschen Rare Earths and Mineral Sands Project. It provides a clear and effective framework to engage purposefully, openly, consistently and effectively to maximise stakeholder involvement.

The objectives of the CEP are to:

- Provide a framework for community engagement throughout the life of the Project
- Identify relevant stakeholders and communities and understand their values, attitudes, interests, expectations and concerns
- Analyse stakeholders and establish the most appropriate levels and methods of engagement
- Establish clear lines of communication with stakeholders and community
- Outline how stakeholder and community enquiries, feedback and grievances are recorded and provide a process for resolving any related issues
- Provide a framework for escalating grievances, when required
- Evaluate community engagement activities and identify opportunities for continuous improvement.

The CEP has been developed in accordance with the Community Engagement Guidelines for Mining and Mineral Exploration in Victoria and incorporates concepts developed by the International Association for Public Participation (IAP2).

3.2.2 Consultation

Consultation and stakeholder engagement has been undertaken for the project with a broad range of community participants and stakeholders. Consultation is ongoing and has in the past involved community information sessions at Lalbert, Kerang and Swan Hill. Rehabilitation and closure have been topics of interest raised by stakeholders and community members at various events to date.

3.2.3 Engagement with Traditional Owners

VHM's initial engagement with the Traditional Owners (TO) of the region was through the Wamba Wemba/Barapa Barapa Working Group (WWBBWG). At the 25 May 2018 meeting it was confirmed that the Goschen Project was within the Wamba Wemba Traditional country, and that most of the WWBBWG members present at the meeting represented Wamba Wemba Traditional Owner interests.

Representatives of the Wamba Wemba TO were invited and participated in the cultural heritage field surveys between 19 and 23 April 2021. Discussions with the TO representatives during the survey established the potential sensitivity of the study area and the likely impacts on any potentially archaeologically sensitive areas. It was noted that a majority of the study area had been subject to disturbance due prior channelling, quarrying and agricultural activities. On November 10 and 11, 2021 a second standard assessment was held to cover the proposed water supply pipeline and pumping station around Kangaroo Lake, no Aboriginal cultural heritage was identified. On 21 July 2022, a third visit was held to inspect a redesign of the alignment of the pipeline, and additional access tracks, again no cultural heritage was identified. Representatives were informally consulted during fieldwork regarding Aboriginal cultural heritage values that may be associated with the study area. The outcomes of this consultation are reflected in:

- the agreed standard assessment methodologies implemented during fieldwork

- discussion of the results of the standard assessments
- the cultural heritage management conditions and contingencies presented in the projects' CHMP.

On 13 September 2021, an update of the CHMP, and invitation for a statement was requested. No reply was received. On 21 March 2022, another request for a statement of significance was sent to WWAC, in which WWAC confirmed that there were no tangible or intangible values recorded. WWAC also responded to the management conditions and contingencies with no additional remarks.

On 7 August 2024 the Victorian Aboriginal Heritage Council determined the Wamba Wemba Aboriginal Corporation (WWAC) as the Registered Aboriginal Party (RAP) under section 151 of the Aboriginal Heritage Act 2006 (Vic). Since the formal RAP status decision VHM has established contact with WWAC Programs and Policy Officer. VHM contributed funds to assist WWAC members to attend the inaugural Annual General Meeting in August 2024.

VHM is committed to growing a partnership with WWAC organically as the corporation establishes more resources to allow this to happen.

3.2.4 Community Views

Key stakeholder issues raised during consultation are identified in Table 5 – Community issues and concerns of the Community Engagement Plan along with the anticipated controls to address those concerns.

Issues specific to rehabilitation are incorporated directly into this Rehabilitation Plan.

4. Post-Mining Land Uses and Landform

4.1 Post-mining Land use

The overall mine rehabilitation concept is, as far as reasonably practicable, to restore the land disturbed by mining and mineral processing to an achievable and sustainable land use capability, suitable for both agricultural land and native vegetation.

A description of the end land uses is provided in Table 5 and shown on Figure 6 and Figure 7 (also provided in Appendix A).

Table 5 Post Mining Landuse

End Land Use	Post Mining Land Use	Comments
Agricultural Land	Agricultural land- with a broad range of agricultural land uses. The exact nature of the agricultural use is not prescribed and will be open to decisions by future landowner or occupiers. Fundamentally, the goal of rehabilitation is to restore land disturbed by mining to an equivalent (or better) agricultural land capability to enable a broad range of future agricultural uses. A post mining agricultural land use has been identified as an appropriate and desirable outcome and has been insisted on based on feedback from community and stakeholder engagement. VHM is committed to achieving this objective and this Rehabilitation Plan demonstrates the rehabilitation procedures, monitoring practices and closure obligations that will ensure these objectives are met.	The site landform, soils and hydrology present relatively limited constraints to achievement of this final land use. The site landform is very flat; therefore, the final landform and topography is well understood and relatively simple to recreate (albeit due to the material balance the final landform will be slightly raised). The Site contains no watercourses and hence the proposed mining and final landform present minimal drainage and water quality risks. Soils have been thoroughly investigated and though soils constraints do exist with respect to alkalinity, structure, sodicity and salinity, mitigation methodologies are available and are readily implementable. Specific topsoil and subsoil handling procedures have been developed to ensure preservation of the site's valuable soils resources.
Public roads	Existing public roadways (Bennet Road and Thompson Road) that will be temporarily closed by mining will be reconstructed and recommissioned for public use, with roadsides to be vegetated.	The design and requirements of the sections of Bennett Road and Thompson Road to be reinstated will be agreed with local council (Gannawarra Shire Council) as the local road authority in advance of rehabilitation activities along these sections. Areas of native vegetation disturbed as part of the mined/ closed portions of Bennett Road and Thompsons Road, will be revegetated with species planted based on the current EVC. Revegetation will be in consultation with local Council.
Native vegetation	Any areas planted with native vegetation (such as boundary amenity plantings) prior to or during mining will be retained in the post-mining landform.	Any native vegetation planted is to select appropriate local species, in line with identified EVCs.

End Land Use	Post Mining Land Use	Comments
	Should additional native vegetation be planted during mining opportunistically, these will also be retained post-closure.	
Existing sensitive areas	Retained vegetation to remain undisturbed during life of mine.	N/A
Land not disturbed by mining	Land will not be disturbed by mining, however, will be, as far as practicable, incorporated into adjoining agricultural land.	N/A

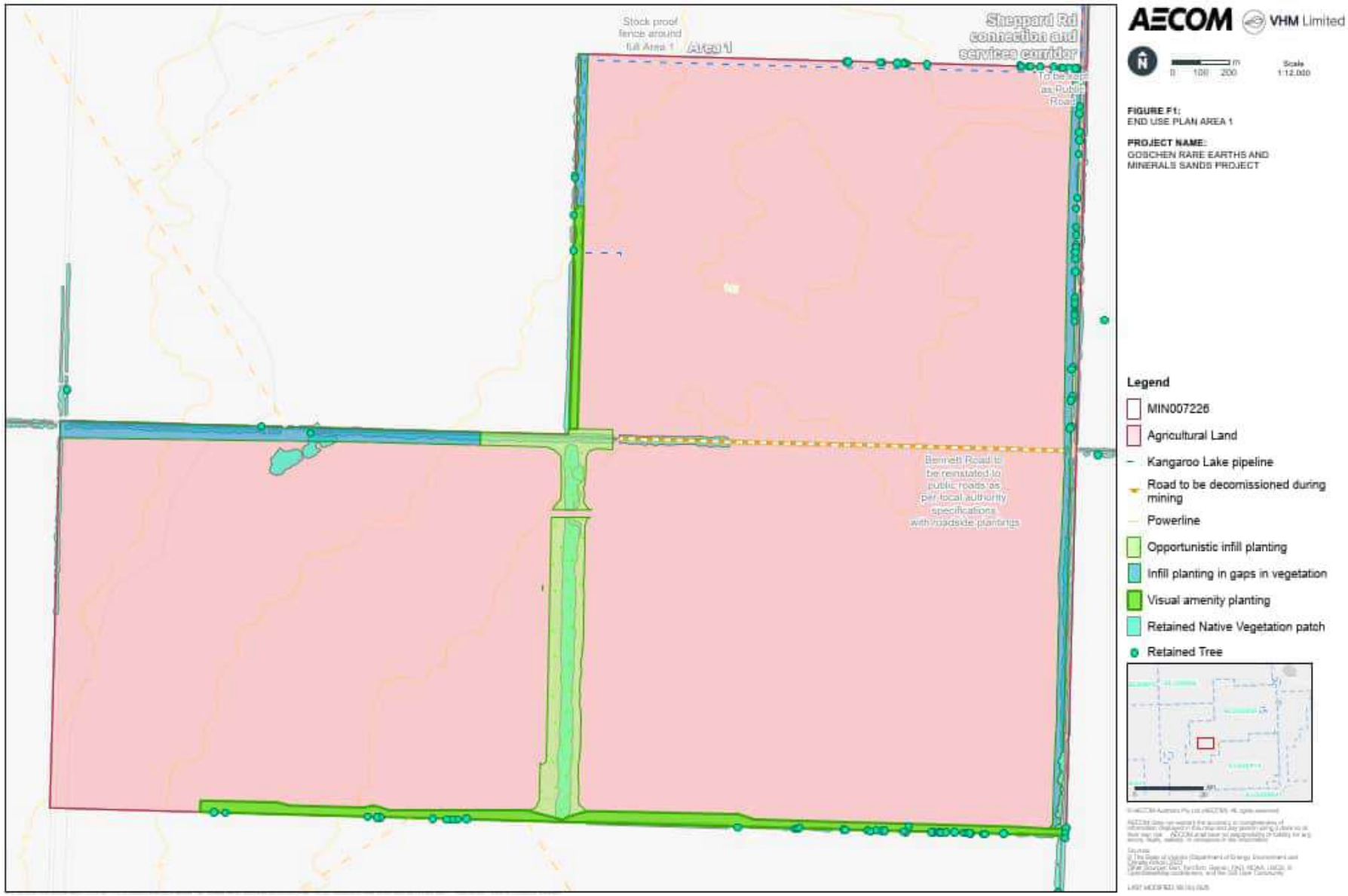

Figure 6 End Land Use- Area 1

Figure 7 End Land Use- Area 3

4.2 Post- mining Landform

4.2.1 Landform description

Rehabilitation of mining blocks will be undertaken progressively throughout the life of the mine. At closure, the processing plant and all ancillary infrastructure, including the power plant, wastewater treatment plant, water storage basins will be decommissioned and removed, unless specifically agreed for retention (e.g. raw water pipeline from Kangaroo Lake).

The post-mining landform is to be a gently undulating plain which is consistent with the existing landform. The goal is to restore final landform levels and local relief to mimic current conditions, avoiding sharp relief between the existing and rehabilitated landscapes. The landform element that best represents the existing landscape is a plain, based on the definitions in the *Australian Soil and Land Survey Field Handbook* (National Committee on Soil and Terrain, 2009).

Key design criteria for the final landform are:

- Final levels are within +/- 0.5 m of existing levels when averaged across the mining blocks based on the site material balance.
- Landform gradients will be typically less than 3% (average) across agricultural areas and avoid sharp relief between rehabilitated landscapes and surrounding lands.
- Drainage will be predominantly as sheet flow mirroring present conditions.
- Topsoil and subsoil profile restored to minimum 1m deep comprising at least 20 cm of topsoil and 80 cm of clayey subsoil material.

This final landform is readily achievable and has been comprehensively assessed within the *Goschen Mineral Sands and Rare Earth Project Geotechnical Impact Assessment* and *Basis of Design* (pitt&sherry, 2023c and 2025 respectively), which addresses factors including settleability of tailings and overburden, and provides a backfill sequence to achieve the desired final levels. Design of the mining methodology and sequencing of operations has been developed with a core focus on achieving a backfilled landform consistent with current conditions.

As assessed in the Basis of Design (pitt&sherry, 2025) and in the supporting technical memo in Appendix C, the final landform is safe, stable and sustainable. It presents a very low relief environment with no steep gradients or unstable slopes, no watercourses and no complex landforms to reinstate. The very low site gradients and low erosion hazard of the region indicates a very low risk of instability of the final reconstructed landscape. The final landform will support a range of potential agricultural uses consistent with the agricultural activities that occur throughout the region.

Final landform figures and cross sections are presented in Appendix A and represent the conceptual final landform with topographic contours describing the very gentle slopes and absence of sharp relief or incised drainage lines.

4.2.2 Materials balance

Area 1

VHM's mine planning consultant used Geovia's Surpac Mine Planning software to design the pit outline and tails cell construction in three dimensions from the resource block model. Scheduling was undertaken using Geovia's MineSched tactical mine planning software to sequence ore and waste (clay overburden and sand overburden) and subsoil/topsoil materials removal. MineSched was then used to model tailings, overburden and subsoil/topsoil replacement over the life of the mine and determine stockpile balances in monthly increments.

The material balance and backfill volumes across the disturbed domains in Area 1 and Area 3 were calculated from these using swell factors based on laboratory test work undertaken by ATCW as part of the tailing cell design. Swell factors varied according to the material type, as detailed in Table 6. The table shows that there will be an excess of approximately 5.1 M BCM and 11 M BCM once the Area 1 and Area 3 pits have been backfilled respectively.

The material balance is based on current landform design and material assumptions. The final material balance will be refined based on material tracking during operations, including aerial surveys, outcomes of rehabilitation trials and Cell 1 rehabilitation to reassess assumptions including bulking factors and consolidation based on actual rehabilitation.

As detailed in section 4.2.1, any surplus will be accommodated within the overall project footprint by selectively raising the topography and contouring to maintain surface water flows and blend in with the natural surface, however this would be planned and undertaken before sub-soil and topsoil placement.

Table 6 Area 1- Life of Mine Material Balance

Soil type	Volume (m^3)	Swell Factor	Swelled Volume (m3)	Backfilled volume capacity (m^3)	Excess (m^3)	Cumulative Excess (m^3)
Topsoil	603,500	1.00	603,500	603,500	-	-
Subsoil	2,414,000	1.00	2,414,000	2,414,000	-	-
Clay	6,196,250	1.07	6,607,500	6,196,250	411,250	411,250
Overburden	41,970,000	1.05	43,861,044	39,149,169	4,711,875	5,123,125
Ore	16,593,125	1.17	-	-	-	5,123,125
Tailings	-	-	19,413,956	19,413,956	-	5,123,125
Landform	-	-	-	5,123,125	- 5,123,125	-

Area 3:

Table 7 Area 3- Life of Mine Material Balance

Soil type	Volume (m^3)	Swell Factor	Swelled Volume (m3)	Backfilled volume capacity (m^3)	Excess (m^3)	Cumulative Excess (m^3)
Topsoil	860,912	1.00	860,912	860,912	-	-
Subsoil	3,443,649	1.00	3,443,649	3,443,649	-	-
Clay	13,819,847	1.07	14,737,081	13,819,847	917,234	917,234
Overburden	78,312,467	1.05	81,840,995	71,034,448	10,806,547	11,723,781

Soil type	Volume (m³)	Swell Factor	Swelled Volume (m3)	Backfilled volume capacity (m³)	Excess (m³)	Cumulative Excess (m³)
Ore	42,811,875	1.17	-	-	-	11,723,781
Tailings	-	-	50,089,894	50,089,894	-	11,723,781
Landform	-	-		11,723,781	-11,723,781	-

4.2.3 Risks to achieving final landform

The main risks to achieving the final landform relate to uncertainty over settlement and deformatio during tailings and overburden emplacement within mine cells. Differential settlement in the backfille mining cells could result in a landscape with hummocky or irregular topographic features includin poorly drained or closed depressions, or deformation features such as tension cracks.

The geotechnical modelling and analysis undertaken by Pitt & Sherry (2025b), including the TARP fo mine closure, provided in Appendix C, included assessment of potential impacts due to deformatio and settlement with mitigation measures to reduce the risk to as low as practicable. A summary of th geotechnical approach and findings is as follows:

- The assumption is that rehabilitated areas will be returned to the original landform as broad acre farming. Ground movement of the rehabilitated area may result in harm of the landform through settlement of the underlying replaced material.
- The Goschen mine has adopted a cyclic approach to mining. As mining advances and an area of the pit is excavated it is then prepared as tailings containment cells. Each tailings containment cell is filled with tailings over a period of months until it reaches its design capacity. During filling the tailing settles, and as more tailings are deposited it continues to settle as the water content is either decanted off for reuse or seeps into the pit floor. Once the tailings reach sufficient strength (refer to Table 19 for testing to ascertain this), overburden is placed on the tailings as part of the rehabilitation process. The load of the overburden on the tailings continues to compress the tailings.
- The risk of soil/ore extraction and loss impacting the proposed final landform was considered from a mass balance perspective and determined to be negligible. As a rough estimate, approximately 3% of the ore zone will be taken through ore processing to produce the mineral concentrate. This is a very small proportion (<1.5%) of the overall profile depth and this loss will be offset by bulking of the tailings and overburden during backfilling. The likelihood is there will be an excess of material resulting in a slightly elevated landscape relative to present.
- The settlement of the tailings and overburden reduces over time and is negligible after about 1 year from initial placement in Area 1 and about 2.5 years in Area 3.
- The tailings are more compressible than the material used to construct the tailings embankment and where the overburden crosses from the tailings to the tailings embankment there is a risk of differential settlement. Analysis of the settlement over time in the zone of tailings and overburden and of overburden and tailing bund indicate that differential settlement will be low as per the analysis presented in Appendix C1.
- Normal soil cultivation for cropping is likely to obscure the actual effect of any differential settlement. There is not expected to be any risk of harm to people or environmental harm. Land use harm is expected to be minor and manageable.

- Possible impacts could be minor impact on overland flow paths leading to minor impacts of the broad acre farming. The largescale cell size and existing site cross fall will assist in mitigation.

The mine life is in the order of 20 years. During this time for most cells the majority of the consolidation cycle will have occurred, and the mine will review the final landform as part of regular reviews to the Rehabilitation Plan.

Excess of backfill material and bulking of material may result in a final landform that is higher than present. This could occur due to bulking of backfill material causing an increase in volume and reduction in bulk density of the material. Geotechnical investigations have considered this and suggest this is unlikely however these assumptions will be confirmed as part of assessment of rehabilitation in the rehabilitation trials and Cell 1, further material volumes will be tracked during operations. If there is a small excess of overburden towards the end of mining, a reasonable management approach will be to spread the overburden uniformly within the final backfill cells to create an area of slightly elevated land. This will not compromise achievement of final land use goals and would be undertaken pre-placement of subsoil and topsoil to avoid material double handling.

Given the progressive nature of mine backfilling, factors like the time taken to consolidation, consolidation testing, and design of overburden placement lift thickness will be monitored. There is ample opportunity to monitor, adapt and change backfilling methods through the course of mining operations to optimise performance and address any concerns about achievement of the final rehabilitation goals.

5. Rehabilitation Domains

5.1 Overview of Domains

This Rehabilitation Plan has been designed around a set of rehabilitation domains. A rehabilitation domain is an area of land (or water) within the mine site with similar rehabilitation requirements. The rehabilitation domains for the Project are given in Figure 8 and Figure 9 (also included in Appendix A).

Table 8 Domains

Do-main #	Description	Total Area (ha)- Area 1	Total Area- Area 3	Details of Domain
1	Mining blocks and in-pit tailings cells	325	451.6	All mine cells (pits) which also service as tailing storage/disposal. Haul Roads in or adjacent to the pit area Contact stormwater dams and diversion bunds Public roads to be reinstated (Bennett Rd and Thompson Rd)
2	Processing Plant and supporting infrastructure areas	34.1	4.4 (including Sheppherd Rd connection)	Process Plant – MUPs etc ROM stockpile Workshop/Admin/Lab Contractor's yard Water Treatment Hardstands Haul roads Water storage and process water ponds associated with the process plant area, and selected surface water drainage infrastructure. Utilities, including water and power and the pipelines within the service corridor connecting Area 1 and Area 3 (process water, power, ore slurry and tailings return).
3	Stockpiles	234.8	160.0	Overburden, subsoil and topsoil stockpile areas Haul roads to access the stockpiles
4	Sensitive areas requiring protection (native vegetation)	44.3	102.0	Retained vegetation areas and associated no go zones
5	Land not disturbed by mining	96.4	81.9	Land which will be undisturbed throughout mining.
	Total (ha)	734.6	800	

Do-main #	Description	Total Area (ha)- Area 1	Total Area- Area 3	Details of Domain
	Overall total ha	1,534.6		

Figure 8 Area 1 Rehabilitation Domains

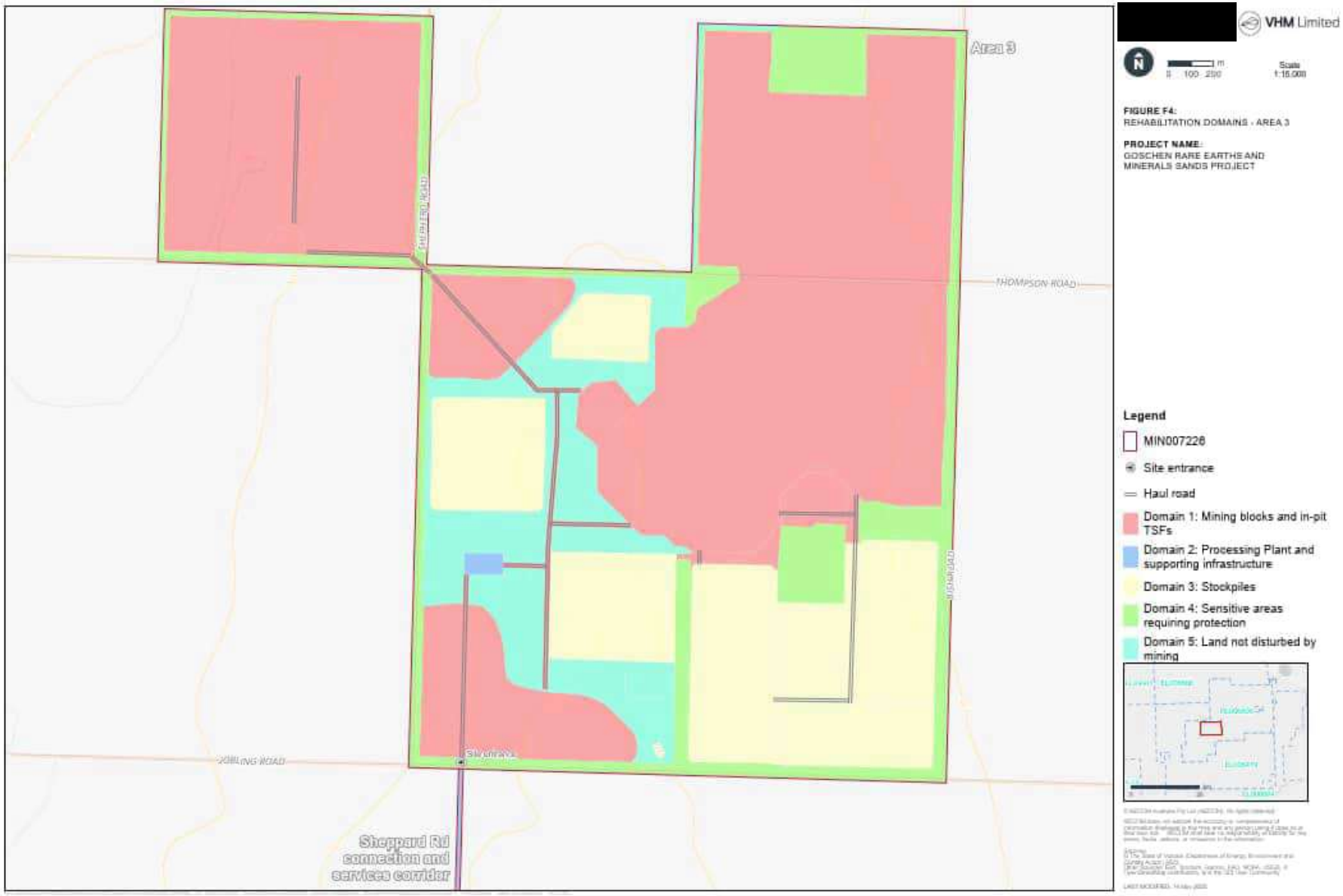

Figure 9 Area 3 Rehabilitation Domains

5.2 Domain 1- Mining Blocks and in-pit TSFs

5.2.1 Rehabilitation Concept

Table 9 Domain 1- Summary of rehabilitation activities

Domain 1	Key rehabilitation activities
The following applies to both Area 1 and Area 3: • All mine blocks which also service as tailing storage/disposal • In-pit Haul Roads • Contact stormwater dams and diversion bunds	• Removal of infrastructure and services • Controlled backfill with tailings, overburden, subsoil and topsoil. • Rehabilitation of in-pit tailings cells in accordance with ANCOLD (2019) requirements. • Contact water dams will be backfilled as per soil replacement requirements for the mining blocks. • Haul roads within or adjacent to the pit footprint recontoured, ripped, soils replaced and blended with surrounding topography. • Soil preparation and revegetation • Catchments and flow paths to mimic pre-mining. • Removal of temporary environmental and drainage controls. • Diversion channels and bunds will be recontoured to blend with final landform. • Groundwater piezometers and any temporary supply bores are sealed, except as required for long term monitoring or agreed to remain post-closure. • Reinstatement of Bennett and Thompson public roads and other infrastructure (eg stock fences) subject to any required further design and local authority approval • Reinstate roadside native vegetation in accordance with relevant Ecological Vegetation Class (EVC) • Replace boundary fencing alongside public roads

5.2.2 In-pit tailings cell closure- Design and Placement

Following mining of ore, tailing cells will be constructed within the mining block void. A typical in-pit tailings cell has been designed in accordance with ANCOLD, 2019 and is documented in *Tailings Storage Facility Design, Goschen Rare Earths and Mineral Sands Project Goshen, Victoria* prepared by ATC Williams (2025).

As per the assessment of dam failure consequence and environmental spill consequence, the in-pit tailings cells have an ANCOLD consequence category of Very Low.

The stability assessment analysed that the tailings embankment would have the relevant Factors of Safety, which meet the minimum ANCOLD requirements:

- End of deposition (EoD) of 1.8 (Acceptable FoS is 1.8); and
- EoD post-siesmic of 1.5 (Acceptable FoS is 1.0).

Based on the mine plan, tailings cells will be constructed within an engineered embankment between each tailings cell (see Figure 10) to have a tailings capacity of between 0.7 - 2.2 Mt, with an operating life of approximately 5 - 6 months. Each tailings cell will be filled with tailings of a thickness between 11 - 22 m thick.

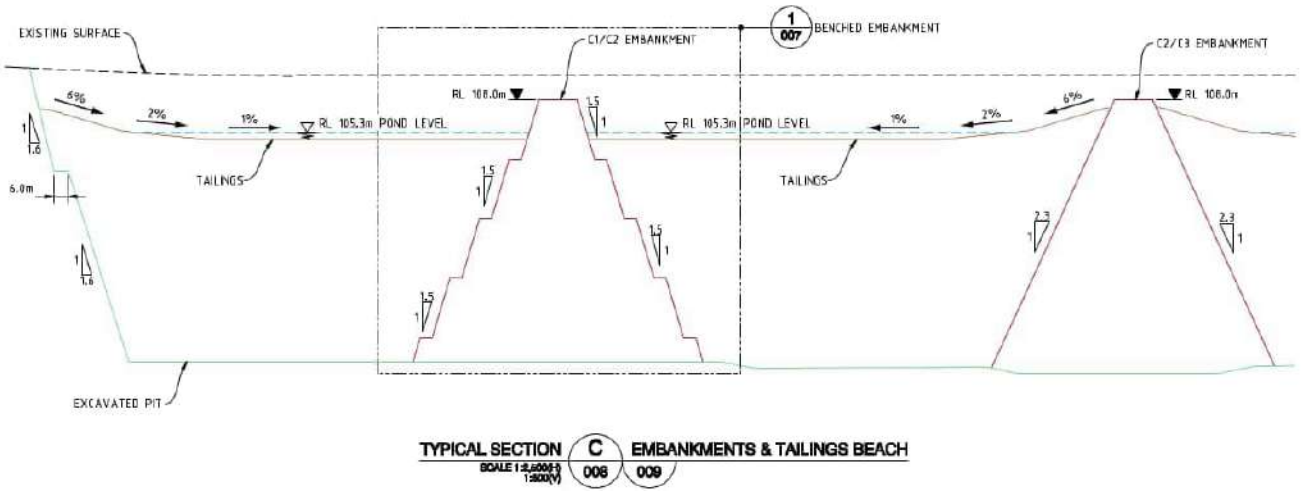

Figure 10 Typical embankments and tailings beach (ATCW, 2025)

Tailings will be deposited via spigots as per methodologies outlined in the Tailings Management Plan.

It is planned that tailings will have an initial 6 week drying and consolidation period post tails deposition prior to placement of a 5 m thick layer of overburden.

ATCW undertook consolidation modelling for the maximum tailings thickness (21.4 m) which indicated that a maximum of approximately 1.3 m–1.8 m of tailings consolidation could be expected to occur during deposition and a further 1.2 m – 1.8 m thereafter due to consolidation under self-weight followed by loading from the overburden.

For the average tailings thickness model (11.4 m thick tailings), the results indicated that 0.9 m – 1.1 m of consolidation could be expected during deposition and a further 0.4 m – 0.6 m thereafter.

5.2.3 Overburden placement

Following tailings deposition and initial 6 week drying period, overburden will be placed over the tailings, at a minimum thickness of:

- 5 m in Area 1
- 15 m in Area 3.

Timing of placement of overburden will be subject to geotechnical advice that the surface has sufficiently dried to allow for placement of overburden. As per advice in ATCW (2025) for tailings beach slopes:

- The upper beach, comprising of well drained sand, can potentially be accessed by foot within a few days or a week of ceasing deposition (subject to several variabilities).
- The toe of the beach and decant pond area will remain soft to very soft until the decant water is completely removed (and remains drained) and the surface is permitted to solar dry and the near surface tailings increases in strength to a suitable minimum strengths as per design.

In accordance with ATCW recommendations for the general proven safe method to access a tailings surface, the following will be done prior to overburden placement:

- Pump away all water from the surface
- Leave pumping equipment in place for the long term to pump away all water, including incident rainfall,
- Plan to have a fully drained surface prepared for solar drying over the summer months with high net evaporation potential. Climate data indicates high net evaporation potential from approximately November through to late February for the Swan Hill area,
- Carry out geotechnical testing of the strength of the near surface tailings and computer modelling to verify the required minimal strengths (this will vary with the proposed equipment to be used and ATCW recommends that low ground pressure equipment is used to place the initial cover). For on-going routine works that a procedure will be prepared by the geotechnical authority to be used by mining staff to verify suitable conditions for access to the tailings surface (per the Ground Control Management Plan).
- Geotechnical testing of the strength of the near surface tailings will comprise:
    - Dynamic Cone Penetrometer (DCP) density testing of predominantly sandy surface Tailings; and
    - Vane shear testing of the lower beach possibly predominantly clayey surface tailings.

5.2.4 Soil Replacement

Mining areas are to be finished with a reinstated soil profile comprising (minimum) 80 cm of subsoil and 20 cm of topsoil as described previously. Soils will be ameliorated during re-spread in accordance with the specifications provided in Table 10.

Subsoils may need to be ripped or scarified during amelioration (application of gypsum) and prior to topsoil replacement to key the topsoil in and prevent a hardpan developing at the topsoil/subsoil interface. This will be assessed in practice and if necessary incorporated into the rehabilitation methodology.

Contour scarification of topsoil is suggested to incorporate soil ameliorants into the plant rooting zone (to a depth of 10 cm) and to provide a suitable seedbed for direct seeding. A roughened soil surface also increases rainfall infiltration, reduces run-off and provides a micro-habitat allowing plants to germinate and establish. Where possible ripping and scarification will be undertaken when the soil is moist to minimise structural decline and immediately prior to sowing. The depth of ripping is based on soil thicknesses and is to be informed by agronomist advice.

The topsoil should also be firm and not compacted prior to seeding. Appropriate sowing equipment should be used to ensure good seed-soil contact.

Reinstated topsoils are to be assessed for potential water repellence prior to seeding and treated if present.

Soil samples should be taken after reinstatement of the topsoil to assess and compare the status of all nutrients as well as the soil organic matter components, with the levels prior to stripping. Where nutrient deficiencies are identified these should be addressed through the application of appropriate fertilisers. Sufficient rates should be applied to remove nutritional limitations. Where a high rate of fertilizer is required and cannot be sown with the seed, a portion of the fertilizer will be sown with the seed and the remainder broadcast prior to sowing and incorporated into the soil to a depth of 10 cm.

Table 10 Gypsum requirements prior to reestablishment (subject to confirmation of soil analysis)

Ameliorant	Topsoil	Subsoil
Gypsum	3t/ha	10 t/ha

5.2.5 Revegetation for agricultural land

Revegetation for the purpose of rehabilitation and closure prior to returning the land for agricultural use and/ or MIN relinquishment, will be aimed at achieving a desirable surface cover of annual species (crops) to protect the soil surface and restore the land to productive agriculture. The revegetation methodologies will follow accepted agronomic principles relevant to the Cannie Ridge. It is recommended that the first crop be an oat/vetch mix to improve soil organic matter and to improve soil nitrogen levels.

Subsequent crops on the reinstated areas should be the crops sown by the farmer on the areas outside the rehabilitation areas. This will provide a means of assessing the level to which pre-mining production has been restored.

Sowing of crops should only take place when there is an acceptable chance of successful establishment. Sowing of crops should not take place between mid-spring and early autumn. Watering over summer is unlikely to be feasible as up to 8 ML/ha could be required with supplemental water applied (for example 50 mm applied at intervals of 7 – 10 days if required based on the climate).

Perennial pasture species are not an option as there are very limited species available for this environment. As the final use will be to return the areas to cropping, the success of the rehabilitation will be assessed in relation to crop yields achieved on the surrounding commercial areas. In the second and subsequent years after reinstatement, the mining cells should be sown to the same crop as the surrounding unmined areas. Once rehabilitated, VHM will seek to restore active agriculture over former mining areas through appropriate arrangements and will ensure the revegetation program is targeted to achieving this end.

A Trigger Action Response Plan (TARP)- Appendix C1- has been developed to inform how corrective actions will be implemented to ensure that the land meets the set criteria for returning the land to productive agricultural land.

5.2.6 Progressive rehabilitation and sequencing

The time for the full mining sequence within each mine cell, from initial excavation of overburden, extraction of ore and replacement of tailings and subsequent rehabilitation is expected to be approximately two to four years. This will depend on factors such as weather.

A set of conceptual staged tailings disposal and backfill plans are provided in Figure 11 and Figure 12. These describe the core features of the backfill (tailings and overburden) progressive rehabilitation and use of tailings embankments to assist in tailings containment and consolidation.

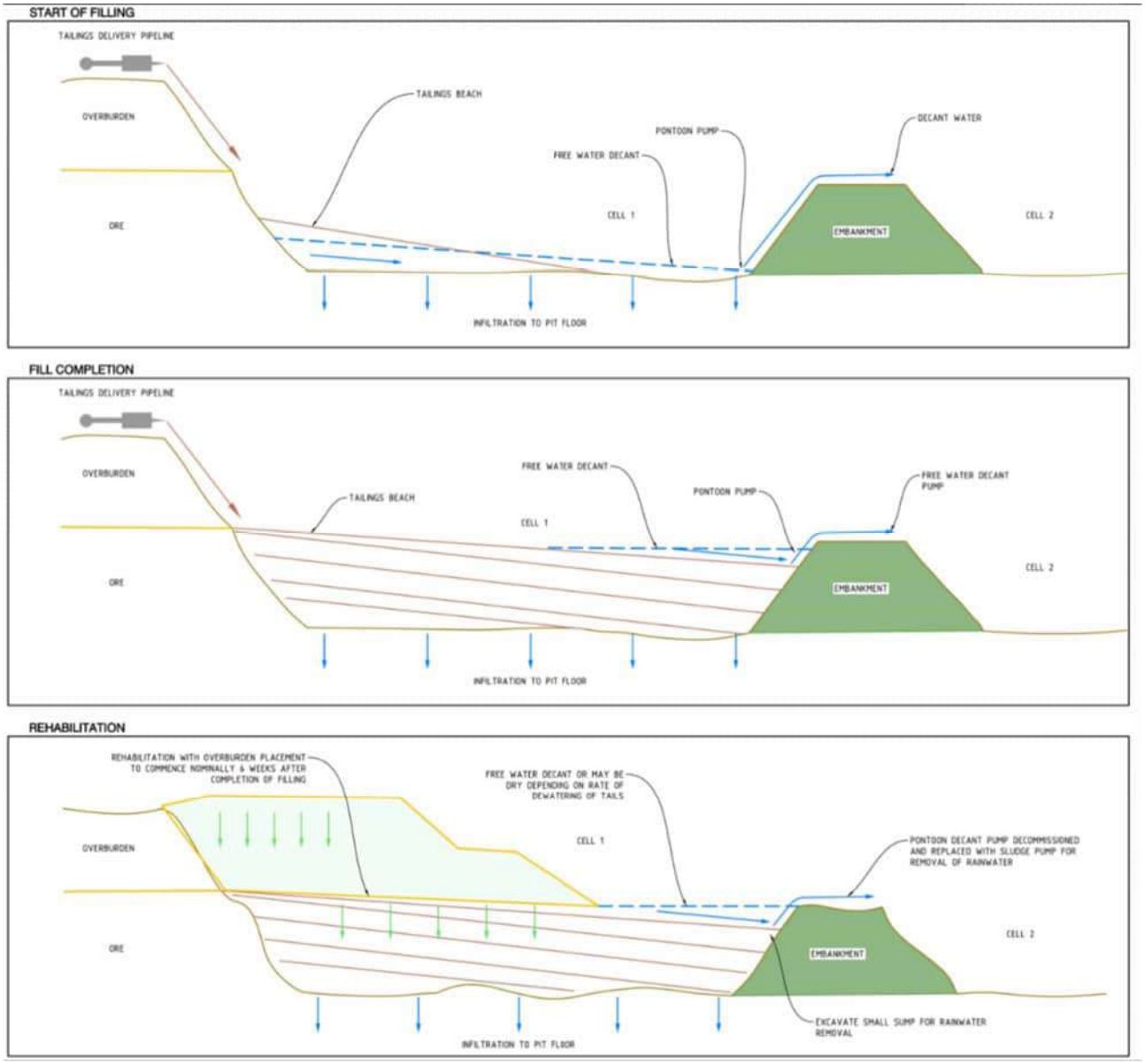

Figure 11 Progressive rehabilitation process

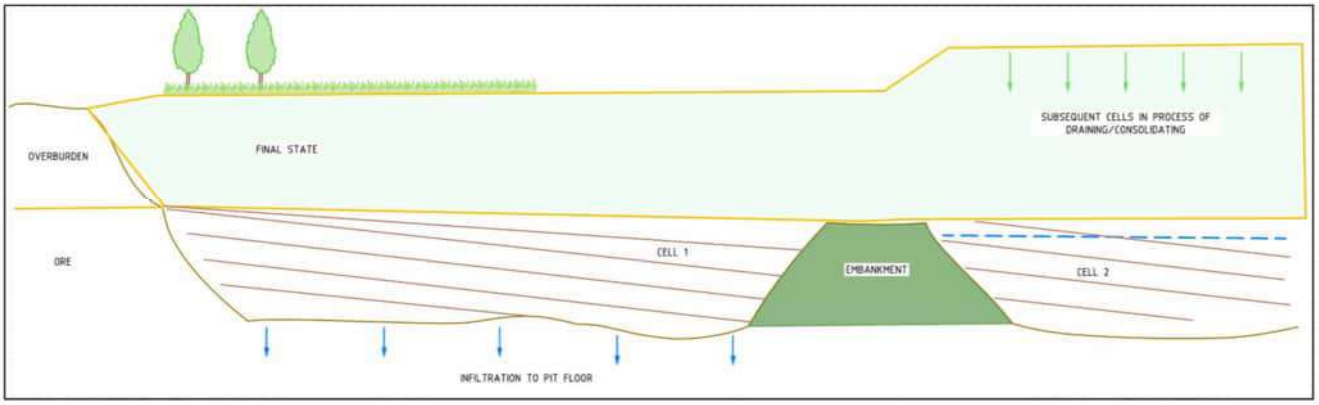

Figure 12 Final levels established for rehabilitation

This sequence of backfill activity is further described conceptually in plan and cross-section view, in Figure 13.

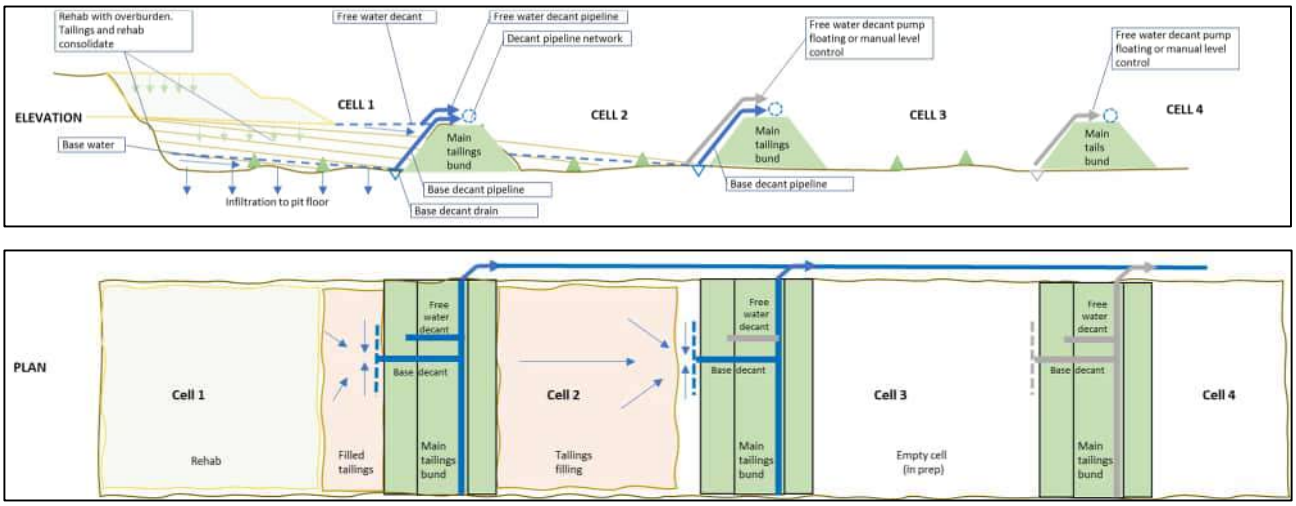

Figure 13 Plan and Cross-section view of staged backfill over 4 consecutive pit cells

5.2.7 Settlement

A settlement analytical model (pitt&sherry, 2025b) was developed to assess the overall primary and secondary consolidation period and inform the criteria adopted for rehabilitation and a TARP-Appendix C1- which has been developed to inform how corrective actions will be implemented to ensure that the land meets the set settlement criteria as part of restoring the land for the end land use of productive agricultural land.

Given the difference in thickness of overburden that is required to be applied over Area 1 versus Area 3, the overall expected timeframe for settlement to occur in Area 3 to meet rehabilitation criteria is longer in Area 3 (~1.75 years for Area 1, and 2.5 years for Area 3).

Based on the pitt&sherry (2025b) assessment, the proposed approach for the reinstatement of subsoil and topsoil over the overburden replacement (taking in the Soil Management Plan and any requirements from the agronomist regarding reseeding or cropping) is:

- Reinstate the subsoil over the overburden to 150 mm less than the final subsoil reinstatement level
- Undertake an initial drone survey of the surface
- Plant a crop on the subsoil to manage soil erosion and dust minimisation
- Once the settlement monitoring indicates that the settlements are at or lower than the geotechnical rehabilitation criteria a final drone survey would be undertaken. The drone survey would also identify any low points or areas where the surface overland fall is less than 1V:300H
- Any minor differential settlement would be addressed by reprofiling the subsoil. The extent would be defined in the drone survey; and
- The remaining 150 mm of subsoil would be added as well as the 200 mm of topsoil to bring the rehabilitated surface to the final levels.

5.2.8 Roadside restoration and revegetation

Although relatively small in area, mining will impact some sections of Bennett Road and Thompson Road and adjacent roadside native vegetation. VHM commits to reinstating public roads during the

rehabilitation phase for public use post mine closure to the satisfaction of the local roads authority (Gannawarra Shire Council). This will include replacing boundary fencing. A Decommissioning and Closure Management Plan will be developed to guide activities at the end of the mine operations and detail the resources needed to undertake those activities. This plan will detail the activities required to reinstate the public roads.

Revegetation to restore native vegetation disturbed by the project, will be limited in extent mainly to the woodland and grassland communities adjacent public roads closed by mining, and along the corridor disturbed by water pipeline installation. In these areas VHM commits to restoring native vegetation lost as a result of mining operations, consistent with the representative ecological vegetation classes (EVC) in consultation with the local Council.

During removal of the roads in preparation for mining it is important to preserve materials that will be useful in future rehabilitation. This could include pavement material, roadside habitat such as logs, stumps and brush, collection of local seeds and raising of tubestock for native vegetation replanting, and even fencing materials for reuse. Where appropriate, weed free topsoil from the roadway reserves will be stored separately for reuse in rehabilitation of these areas. Weed infested topsoil may not be appropriate for reuse and should be segregated.

5.2.9 Soil stripping and management

Refer to Soil and Stockpile Management Plan (SSMP) for management of soils during stripping and stockpiling requirements to ensure soils are managed to achieve rehabilitation outcomes.

The SSMP details:

- Stripping management
- Stockpile management
- Soil amelioration requirements.

5.2.10 Erosion Control during rehabilitation

The water erosion hazard in rehabilitation areas is expected to be very low due to the low rainfall conditions and flat site gradients. Conventional erosion control techniques will be appropriate and include:

- Amelioration of dispersive soil with gypsum to minimise the risk of dispersion and hardpan creation, and so maximise opportunity for surface infiltration of rainfall. This in turn will reduce the amount and velocity of surface water runoff.
- Leaving the topsoil surface in a loose, roughened condition (e.g. by scarification) to increase infiltration and reduce runoff. Erosion control methods are likely to be season and soil texture dependant. The recommendation to leave the stockpile surfaces coarsely structured needs to be closely monitored. Applying water to the surface of soils with some clay content can create a light crust and may be more effective in minimising erosion.
- Establishing ground cover vegetation promptly following completion of rehabilitation works to prevent raindrop and sheet erosion of the overburden emplacements. This will include a sterile cover crop for temporary stabilisation, even if that species will not form part of the final, permanent vegetation. Cover crops may need to be resown where there is a delay in handing areas back for farming.

5.2.11 Weed and pest management during rehabilitation

Weeds present a risk to agriculture and native rehabilitation efforts through competition with target species. A targeted weed control program will reduce the long-term cost of weed control and help

ensure successful rehabilitation. The *Invasive Plants and Animals Policy Framework* is the Victorian Government's approach to the management of existing and potential invasive species and will be incorporated into the Project's relevant weed and pest management plan.

Weed and pest animal management is to be implemented as per the Biodiversity Management Plan which addresses protection of native vegetation, weed management and fauna management during the life of the mine (construction, operations, rehabilitation).

Weed control is necessary at various stages of mining and rehabilitation:

- **Prior to topsoil stripping**. Weed control will occur in areas that are yet to be mined if they are not under agricultural production to prevent seed set prior to topsoil stripping;
- **On stockpiles**. Weed control on stockpiles should occur as a minimum biannually as required, during autumn/winter and spring/summer. Sowing of suitable pasture species or cover crop on stockpiles will provide competition for weed species and help minimise weed invasion. Develop a revegetation strategy as part of the Soil and Stockpile Management Plan that allows for weed management. For example, Sow only grass species (monocotyledons) or legumes (dicots) on stockpiles to allow use of selective herbicides; and
- **Rehabilitation establishment**. Weed control to be undertaken as required during rehabilitation including soil replacement and revegetation.

Herbicide use for weed control will be in accordance with the Biodiversity Management Plan and agronomist advice on integrated weed management, which will be reviewed and adapted as necessary during operations.

Weed surveys will be undertaken as per Biodiversity Management Plan. An inventory should be maintained of weed inspections, target weed species and weed control actions.

5.3 Domain 2- Processing Plant and Supporting Infrastructure

5.3.1 Rehabilitation Concept

Table 11 Domain 2- Summary of rehabilitation activities

Domain 2	Key rehabilitation activities
Area 1: • Process Plant – MUPs etc • ROM stockpile • Workshop/Admin/Lab • Water Treatment • Hardstands • Water storage and process water ponds in process plant area • Utilities, including pipelines within the service corridor connecting Area 1 and Area 3 (water, power, ore and tailings slurry).	• Decommissioning and removal of infrastructure and utilities, including: • Fuel and chemical tanks and drums are removed in accordance with relevant legislation and guidelines. • Water pumps and pipelines are removed. • Offices/ laboratory, stores and workshops are demolished and removed; • Processing plant and MUPs are dismantled and materials salvaged and recycled where possible, but otherwise removed • Waste removal, contamination assessment and remediation: o Hazardous materials are removed from site and any wastes and visible indicators of contamination are cleaned up. o Waste tracking documentation verifies legal disposal of all wastes.

Domain 2	Key rehabilitation activities
	○ Water quality monitored with respect to the relevant Environmental Reference Standard and fit for final land use. ○ Water quality and quantity are not impacted at any sensitive receptors/ environmental values. • Soils (and where required water) tested and site validated as fit for final land use in accordance with applicable guidelines including the National Environment Protection (Assessment of Site Contamination) Measure (1999). • Water storages decommissioned, backfilled and rehabilitated ○ Water quality in storages is tested prior to dewatering. ○ Dewatering avoids release of contaminants to land or waters. ○ Sediments accumulated in sediment dams are tested, removed and emplaced in the final landform if suitable. ○ Contaminated sediments deemed unsuitable for emplacement in the voids are disposed offsite at a facility licensed to accept contaminated waste, or emplaced onsite subject to further assessment. ○ All ancillary equipment including pumps and pipelines are removed and services terminated. ○ Backfilled in a controlled way consistent with geotechnical advice to minimise post closure settling. ○ Regraded so final land surface is contiguous with surrounding landscape in preparation for return to agricultural practices. • Backfill excavations (eg water storages) and rip hardstands • Removal of temporary environmental and drainage controls • Removal of pipelines and utilities lines and infrastructure • Rehabilitation of areas disturbed during installation of water supply pipeline • Removal of underground water supply lines except where agreed to be retained for future land use or agreed by the landowner/manager. • Soil replacement and revegetation. • Retention of other infrastructure (eg roads, dams, hardstands, water supply infrastructure, electrical / telecommunication services) where agreed for the final land use. • Water storages to be retained as part of the final landform will be for a clear and agreed purpose, and be safe, stable and sustainable. ○ Sediments tested and any contaminated materials removed from water storages ensuring no residual contaminants exist that would compromise future water use goals.

Domain 2	Key rehabilitation activities
	○ Retained dams will be assessed and verified as structurally sound by a suitably qualified person. ○ Water quality is tested and fit for the final use (eg agriculture, stock and domestic). consistent with relevant water quality guidelines. ○ Dams are licensed (if required) in accordance with relevant state legislation

5.3.2 Decommissioning

Decommissioning for the Goschen Project will include activities associated with removing mining infrastructure and the removal and/or remediation of contaminants and hazardous materials if required. It is assumed that all fixed plant, buildings, mine roads and water storage infrastructure will be completely decommissioned and removed prior to, or during the mine rehabilitation process. If desired certain infrastructure such as water supply lines and electrical infrastructure may be retained to assist the future land use where agreed with future landowners.

A Decommissioning and Closure Management Plan will be developed to guide activities at the end of the mine operations and detail the resources needed to undertake those activities. The plan will include the process for undertaking decommissioning and rehabilitation activities, complying with all legal obligations and communicating to minimise the risk of safety and environmental incidents. In addition, the Decommissioning and Closure Management plan will outline how any infrastructure remaining at the end of the mining lease is to be managed and financed into the future and provide opportunity for the community and other stakeholders to provide input.

Generally, the Decommissioning and Closure Management Plan will address the following:

- Before demolition, all infrastructure should be evaluated in terms of the presence of hazardous substances and land contamination, and appropriate management strategies developed to protect employees, the public and minimise potential environmental harm. This includes the identification of the various waste streams and development of management strategies in accordance with the appropriate waste legislation;
- Decommissioning risk assessment;
- Inventory of all salvageable equipment and resources;
- Waste management strategy identifying waste types, indicative quantities, disposal and recycling practices for all materials, and suitable disposal locations;
- Decommissioning and demolition plans with costings;
- Telecommunications, water supply and other services to be disconnected and removed unless agreed to remain. Services removal to adopt techniques that minimise additional land disturbance and ensure prompt stabilisation and restoration of final landforms to support the desired land use;
- A plan for reconstruction of local roads closed by mining. This will address matters such as collecting and storing materials useful in future rehabilitation (e.g. pavement material, roadside habitat such as logs, stumps and vegetation, collection of local seeds and raising of tubestock for native vegetation replanting), and replacement of fencing. Detailed design of roadways and approvals required from the local roads authority;
- Where services are buried (e.g. pipelines, cables) and their retrieval may lead to further unacceptable disturbance, the infrastructure may be left in situ if agreed with the relevant authority (subject to any necessary approvals or agreements) if they don’t pose constraints to the final

land use. In this situation, the location of the services will be surveyed and marked on the site plan and a suitable caveat developed to provide that they are readily identifiable for future land holders;

- Fuel and other hazardous materials stores to be decommissioned and removed, and contamination assessments undertaken to identify remediation requirements for any contaminated soil or water resources; and
- All buildings, fixed plant and other infrastructure that are not required as part of the final land use will be demolished and removed. Demolition will be carried out in accordance with the AS 2601—2001, *The demolition of structures*.

5.3.3 Contaminated Land assessments

The National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPM) (NEPC, 1999) will be applied to all domains where required prior to disturbance and as part of rehabilitation.

It is anticipated that assessments will be required during decommissioning within areas subject to potential contamination, such as the processing plant, workshop, hydrocarbon storage areas (and usage, eg fuel bay, workshop) septic systems, wastewater treatment plant area, laydown yards and HMC and REMC storage and loading areas.

The NEPM outlines a staged approach to the investigation and assessment of contamination that proceed in stages, in proportion to the risks of environmental harm. The investigations generally include:

- Site inspections and interviews to identify areas of potential contamination.
- Preliminary sampling of soil, groundwater, and surface water in areas of suspected contamination.
- Preparation of a conceptual model relevant to each suspected contaminated site.

As detailed in Section 2 of the NEPM, further work may be required pending the outcomes of the site investigation, which may involve a detailed site assessment. If areas of contamination are confirmed, a remediation plan will be developed to address all relevant requirements of the NEPM.

5.3.4 Decommissioning of Process Water Ponds

After mining ceases, water contained within the processing facility process water ponds will be dewatered or left to evaporate. Any water removed is to be tested prior to any planned dewatering and/or discharge.

Polyethylene liners will be removed; clay linings will be ripped or excavated and placed in the mine void.

Ponds will be backfilled, have topsoil replaced and revegetated as per end use.

5.3.5 Management of other aspects during rehabilitation

Table 12 Management of other aspects during rehabilitation

Item	Requirements
Soil stripping and management	For infrastructure areas only topsoil will generally be stripped. All areas of disturbed land will have topsoil replaced as part of being rehabilitated back to agricultural land. Refer to Soil and Stockpile Management Plan (SSMP) for management of soils during stripping and stockpiling requirements to ensure soils are managed to achieve rehabilitation outcomes.

Item	Requirements
	The SSMP details: • Stripping management • Stockpile management • Soil amelioration requirements.
Soil replacement	In infrastructure areas affected by creation of hardstands (roads, building pads etc), it is likely that hardstand material will need to be deep ripped and ameliorated prior to topsoil placement to a minimum depth of 20 cm. All other details for soil replacement are as per Domain 1- refer to section 5.2.4.
Revegetation for agricultural land	As per Domain 1, refer to section 5.2.5.
Erosion control during rehabilitation	As per Domain 1, refer to section 5.2.10.
Weed and pest control during rehabilitation	As per Domain 1, refer to section 5.2.11.

5.4 Domain 3- Stockpiles

5.4.1 Rehabilitation Concept

Table 13 Domain 3- Summary of rehabilitation activities

Domain 3	Key rehabilitation activities
Topsoil, sub-soil and overburden stockpile areas in both Area 1 and Area 3	Stockpile removal (all stockpiles used in rehabilitation activities) Surface rehabilitated to design levels. Subsoil ripped and topsoil replaced. Soil preparation and revegetation

5.4.2 Overall concept

All overburden, subsoil and topsoil stockpiles will be utilised in progressive and final rehabilitation activities. Refer to material balance in section 4.2.2.

5.4.3 Management of other aspects during rehabilitation

Table 14 Management of other aspects during rehabilitation

Item	Requirements
Soil stripping and management	For infrastructure areas only topsoil will generally be stripped during construction phase. All areas of disturbed land will have topsoil (and any subsoil removed during contaminated land remediation process) replaced as part of being rehabilitated back to agricultural land.

Item	Requirements
	Refer to Soil and Stockpile Management Plan (SSMP) for management of soils during stripping and stockpiling requirements to ensure soils are managed to achieve rehabilitation outcomes. The SSMP details: • Stripping management • Stockpile management • Soil amelioration requirements.
Soil replacement	In infrastructure areas affected by creation of hardstands (roads, building pads etc), it is likely that hardstand material will need to be deep ripped and ameliorated prior to topsoil placement to a minimum depth of 20cm. All other details for soil replacement are as per Domain 1- refer to section 5.2.4.
Revegetation for agricultural land	As per Domain 1, refer to section 5.2.5.
Erosion control during rehabilitation	As per Domain 1, refer to section 5.2.10.
Weed and pest control during rehabilitation	As per Domain 1, refer to section 5.2.11.

5.5 Domain 4- Sensitive areas requiring protection

5.5.1 Rehabilitation Concept

Table 15 Domain 4- Summary of rehabilitation elements

Domain 4	Key rehabilitation elements
Retained native vegetation in both Area 1 and Area 3	No change to current land use/ landform- all areas to remain undisturbed during mining. Retained vegetation to be fenced and demarcated as no-go zones until the end of the rehabilitation/ monitoring period. No specific requirements for fauna aside from protecting the designated areas of vegetation (habitat). Weed and pest control to continue in rehabilitation phase.

5.6 Domain 5- Land not disturbed by mining

5.6.1 Rehabilitation Concept

Table 16 Domain 5- Summary of rehabilitation elements

Domain 5	Key rehabilitation elements
Land which will be undisturbed throughout mining across Area 1 and Area 3.	No change to current land use/ landform- all areas to remain undisturbed during mining. Weed and pest control to continue in rehabilitation phase.

6. Objectives and Criteria

6.1 Whole of Site Objectives

The overarching objective of the Rehabilitation Plan is to detail how VHM plans to restore the mined land for future use, leaving the **whole site in a state that is safe, stable and sustainable** in accordance with the requirements of the *MRSD Act*.

As defined in the MR(SD)(MI) regulations, safe, stable and sustainable means:

- Is not likely to cause injury or illness
- Structurally, geotechnically and hydrogeological sound
- Non-polluting
- Aligns with the principles of sustainable development.

These principles form the key objectives for the rehabilitation of the mine.

The whole of site objective for rehabilitation is to restore land disturbed by mining to an equivalent (or better) agricultural land capability to enable a variety of productive agricultural uses.

6.2 Domain Specific Objectives

In addition to the whole of site rehabilitation objectives, objectives and associated completion criteria have been established for each rehabilitation domain as shown in Table 17.

6.3 Criteria

A set of rehabilitation criteria and associated rehabilitation milestones and monitoring for each rehabilitation objective has been established (Table 17) based on current state of knowledge and will likely be refined as the mine progresses based on further technical input and assessments (refer to Table 19). Rehabilitation Milestones are provided in Table 18 below.

Completion of field trials or updated technical assessments may be required to define realistic and meaningful SMART performance criteria for mine closure.

Table 17 Rehabilitation Objectives and Criteria for Mine Closure

Domain	Objectives	Criteria
The site will be safe, stable and sustainable, such that it is:		
Domain 1- mining blocks and in-pit TSFs	Not likely to cause injury or illness by ensuring: • Tailings are covered • Mine voids are backfilled to natural surface (minimum) • All mobile and fixed plant are decommissioned and removed. • Public roads are reinstated to the satisfaction of local roads authority.	• All tailings are covered. • All temporary infrastructure is removed. • All mobile and fixed plant are removed. • Gamma radiation dose survey rate is comparable to pre-mining surveys. • A plan is prepared and implemented for reconstruction of local roads closed by mining, to the satisfaction of the roads authority. • Roadside boundary fencing is replaced in a condition acceptable to the landowners.
	Structurally, geotechnically and hydrogeologically sound by ensuring: • Mine voids are backfilled and rehabilitated as per design. • In-pit tailings cells are built, operated and closed to design. • No excess settlement across mined area which impacts on end agricultural use. • Rehabilitated landform is not susceptible to erosion, is free draining with sheet flow conditions and avoiding poorly drained depressions and flow concentration. • Changed groundwater does not impact on its Environmental Values.	• Minimum factors of safety in accordance with ANCOLD (2019) and TSF design report: o End of deposition: minimum 1.5 o End of deposition post seismic: minimum 1.0. • Mine voids are backfilled within tailings, overburden, subsoil and topsoil to design levels allowing for any final consolidation. • Final levels are within +/- 0.5 m of existing (pre-disturbance) levels when averaged across the mining blocks. • Settlement criteria: o Area 1: Following expected cumulative settlement since end of filling based on final deformation curves (expected to be 1001 mm after 1.75 years (pitt&sherry, 2025b) at time of initial Rehabilitation Plan development, no more than 2 mm of settlement to occur between 3 settlement surveys taken 3 months apart. o Area 3: Following expected cumulative settlement since end of filling based on final deformation curves (expected to be 142 mm after 2.5 years (pitt&sherry, 2025b) at time of initial Rehabilitation Plan development, no more than 3 mm of settlement to occur between 2 settlement surveys taken 3 months apart. • Haul roads are ripped and revegetated. • Landform gradients are typically less than 3% (average) across agricultural areas and avoid sharp relief between rehabilitated landscapes and surrounding lands. • Landforms are shaped to blend with the natural environment and maximise sheet flow drainage, with site topography gently undulating and free draining. • Drainage conditions are stable with no active gully heads or tunnel erosion. • Drainage is predominantly as sheet flow mirroring present conditions. • Soil surfaces are not dispersive, hard-setting or water repellent. • A vegetative surface cover is established for long term erosion control and consistent with achieving the final agricultural land use (target of 70% cover for erosion control). • Groundwater criteria: o LPS Aquifer: Any mounding of groundwater level is within predicted range (ATCW, 2025b) or shows trend towards pre-mining groundwater levels. Groundwater quality is within predicted range (ATCW, 2025b) or shown that maximum concentrations will not impact on pre-mining environmental values. o Renmark Gp Aquifer: No changes to baseline groundwater level and quality conditions.
	Non-polluting by ensuring: • No water or sediment pollution impacts site or adjacent off-site users.	• A vegetative surface cover is established for long term erosion control and consistent with achieving the final agricultural land use (target of 70% cover for erosion control). • Landform designed to minimise erosion potential. • Drainage conditions are stable with no active gully heads or tunnel erosion. • Drainage is predominantly as sheet flow mirroring present conditions.
	Aligns with the principles of sustainable development by ensuring: • Soils are reinstated so that crop productivity is restored to pre-mining	• Topsoil and subsoil profile restored to minimum 1 m deep comprising at least 20 cm of topsoil and 80 cm of clayey subsoil material.

Domain	Objectives	Criteria
	levels. • Vegetation cover crop across rehabilitation areas sufficiently established. • Management measures are implemented to minimise bushfire risks in rehabilitation areas. • Rehabilitation is self-sustaining and revegetated to an acceptable standard.	• Restored soil profile contains similar physical, chemical and fertility characteristics to surrounding natural soils and is suitable for agricultural land use which are to be determined by analysis of the pre-mining assessments and field trials by Agronomist. • Soil surfaces are not dispersive, hard-setting or water repellent. • Annual crop yields show progression towards comparable control plot reference site levels which are to be determined by analysis of the pre-mining assessments and field trials. • Roadside revegetation on reinstated public roads is undertaken to restore representative ecological vegetation classes (EVC) in areas of vegetation loss due to mining activities, with a target of 70% successful establishment. Revegetation is to occur in consultation with local Council. • Bushfire risk managed to any legislative requirements and consistent with management approaches on adjoining agricultural land. • Weeds managed to ensure weed types and density within rehabilitation areas are no worse than on surrounding agricultural lands.
Domain 2- processing plant and supporting infrastructure area	Not likely to cause injury or illness by ensuring: • All mobile plant is removed. • All hardstands are removed. • The process plant and ancillary infrastructure is decommissioned and removed. • All infrastructure that is not to be used as part of the final land use decommissioned and removed to ensure the site is safe, stable and free of hazardous materials, including contaminated soils. • Telecommunications, water supply and other services disconnected and removed unless agreed to be retained. • Water storages that are not retained as part of the final land use, to be drained and backfilled.	• All mobile plant is removed. • Telecommunications, water supply and other services are disconnected and removed unless agreement is reached with relevant stakeholders to retain services infrastructure to benefit future land use. • No infrastructure or ancillary equipment remains on site post-closure unless retention has been formally agreed with the land manager and relevant regulatory authorities. • Products and reagents are removed off-site by licenced contractors to licenced facilities as required under applicable EPA legislation. • Dams are backfilled in a controlled way consistent to meet final landform design and in a controlled way consistent with geotechnical advice to minimise post closure settling. • Hazardous materials are removed from site and any wastes and visible indicators of contamination are cleaned up. • Soils (and where required water) tested and site validated as fit for final land use in accordance with applicable guidelines including the National Environment Protection (Assessment of Site Contamination) Measure (1999). • Waste tracking verifies legal disposal of wastes. • Gamma radiation dose survey rate in product processing and product storage areas is comparable to pre-mining surveys.
	Structurally, geotechnically and hydrogeological sound by ensuring: • Process plant, ROM and ancillary infrastructure is removed and landform is reinstated to a final landform that is contiguous with the surrounding natural landscape and is fit for future agricultural land use • Rehabilitated landform is not susceptible to erosion, is free draining with sheet flow conditions and avoiding poorly drained depressions and flow concentration.	• Water storages are removed and land regraded so final land surface is contiguous with surrounding landscape in preparation for return to agricultural practices. • Landform gradients are typically less than 3% (average) across agricultural areas and avoid sharp relief between rehabilitated landscapes and surrounding lands. • Landforms are shaped to blend with the natural environment and maximise sheet flow drainage, with site topography gently undulating and free draining. • Drainage conditions are stable with no active gully heads or tunnel erosion. • Soil surfaces are not dispersive, hard-setting or water repellent. • A vegetative surface cover is established for long term erosion control and consistent with achieving the final agricultural land use (target of 70% cover for erosion control).
	Non-polluting by ensuring: • Land, water and soils are free from contamination • No water or sediment pollution impacts site or adjacent off-site users.	• Hazardous materials are removed from site and any wastes and visible indicators of contamination are cleaned up. • Soils (and where required water) tested and site validated as fit for final land use in accordance with applicable guidelines including the National Environment Protection (Assessment of Site Contamination) Measure (1999). • Water quality in storages is tested prior to dewatering. • Dewatering avoids release of contaminants to land or waters. • Sediments accumulated in sediment dams are tested, removed and emplaced in the final landform if suitable. • Contaminated sediments deemed unsuitable for emplacement in the voids are disposed offsite at a facility licensed to accept contaminated waste, or emplaced onsite subject to further assessment. • Water quality monitored with respect to the relevant Environmental Reference Standard and fit for final land use.

Domain	Objectives	Criteria
		• A vegetative surface cover is established for long term erosion control and consistent with achieving the final agricultural land use (target of 70% cover for erosion control). • Landform designed to minimise erosion potential. • Drainage conditions are stable with no active gully heads or tunnel erosion. • Drainage is predominantly as sheet flow mirroring present conditions.
	Aligns with the principles of sustainable development by ensuring: • Soils are reinstated so that crop productivity is comparable to control plot reference sites levels. • Vegetation cover crop across rehabilitation areas sufficiently established. • Management measures are implemented to minimise bushfire risks in rehabilitation areas. • Rehabilitation is self-sustaining and revegetated to an acceptable standard.	• Topsoil and subsoil (where removed) profile restored to minimum 1 m deep comprising at least 20 cm of topsoil and 80 cm of clayey subsoil material. • Restored soil profile contains similar physical, chemical and fertility characteristics to surrounding natural soils and is suitable for agricultural land use which are to be determined by analysis of the pre-mining assessments and field trials by Agronomist. • Soil surfaces are not dispersive, hard-setting or water repellent. • Annual crop yields show progression towards comparable control plot reference sites levels. • Bushfire risk managed to any legislative requirements and consistent with management approaches on adjoining agricultural land. • Weeds managed to ensure weed types and density within rehabilitation areas are no worse than on surrounding agricultural lands.
Domain 3- stockpiles	Not likely to cause injury or illness or Non-polluting by ensuring: • Stockpiles are removed and surface is blended with surrounding final landform and revegetated consistent with the objectives for Domain 1.	• Stockpiles removed and consumed in site rehabilitation and surface rehabilitated to design levels. • Subsoil ripped and topsoil replaced. • A vegetative surface cover is established for long term erosion control and consistent with achieving the final agricultural land use (target of 70% cover for erosion control).
	Aligns with the principles of sustainable development by ensuring: • Rehabilitation is self-sustaining and revegetated to an acceptable standard.	• Weeds managed to ensure weed types and density within rehabilitation areas are no worse than on surrounding agricultural lands.
Domain 4- sensitive areas requiring protection AND Domain 5- Land not disturbed by mining	Not likely to cause injury or illness, or Structurally, geotechnically and hydrogeological sound, or Non-polluting and Aligns with the principals for sustainable development by ensuring: • No changes to existing site use and condition • No go zones are preserved with no disturbance of retained vegetation during mining.	• No disturbance of the areas from mining activities. • No go zones are maintained during construction, operation and rehabilitation phases. • Weed and pest control is undertaken as per the Biodiversity Management Plan.

7. Rehabilitation Milestones and Implementation Schedule

The mine is expected to have a life of approximately 20 - 25 years. Much of the processing plant and infrastructure area cannot be progressively rehabilitated but will be subject to a decommissioning program at the conclusion of mining. This is expected to take approximately 5 years to complete.

Driving the progressive rehabilitation program is the intention to commence backfilling of mine blocks as soon as practicable following mining completion within each block.

The rehabilitation schedule is based on certain activities occurring during discrete phases.

It is assumed for the basis of this plan that mining will continue for an estimated 20-25 years, with the broad rehabilitation phases summarised as follows and Figure 14.

Figure 14 Rehabilitation Schedule

Phase	Pre-ground disturbance	During operations	Rehabilitation Phase post cessation of mining	Rehabilitation maintenance and monitoring phase- once all rehabilitation activities have been completed	Closure-rehabilitation criteria is met.	Post-Closure
Detail and approximate timing	Captures planning, work plan approval phase and design phases to be completed prior to ground disturbance.	Progressive rehabilitation during operations	Rehabilitation activities expected to span ~5 years	Rehabilitation maintenance and monitoring expected to span another ~6 years	Relinquishment of bond and mining licence	Following relinquishment of mining licence
Rehabilitation Phase	Pre-execution	Execution	Execution	Post-execution	Closure	Post-closure

7.1 Execution phase

The execution phase will effectively start during mining operations, with progressive rehabilitation occurring of the mining blocks following cessation of filling with tailings. Once the final block has been mined, it is assumed that the execution phase post mining operations will last up to five years.

This phase includes the period of intense rehabilitation activities, including the major rehabilitation works, such as infrastructure removal, reshaping works, overburden, sub-soil and topsoil placement, revegetation of disturbed footprints, environmental monitoring and reporting, community engagement and general site clean-up.

7.2 Post execution phase

The subsequent post execution phase is a period of maintenance and monitoring until the site achieves a safe, stable and sustainable sate in terms of all aspects to the new landform.

The rehabilitation will be undertaken in stages as shown in the timeline for rehabilitation and closure activities presented in Table 18 (below).

7.3 Rehabilitation Milestones

In each phase of rehabilitation, there are a number of sub-tasks which are outlined in Table 18 and further assessments/ investigation to inform rehabilitation is provided in Table 19 below.

Table 18 Rehabilitation Milestones

Task	Applicable Domain/s (Area 1 and Area 3)	Phase	Item	Timing notes	During operations	Years after cessation of operations	
						0-2 years	3- 6 years
1	Domain 2	Construction	Rehabilitation of areas disturbed during installation of water supply pipeline from Kangaroo Lake.				
2	Domain 1, 2, 3	Construction	Establish weather station to allow collection of relevant climatic data				
3	Domain 4, Domain 5	All	Maintain protection around areas of sensitivity to be retained Periodic confirmation that land remains undisturbed by mining in accordance with mine design and approvals. Implement corrective/ rehabilitations actions if required.	Install any required fencing for protection in construction Periodically review mine operations and disturbance footprint to confirm disturbance does not encroach on areas to be protected or undisturbed.			
4	Domain 1, 2, 3	Construction, operation	Topsoil and subsoil progressively stripped and preserved for later use in rehabilitation	Pre-mining			
5	Domain 1, 2, 3	Construction, operation	Soil ameliorants applied during stripping and stockpiling in accordance with the Rehabilitation Plan/ SSMP	During topsoil stripping On surface of stockpiles – within 60 days from establishment and final shaping Respreading in rehabilitation cells – within 30 days of respreading			
6	Domain 1	Operations, rehabilitation	Completed mine voids progressively backfilled with tailings to design levels and allowed to dry sufficiently to meet desired geotechnical parameters	Commence as soon as practicable on completion of mining. Tailings fill is expected to take around 180 days allowing time for sufficient dewatering and consolidation prior to overburden fill.			
7	Domain 1	Operations, rehabilitation	Tailings cells backfilled with overburden following tailings consolidation. Overburden backfill to be done in nominally 3 m lifts with a consolidation period allowed between each lift.	Overburden filling could take up to 12 months allowing for consolidation period between each lift.			
8	Domain 1	Operations, rehabilitation	Tailings cells capped with subsoil and topsoil to establish final levels	Final soil profile reinstated as soon as practicable from completion of overburden settling and to ensure placed topsoil and subsoil has optimal moisture levels. Progressive rehabilitation, with final cells being rehabilitated post completion of mining. Note Area 1 will be completed during mining of Area 3.			
9	Domain 1, 2	Operations, rehabilitation	Stockpile areas and haul roads ripped and topsoil placed to final levels	As soon as practicable following depletion of the stockpile/s for rehabilitation.			
10	Domain 1, 3	Operations, rehabilitation	Final surface prepared in readiness for revegetation, including application of soil ameliorants, fertilisers and surface roughening	As soon as practicable from completion of overburden filling to ensure placed topsoil and subsoil has optimal moisture levels			
11	Domain 1, 3	Operations, rehabilitation	Rehabilitation surface is sown with desired vegetation mix	Cover crop established ideally within 30 days following topsoil placement, but dependent on season. If crop cannot be established alternate amelioration to be undertaken (e.g. hydro-mulch or similar)			

Task	Applicable Domain/s (Area 1 and Area 3)	Phase	Item	Timing notes	During operations	Years after cessation of operations	
						0-2 years	3- 6 years
12	Domain 1, 3	Operations, rehabilitation	Revegetated surface achieves desired vegetation mix and cover, and can be treated as a "clean" catchment for the purpose of stormwater management	Expected within 60 days from sowing			
13	Domain 1	Rehabilitation	Boundary fence replacement type/ standard agreed with relevant landowners/ road authorities.	During mining, replacement requirements to be agreed prior to removal of existing fencing.			
14	Domain 1	Rehabilitation	Reinstatement of public roads and lands removed by mining, to satisfaction of relevant authorities. Roadside revegetation completed.	Within 2 years of conclusion of ore processing			
15	Domain 2	Rehabilitation	Process Plant and ancillary infrastructure is decommissioned. Infrastructure removed from infrastructure domains and land remediated (if required) and rehabilitated. Telecommunication, water supply and other services to be disconnected and removed (unless under agreement/ specified to be retained). Any mobile plant not required for rehabilitation phase is removed. All residual products, reagents and hazardous waste removed off-site by licenced contractors to licenced facilities as required under applicable EPA legislation. Soils (and where required water) tested, and site validated as fit for final land use in accordance with applicable guidelines including the National Environment Protection (Assessment of Site Contamination) Measure (1999).	Within 2 years of conclusion of ore processing			
16	Domain 2	Rehabilitation	Water storages decommissioned, backfilled and rehabilitated Or water storages to be retained as part of the final landform will have any assessment works required to deem safe, stable and sustainable for future use.	Within 2 years of conclusion of ore processing			
17	Domain 2	Operations, rehabilitation	Former process plant and water storages (in process area) ripped, and topsoil placed to final levels	As soon as practicable following depletion of the stockpile/s for rehabilitation.			
18	Domain 1,2	Operations, rehabilitation	All mobile plant removed. Removal of mobile plant may be staged should specific equipment be retained for use in the rehabilitation phase.	As soon as practicable following mining or completion of rehabilitation phase.			
19	Domain 2	Operations, rehabilitation	Final surface prepared in readiness for revegetation, including application of soil ameliorants, fertilisers and surface roughening	As soon as practicable from completion of overburden filling to ensure placed topsoil and subsoil has optimal moisture levels			
20	Domain 2	Operations, rehabilitation	Rehabilitation surface is sown with desired vegetation mix	Cover crop established ideally within 30 days following topsoil placement, but dependent on season. If crop cannot be established alternate amelioration to be undertaken (e.g. hydro-mulch or similar).			
21	Domain 2	Operations, rehabilitation	Revegetated surface achieves desired vegetation mix and cover, and can be treated as a "clean" catchment for the purpose of stormwater management	Expected within 60 days from sowing			
22	Domain 1, 2, 3	Operations, Rehabilitation	Implementation of monitoring program to assess tracking against rehabilitation criteria.	Will commence following progressive rehabilitation of tailings cells in Area 1 (i.e. will commence following rehabilitation on Cell 1).			

Task	Applicable Domain/s (Area 1 and Area 3)	Phase	Item	Timing notes	During operations	Years after cessation of operations	
						0-2 years	3- 6 years
23	Domain 4	Rehabilitation	Remove fencing relating to no go vegetation, where or if appropriate.	Fencing is to only be removed once all other rehabilitation earthworks are completed, and if appropriate.			
24	All	Post mine closure and Post-rehabilitation	Final hand back to post-mining land use (agriculture)	Relinquishment of mining areas expected after about 6 years from conclusion of all mining, ore processing and rehabilitation activities			

Table 19 Assessments/ further design required to inform rehabilitation

Appli-cable Do-mains	Area	Timing	Description	Notes
All	Area 1 and Area 3	Pre-mining	NDVI measurements of two wet seasons and two dry seasons	Assessment will inform the rehabilitation criteria. The data is to be reviewed and updated rehabilitation criteria established within 6 months of all measurements and analysis being completed. Any updated criteria are to be incorporated into the Criteria table of this Plan.
Domain 1	Area 1	Pre-mining	Sand / cemented sand layers used for ore as existing Insitu: Insitu Density and moisture content on samples taken from cores in this layer while drilled without water or fluid (samples or cores to be maintained undisturbed as practically as possible) or using other drilling methods with minimal disturbance or sampling tools for undisturbed samples. Two tests at different depths within this layer / borehole for two different boreholes in Cell 1.	As per pitt&sherry 2025
Domain 1, Domain 3	Area 1 and Area 3	Pre-mining	Soil sampling and assessment. Areas of identified ECa zones covering the mining cells and the subsoil and overburden sites.	Refer to section 7.3.1 for assessment program. The data is to be reviewed and baseline soil parameters are to be established and incorporated into updated rehabilitation criteria within 6 months of all measurements and analysis being completed.

Applicable Domains	Area	Timing	Description	Notes
				Any updated criteria are to be incorporated into the Criteria table of this Plan.
Domain 1, Domain 3	Area 1 and Area 3	Pre-mining	Reconfirm thickness of topsoil based on soil mapping/ pre-mining survey (section 7.3.1) and reconfirm available topsoil and final topsoil replacement thicknesses.	
All	Area 1 and Area 3	Pre-mining	Selection and establishment of crop reference plots in non-mining and areas to be mined.	Refer to section 7.3.3.
Domain 1, 2, 3	Area 1	Pre-mining/ early operations	Selection and establishment and monitoring of soil reinstatement trial plots. Three sites to be selected representative of ECa zones. Soils samples to confirm appropriate placement of stripped layers and post replacement of topsoil as per Table 20.	Refer to section 7.3.4 for trial program.
Domain 1, 2, 3	Area 1 and Area 3	Pre-mining/ early operations	Soil reinstatement trial plots sites once crops are sown. Three sites representative of ECa zones, to be tested for: • Plant tissue tests (mid-late winter) • NDVI measurements (mid-winter and mid-spring) • Yield maps (at harvest)	Refer to section 7.3.4 for trial program. Results of the trial program are to inform rehabilitation criteria for reinstating agricultural land use. The data is to be reviewed and the rehabilitation criteria established within 6 months of all data collected following trial establishment and analysis being completed. Any updated criteria are to be incorporated into the Criteria table of this Plan.

Applicable Domains	Area	Timing	Description	Notes
Domain 3	Area 1 and Area 3	During operations, prior to use in rehabilitation	Stockpile quality- Topsoil and subsoil stockpiles Soil sample to ensure stockpile composition is consistent with the soil parameters used to define the stripping regime as per Table 12.	Prior to topsoil replacement. Sample on a 100 m grid.
Domain 1, 2	Area 1	During operations	Field trials of the flocculant tailings during operation to: • Measure surface strengths • Monitor surface drying and strength gains. • Assess surface access conditions and develop tests to verify suitable strength for safe access. The Field trials of the flocculated tailings should be regularly surveyed to monitor each of the issues mentioned above.	As per Tailings design report (ATCW, 2025).
Domain 1	Area 3	During operations of Area 1	Tailings cell layouts for Area 3.	
Domain 1-	Area 3	During operations of Area 1	Final landform (rehabilitation) design of Area 3 taking into account: • Operations to take account of bulking, final layout refinements • Tailing cell layouts.	
Domain 1	Area 3	During operations of Area 1	An updated material balance is to be completed following the refined tailings cell layouts and final landform design.	
Domain 1	Area 1 and Area 3	During operations of Area 1- within first 10 years of operation	Detailed design for reconstruction of local roads closed by mining, to the satisfaction of the roads authority.	
Domain 1 and Domain 2	Area 1 and Area 3	Annually during operations	Ongoing tracking of materials to inform material balance. Data collection may include tracking via truck movements and/ or annual surveys.	Any changes to the final rehabilitation profile as a result of material balance variations are to consider implication for final landform and rehabilitation

Appli-cable Do-mains	Area	Timing	Description	Notes
				commitments under this Plan.

7.3.2 Pre-mining soil assessment

Pre-mining soil assessments are to be undertaken following review of the EM38 surveys to guide soil sampling locations with the mining areas.

The EM38 survey to 1.0 m for the Area 1 mine site and surrounds is shown Figure 15.

Soils that have ECa levels above 200 mS/m are too saline for agronomic management and revegetation. Soils having ECa levels below 25 mS/m are regarded as suitable for agricultural crops, pastures and trees. The location of the ECa levels in the soil profile will be determined from the soil analyses.

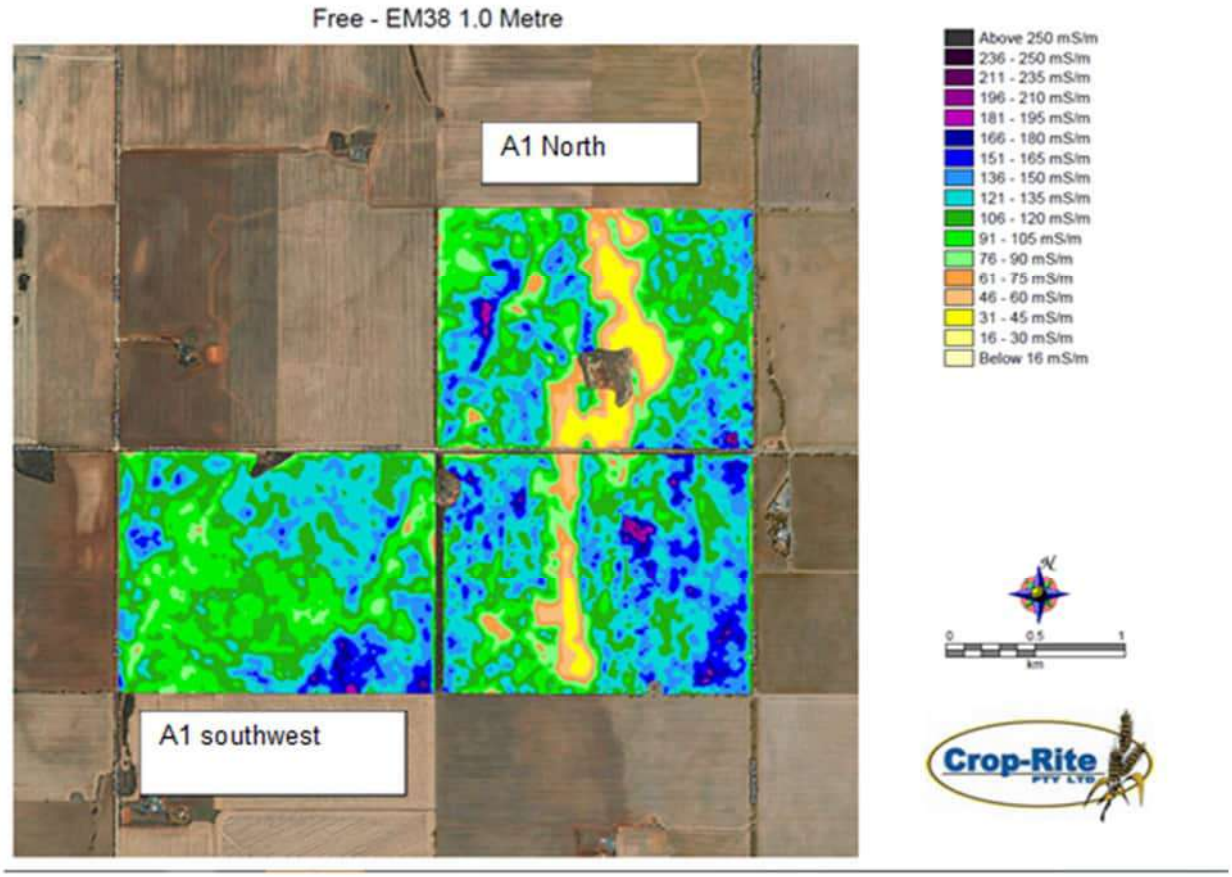

Figure 15 EM38 survey results

Lentil grain yield data for 2024 were obtained from the A1 southwest and A1 north Blocks (Figure 16) The southern block was cut for hay and location-specific production is not available.

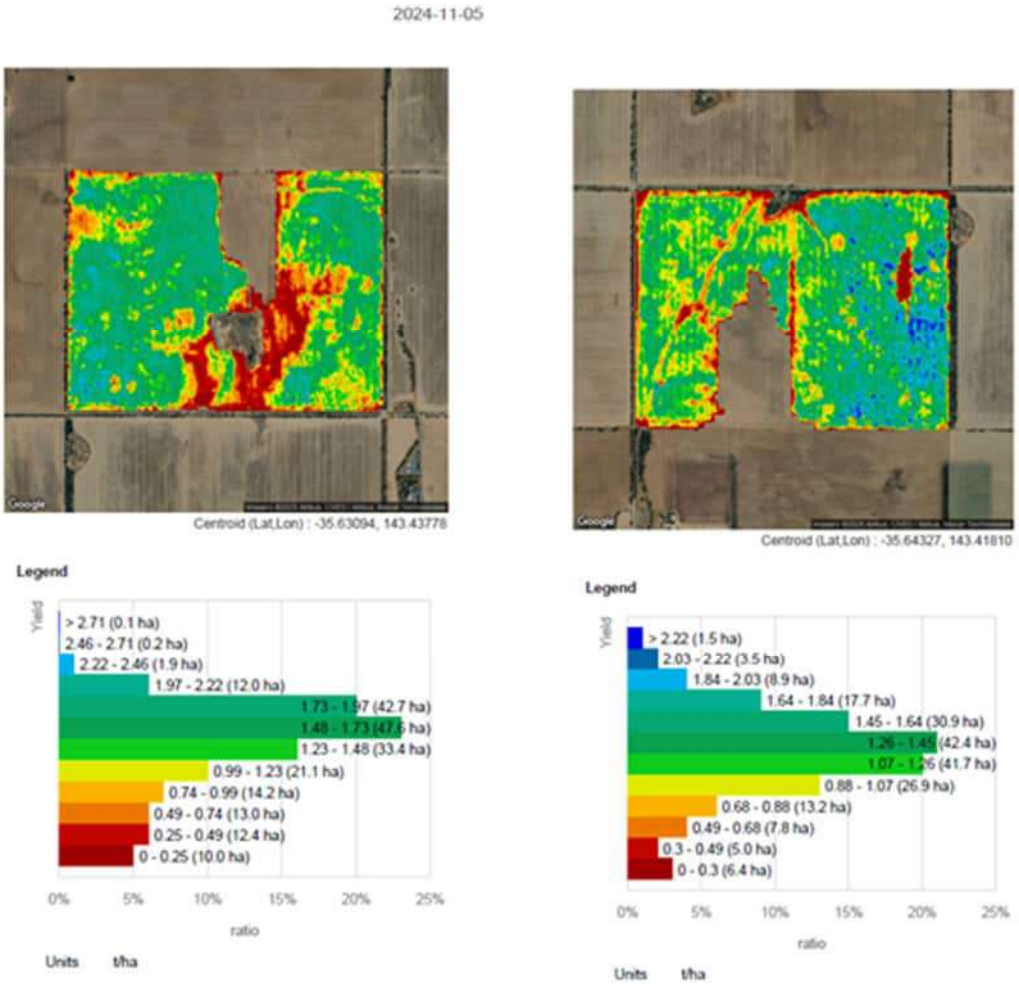

Figure 16 Yield map lentils (t/ha) 2024- A1 southwest block (left), A1 north block (right)

The yield maps show a reasonable correlation with the EM38 data and give confidence that sampling based on EM38 readings is a justifiable sampling protocol. Note that the low lentil yields associated with the low ECa readings are likely to be an effect of light textured soils limiting moisture availability and not salinity per se.

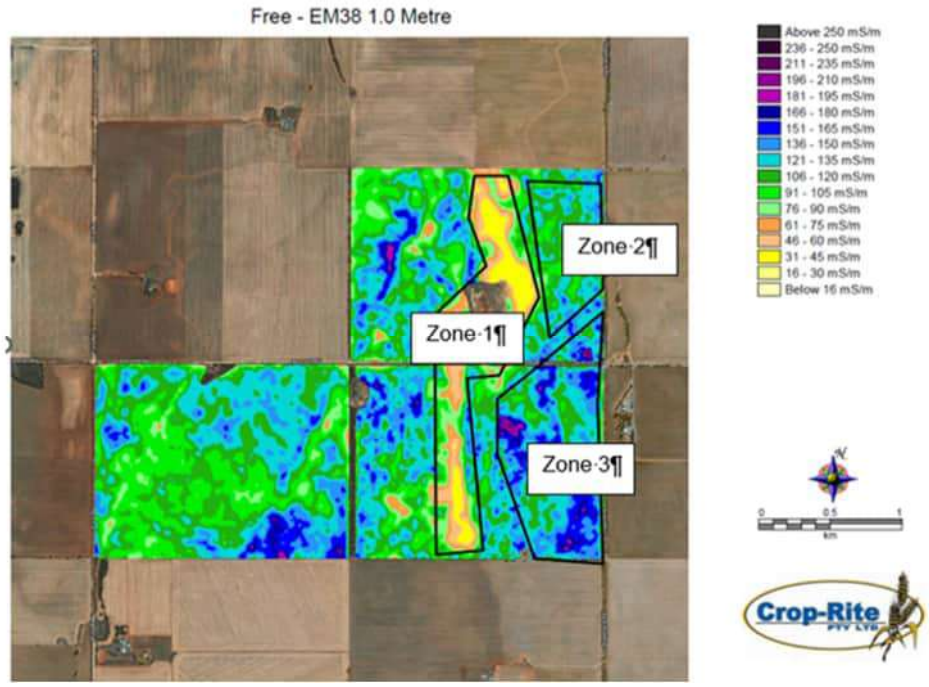

Figure 17 Soil sampling zones

The EM38 data identifies three broad zones of apparent electrical conductivity (ECa): 16-60 dS/m (Zone 1), 76-120 dS/m (Zone 2) and 121-195 dS/m (Zone 3). Eash of these zones in the mining cell area should be sampled separately. These zones have no direct relationship to ECe because ECa varies with moisture content, texture and salinity.

The Zone 1 topsoil in both blocks should be sampled separately.

The topsoil in each zone should be sampled as a composite of 30 cores, 0-10 cm.

Ten subsoil samples should be taken in each of the zones. These should represent the variation observed in the EM38 survey and the sampling sites geolocated. The soils should be sampled at 10-20 cm and then at 20 cm intervals to 1m, where there are no obvious restrictions to root growth (eg limestone). The occurrence of limestone is to be recorded. Note that more detailed sampling may be required if anomalous analyses are identified.

The samples should be analysed for the following factors according to the depth of the sample:

Table 20 Soil analyses for pre-mining assessment

Test	Depth (cm)			
	0-10	10-20	20-40	Other depths
pH (H2O)	X	X	X	X
pH (CaCl2)	X	X	X	X
Electrical Conductivity (Soil water and saturated extract)	X	X	X	X
Total Carbon	X	X		

Test	Depth (cm)			
	0-10	10-20	20-40	Other depths
Active Carbon (readily mineralizable C)	X	X		
Phosphorus (Colwell)	X	X		
Phosphorus Buffering Index	X	X		
Sulphur (KCL40)	X	X	X	
Exchangeable cations	X	X	X	X
Boron (Hot CaCl2)	X	X	X	X
Copper, Zinc and Manganese (DTPA extract)	X	X	X	X
Free lime	X	X	X	X
Emerson aggregate test	X	X		

Decisions about the stripping depths cannot be made until the results of the soil tests are available, but the principle will be that soils which impact negatively on plant production will be kept separate from soils which do not negatively impact on growth and may therefore require a number of subsoil stockpiles.

- Topsoil will be stripped from all disturbance areas, including haul roads, infrastructure areas and subsoil stockpile locations. Stripping to 20 cm is deeper than some of the existing topsoils and will collect some of the heavier (clay textured) and more sodic subsoils. The benefit is an increase in clay content and water and nutrient holding capacity of the existing lighter sandy loams and loam topsoils. There may be an increase in sodicity which may be mitigated by the application of gypsum prior to stripping works being undertaken. Saline soils should be placed at the depths from which they were extracted. Stripping the 0 - 20 cm zone will result in the dilution of organic carbon levels and macro and micronutrients in the replaced 0 – 10 cm zone and require increased nutrient inputs to restore soil fertility.
- Subsoil stripping depths from mining areas to a depth of 1.0 m will be informed by the results of the sampling regime. Subsoil clay will be stockpiled separately to topsoil and used to restore a rehabilitated soil profile depth at least 1.0 m thick.
- Following pre-mining soil assessment, an operating procedure and TARP is to be developed to support soil stripping and management as part of the requirements of the Soil and Stockpile Management Plan as part of ensuring management of soils for rehabilitation.
- The data collected from the baseline soil testing is to be used to define the existing physical, chemical and fertility characteristics of the soils pre-mining for comparison and definition of rehabilitation criteria.

A review of the EM38 data and assessment of zones is to be undertaken in advance of mining of Area 3, following the same procedures as outlined above to inform the Area 3 stripping program.

7.3.3 Crop Reference Site Establishment

Reference sites will be selected by advice of an Agronomist following a review of historical yield and NDVI data with consideration to plant responses in high and low rainfall years. The sites will be located within the respective mining area or suitable reference site and the surrounding non-cropped areas and will cover the range of historical plant responses. The reference sites should preferably be at least 150 metres by 40 metres to align with the recording parameters of crop yield monitors. Reference sites should not be located outside the respective mining areas if practical, and representative areas can be identified, as it cannot be guaranteed that crops grown in any one year will be the same as the crops sown on the mine area. Further, agronomic practices may vary between different farmers.

The reference sites are to be established in advance of mining the individual Areas, acknowledging that there will be knowledge gained from monitoring of sites in Area 1 which is to be considered by an Agronomist prior to the establishment of additional crop reference sites for Area 3.

Prior to ground disturbance the areas to be included within the Crop Reference Sites are to be defined on mapping. Details of monitoring the reference sites are discussed below and included in Table 19.

Crop growth will vary between years and there are likely to be differential crop responses based on the interaction of soil type and rainfall patterns.

While whole paddock yield data for the land within MIN007256 is available for some years pre-mining, with yield map data for the mine area only available for 2024. Crop growth and productivity for previous seasons will be assessed from NDVI images to provide baseline information.

Growing season NDVI images will be obtained for two dry years (2019 and 2015) and two wet years (2010 and 2022) and referenced to the crops grown in those seasons,

Average NDVI readings will be calculated for each mining cell location and each trial plot location and expressed as a percentage relative to the average NDVI reading of the site.

The unmined areas ahead of mining will continue to be cropped, and can be used as reference sites for the reinstated areas in their second and subsequent years.

In Year 1, all the reinstated areas will be sown to a legume (medic/vetch) which will be harvested for hay. A comparison between the reinstated areas, in the first year, and surrounding cropped areas will not be possible as it is unlikely that this crop would be grown outside the reinstated areas. While a direct comparison cannot be made hay yields will be able to be compared to expected yields for the district. In subsequent years the reinstated areas should be sown with the same crop as in the surrounding non-mined areas.

Standard monthly agronomic monitoring should take place for all sowings. These are:

- Presence of weeds
- Incidence of pests and diseases
- Mid -plant tissue analysis to confirm the trace element status of the crop and remedial action taken if required.

NDVI measurements will be obtained annually in mid-winter and mid spring to assess plant vigour. The NDVI ratings of the individual mining cells will be expressed as percentage relative to the average NDVI reading of the mine site. Areas where poor growth occurs will be soil and tissue sampled and compared to areas of good growth to identify the reason(s) for the variation.

Grain quality at harvest and grain yield maps from harvester monitors

Success of the reinstatement process in the second and subsequent crops will be based on the yields obtained from adjacent comparable areas not yet mined.

The data collected from the crop reference sites is to be analysed by an Agronomist to further define the rehabilitation criteria for re-establishing agricultural land use.

7.3.4 Soil reinstatement Trial Plots

There is a requirement to establish reinstatement trial sites to evaluate and modify reinstatement protocols. It is that three sites be established to cover the broad EM38 zones. Indicative locations of these sites are shown in Figure 18 for Area 1. The number and final location of soil reinstatement trial sites will be determined based on the outcomes of the soil investigations and analysis (per section 7.3.2 above) and with input from the Agronomist. The locations of the trial sites will be primarily based on the soil investigation outcomes, however given the progressive mining, locations will be sighted to retain the trial sites as long as practicable before the area is mined, however retention length may vary. Mining will begin in the north-east corner of the site.

Locating the trial sites, as shown, A (in Zone 1) and C (in Zone 2) which are representative of two of the three categories of ECa readings, will provide data regarding rehabilitation well in advance of mining on those soils. Site B which is in Zone 3 soils will be established to monitor rehabilitation practices applicable to the soil zone of the initial mining area.

The trial sites will be 10 m by 50 m. The trial sites will be re sampled on the pre-mining sampling protocols to confirm the sites are representative of their zone. The trial sites will only be excavated to a depth of 1 m in horizons, based on the chemical characterisation of the sites.

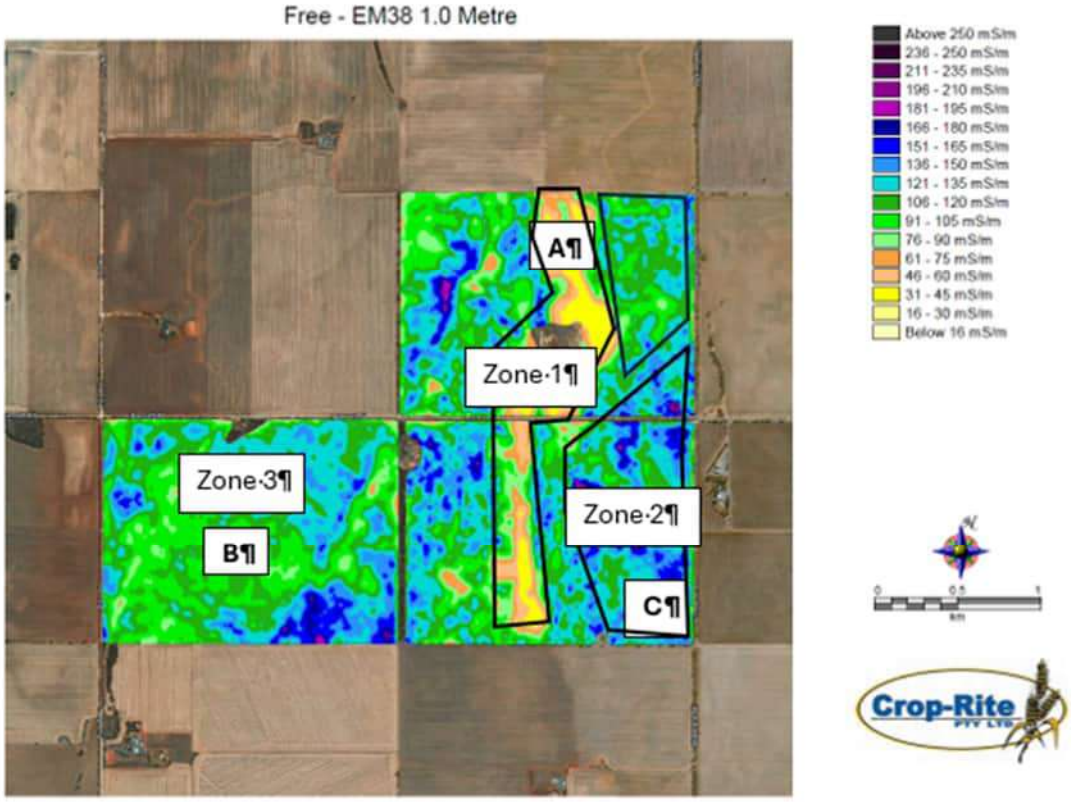

Figure 18 Indicative locations for soil reinstatement trial sites

Soil reinstatement trial plots will be established as soon as possible once the soil analysis has been completed and will be established by no later than 1 year from the notification of intent to commence mining is provided to Resources Victoria. Timing of establishment including stripping and replacement may be timed in consideration of weather, moisture content and cropping of land to be included. Because of the urgency to establish the trial sites, it will not be possible to completely mimic the protocols for the mined areas. In the areas to be mined, soil will be stockpiled and left exposed for a number of months (nominally 6 months or longer should mining schedule and conditions generally permit) before reinstatement. Stockpiling the soils should have minimal effect on the subsoil samples, but the stockpiling of topsoil is likely to result in reduced organic matter content. Additional testing of the stockpiled material will be undertaken as part of the trial to establish how soil quality characteristics track or change over the stockpiling period under advice from the Agronomist- Varying soil ameliorants will be applied, with application rates refined based on the additional material testing.

Part of the trial will be establishing a trial which aligns with anticipated rehabilitation methodologies and profiles. The reinstated soil profile will comprise 80 cm of subsoil and 20 cm of topsoil. Soils will be ameliorated with gypsum as indicated from soil analyses. Subsoils may need to be ripped or scarified during amelioration (application of gypsum) and prior to topsoil replacement to key in the topsoil and prevent a hardpan developing at the topsoil/subsoil interface. This requirement will be assessed at the time of reinstatement in consultation with the Agronomist.

Variations to trial conditions, e.g. stripping and stockpiling methodology and treatment during stockpiling, e.g. crop type, rotation, gypsum and fertiliser application etc will be developed in consultation with the Agronomist and implemented as part of the rehabilitation trials.

Scarification of topsoil will be undertaken to incorporate soil ameliorants into the plant rooting zone (to a depth of 10 cm) and to provide a suitable seedbed for direct seeding. A roughened soil surface also increases rainfall infiltration, reduces run-off and provides a micro-habitat allowing plants to germinate and establish. Where possible ripping and scarification will be undertaken when the soil is moist to minimise structural decline and immediately prior to sowing. The depth of ripping is based on soil thicknesses and is to be informed by agronomist advice.

The topsoil should also be firm and not compacted prior to seeding. Appropriate sowing equipment should be used to ensure good seed-soil contact.

Soil samples will be taken after reinstatement of the topsoil to assess and compare the status of all nutrients as well as the soil organic matter components, with the levels prior to stripping. Where nutrient deficiencies are identified these will be addressed through the application of appropriate fertilisers. Sufficient rates will be applied to remove nutritional limitations. Where a high rate of fertilizer is required and cannot be sown with the seed, a portion of the fertilizer will be sown with the seed and the remainder broadcast prior to sowing and incorporated into the soil to a depth of 10 cm.

Within crop monitoring of weed, pests, diseases and crop vigour and grain quality will be assessed as for post mining reinstatement.

Yields will be assessed manually (i.e. gm/grain*grains/head * tillers/plant*plants/sq m) and will form part of the knowledge base for any updates to rehabilitation methodology if required to assist with achieving the final end use objectives and rehabilitation criteria regarding agricultural land.

Weather conditions and seasonal rainfall will be tracked and recorded as part of the trial.

The length of monitoring of the trial plots from establishment is anticipated to be approximately three years, however the time will vary based on the location with respect to the mine plan.

In addition to the trial plots to be established as outlined above, given the acknowledgement of limitations in the length of time available for monitoring prior to mining progressing, to provide a more comprehensive period of monitoring in advance of full site rehabilitation, Cell 1 will be used as the

ongoing rehabilitation trial plot. Cell 1 will be representative of mined and full rehabilitation protocols. Any applicable learnings from the rehabilitation trial plots will be implemented for Cell 1 (and for future cells). Monitoring will be in accordance with MM-RH05 from the Ministers Assessment of the EES, including monitoring for 5 to 7 years, which includes at least one season of below average rainfall without stored water. Where such conditions are not experienced in 5 to 7 years, the trial will be extended until such a season. Monitoring of Cell 1 will also comply with monitoring outlined in Table 21.

Knowledge gained through the site establishment and analysis of Area 1 (trial plots and the rehabilitation on the rehabilitation performance of the initial mining blocks) will inform updated rehabilitation criteria and will be applied to future cells in Area 1 and in Area 3. It is envisaged that additional soil reinstatement plots are not required for Area 3, given monitoring of actual rehabilitation in Cell 1 for example, will be available.

8. Premature Closure

This Rehabilitation Plan will be the governing document for implementation of mine closure.

Staged and progressive rehabilitation and backfilling of mining blocks will be undertaken, which limits the amount of land needing rehabilitation at any given time and will limit any legacy rehabilitation issues in the event of unplanned closure.

If the mine was to close prematurely after commencement of mining, an updated detailed Rehabilitation Plan will be prepared for approval by ERR. Issues associated with early closure include:

- Changed final landform profile due to reduced mining disturbance footprint.
- Insufficient material available to achieve approved final landform.

In the event of early closure, at a minimum, the updated Rehabilitation Plan is to include (but not be limited to):

- Revised final landform, including consideration to surface water drainage paths.
- Updated materials balance, and assessment as to whether material is required to be imported to meet updated landform.
- Updated assessment of geotechnical risks, including monitoring and maintenance program for subsidence.
- Engagement with relevant stakeholders should there be changes to future land use (e.g. does this alter the intent to return the land to productive agricultural land).

9. Post-Rehabilitation Risk Identification and Assessment

The Mineral Resources (Sustainable Development) (Mineral Industries) Regulation 2019 identifies the requirement for a risk assessment to be undertaken, that assesses the risks that the rehabilitated land may pose to the environment, to any member of the public or to land, property or infrastructure in the vicinity of the rehabilitated land, including:

(i) the type, likelihood and consequence of the risks; and

(ii) the activities required to manage the risks; and

(iii) the projected costs to manage the risks; and

(iv) any other matter that may be relevant to risks arising from the rehabilitated land.

The regulations define "relevant risks" as risks that may require monitoring, maintenance, treatment or other ongoing land management activities after rehabilitation is complete.

In identifying what (if any) “relevant risks” may exist, the following factors are relevant:

- Landform: the backfilled, rehabilitated landform will be very similar to the existing landform, being a flat plain without precipitous voids or sharp relief. Closure will be achieved following demonstration that final landform levels and gradients are achieved and within stated criteria, and only once sufficient monitoring has demonstrated the landform is not affected by differential or ongoing settlement. Consequently, there will be no ongoing landform related risks to the public such as falling rocks, unstable slopes or unsafe landforms that require ongoing monitoring or management to protect public health;
- Soils: The backfill plan includes reinstatement of a minimum 1.0 m soil profile comprising topsoil and subsoil. The existing soil properties will be maintained as far as possible through careful handling and amelioration as necessary. Tailings from mineral processing will be buried deep beneath overburden and the reinstated soil profile. Soil condition, productivity and valuable ecosystem services will be re-established. Closure will be achieved upon demonstration of successful soil restoration. No further intervention or ongoing monitoring will be required;
- Vegetation: the rehabilitated landform is to be returned to a predominantly agricultural land use. Closure criteria includes goals for establishment of a vegetation cover consistent with future agricultural use and aimed mainly at providing stability and soil protection. Upon closure signoff there are no residual risks relating to vegetation, or to native flora or fauna, that may require monitoring or maintenance. The only exception to this is in the reinstated road corridors, where native vegetation reestablishment may be undertaken. This will be undertaken well in advance of final closure being achieved, and signoff will occur once vegetation is trending towards final criteria;
- Drainage: the final landform involves a simple, sheet flow drainage pattern. Closure will be achieved upon demonstration of stable drainage patterns. No ongoing monitoring or management will be required; and
- Water quality: the potential for impacts on groundwater systems has been comprehensively assessed and while there is expected to be a zone of altered groundwater quality (may be less saline and may contain dissolved metals), the changes are not expected to impact on sensitive receptors. The rehabilitated land is not predicted to cause pollution to land and surface waters that may require ongoing monitoring or management.

The overall objectives of rehabilitation are to ensure that the final landform and land use is safe, stable and non-polluting, and capable of supporting the final land use which is broadacre agriculture. Closure will be met upon demonstrating achievement of these goals, by which time the land will be expected to

be back in agricultural production. Based on the above, it is reasonable to assume the rehabilitated land poses little if any residual risk to the environment, public, land or property.

10. Rehabilitation Monitoring and Maintenance

10.1 Monitoring

VHM will implement a formalised rehabilitation monitoring and review process to monitor rehabilitation performance, identify emerging risks and enable early intervention. Rehabilitation monitoring will include surveys to be undertaken routinely within each discrete rehabilitation area. The recommended frequency of survey will vary depending on the stage of rehabilitation and progress towards completion, but also depending on the presence or otherwise of active rehabilitation threats. A typical monitoring frequency might include:

- Monthly for the first three months during initial vegetation establishment, then
- Quarterly for the first year following commencement of rehabilitation, then
- Annually until completion and achievement of closure criteria.

Rehabilitation monitoring will continue until the rehabilitation objectives have been met and are substantially trending towards the completion criteria such that active intervention is no longer required and the area is assessed as stable.

Rehabilitation surveys will record key details of rehabilitation progress, including identification of any emerging risks (including but not limited to weeds, diseases and pests), activation of triggers for mitigation controls, and noting any corrective actions that may be required. Any identified deficiencies or failures shall be noted and follow-up actions identified. Success factors will be noted for future reference and to assist in continuing improvement.

The elements of the monitoring program relevant to rehabilitation is summarised in Table 21.

Table 21 Rehabilitation Monitoring (to verify compliance with Criteria)

Monitoring	Relevant Domain	Monitoring details	Frequency
Material balance	Domain 1 Domain 2	Tracking of material balance via annual survey and/ or truck movements	During construction and annually during operations.
Settlement	Domain 1	Monitoring and Instrumental Schedule for settlement showed as inset below, from pitt&sherry (refer to Appendix C1 for full details).	
Overburden placement	Domain 1	Insitu Density using sand replacement method and moisture content testing to verify void ratio/bulk density after placement compaction the cell backfill. Undisturbed samples for oedometer tests in laboratory to verify creep parameters assumed in TARP (Appendix C1).	One test every 3m of vertical lift in first cell- during and after filling

Monitoring	Relevant Domain	Monitoring details	Frequency
Tailings	Domain 1	CPT and Oedometer tests through tailings once adequate overburden in place to verify uniformity (i.e. absence of clay layers which may slow down consolidation of tailings). 4 CPTu and 4 Oedometer Test Per Cell once overburden thickness is adequate to support CPT rig.	On completion of placement of 2-3m of overburden over tailings
Agronomic assessment	Domain 1,2,3	All domains where agricultural land use has been re-established post mining. Soil sampling to confirm appropriate replacement of soil zones • Plant tissue tests • NDVI measurements • Grain analysis • Yield maps • Standard agronomic monitoring for pests, weeds and diseases and nutrition	After soil reinstatement: Mid-late winter annually Mid-winter and mid spring annually At harvest annually At harvest annually Monthly
Agronomic assessment	Domain 1,2,3	Undertake grain yield mapping from adjacent non-mined paddocks and paddocks to be mined in the future to establish whether comparable yields are being obtained from rehabilitated mine areas (reference sites). Productivity variation of rehabilitated areas to be monitored by NDVI imagery during the growing season and causes investigated where significant variations are observed compared with reference sites. Plant tissue tests to be taken to monitor the nutritional status of the crop, to identify any underlying nutritional issues. Initial crops grown should be harvested with yield monitor to map actual and relative yield variation across crops. Monthly monitoring to take place at all locations with crops sown to ensure issues such as weeds, nutrient issues (deficiencies and toxicities) diseases and pests are not compromising crop production. Crop monitoring will be undertaken for at least five years and include biannual in-crop biomass assessments and tissue tests, and grain yield and quality for reinstated areas and reference sites. If	Annual Mid- late winter annually Mid- late winter annually Annual Monthly

Monitoring	Relevant Domain	Monitoring details	Frequency
		comparable production is not achieved within five years, further remediation should be undertaken.	
Topsoil stockpiles	Domain 3	Sampling of topsoil stockpiles will occur prior to respreading with testing undertaken for agricultural nutrients as per Table 12.	Prior to topsoil replacement. Sample on a 100 m grid.
Inspections	Domain 1, 2, 3	Rehabilitation (visual) surveys will record key details of rehabilitation progress, including identification of any emerging risks, activation of triggers for mitigation controls, and noting any corrective actions that may be required to meet rehabilitation criteria. Any identified deficiencies or failures shall be noted and follow-up actions identified. Success factors will be noted for future reference and to assist in continuing improvement. Details to be recorded during the rehabilitation survey include: • Area inspected • Date and time of inspection • Person undertaking the inspection • Photographic record • Landform stability / functionality • Settlement/subsidence in line with design goals • Continuity with surrounding lands • Surface water drainage. Note factors including: • Free draining or ponding • Sheet flow stability • Presence and stability of any concentrated flows including berms and batter drains • Stability and adequacy of discharge control and discharge locations • Soil surface cover and erosion risk: • Ground cover % • Presence and severity of sheet, rill and gully erosion • Assess vegetation cover, health, abundance, type and structure (qualitative assessment) • Weeds, type and abundance	Indicative frequency: Monthly for the first three months during initial vegetation establishment, then quarterly for the first year following commencement of rehabilitation, then annually until completion and achievement of closure criteria.

Monitoring	Relevant Domain	Monitoring details	Frequency
		• Observations around any additional fire risk compared to surrounding agricultural land. • Record specific repair/maintenance actions, with timelines and responsibilities for completion. Include an audit process to follow up and close out corrective actions.	
Groundwater monitoring	Domain 1 Domain 2	As per Groundwater Management Plan.	
Gamma radiation dose survey	Domain 1, Domain 2	Undertake a gamma radiation survey across the domains to verify the final levels are comparable to pre-mining surveys (based on analysis by radiation specialist).	Survey following completion of all soil replacement and capping activities.

10.2 Trigger Action Response Plans

The following Trigger Action Response Plans (TARPs) have been prepared for implementation during the rehabilitation and monitoring phase as key activities that will likely require ongoing maintenance and improvement during the rehabilitation and monitoring phase:

- Assessment of differential settlement and consolidation and remedial measures to achieve final criteria. This TARP has been developed in consideration of predicted settlement (Appendix C1).
- Rectification of establishment of agricultural vegetation cover to achieve final criteria. This TARP has been prepared by an agronomist in consideration of the final land use (Appendix C2).

TARPs are live documents and may be updated during rehabilitation based on monitoring as they are intended to be adaptive documents.

10.3 Rehabilitation Quality Assurance

A Rehabilitation Quality Assurance Process (RQAP) will be implemented through operations and each phase of rehabilitation. The RQAP will ensure that:

- Persons responsible for rehabilitation implementation are identified;
- Rehabilitation is being implemented consistent with the nominated methodologies;
- Rehabilitation records are updated; and
- Identified rehabilitation risks are adequately addressed at each phase of rehabilitation.

The RQAP will include inspections, monitoring and documentation to ensure that each phase of decommissioning and rehabilitation has been completed according to the nominated methodologies before proceeding to the next rehabilitation phase. The rehabilitation risk assessment is part of the quality assurance process as it is a live document that will be updated to address any emerging risks.

As part of the RQAP, a rehabilitation register will be developed and maintained. The register aims to record success factors and lessons learned from previous reviews to assist future Rehabilitation Planning and improve outcomes. This register will detail the current rehabilitation status within each mining domain and outline the rehabilitation works undertaken.

Table 22 Quality Assurance Elements

Mining / rehabilitation phase	Quality assurance elements
Active mining	• Mine and rehabilitation plans, updated to reflect current status and future planning • Topsoil and subsoil inventory to document stripped, stockpiled and re-spread resources and soil amelioration • Scheduled rehabilitation surveys to identify soil and land erosion and adequacy of soil, erosion and drainage controls • Weed inspections and maintenance.
Decommissioning	• Inspections and demolition reports to confirm all infrastructure has been removed • Contamination assessment, remedial action plans and validation reports post site clean-up • Waste tracking documentation to demonstrate that all wastes are disposed legally.
Landform establishment / post-mine backfill	• Survey and preparation of as constructed drawings of final constructed landforms and water drainage structures • Inspection to record the progression of the intended landform.
Soil preparation	• Registers of topsoil and subsoil stockpiles including management records (such as stripping/stockpiling dates, weed control, amelioration) • Records of soil replacement including source and destination of soil resources, soil replacement depths and methodologies, and soil amelioration (e.g. gypsum application fertilisers) • Soil testing results to confirm appropriate soil physical and chemical parameters for plant establishment • Soil surface preparation (e.g. ripping, scarification) • Implementation of any necessary erosion and sediment controls.
Vegetation establishment	Records of revegetation activities including: • Date/season of revegetation actions • Weather conditions • Seed mix and seeding rate (kg/ha) • Native revegetation to include planting rates (seed (kg) or tubestock/ha), species and seed provenance where known. • Scheduled rehabilitation surveys to allow early identification of any emerging threats to rehabilitation, assess stability and revegetation success • Regular inspections to identify weed and pest animal impacts and controls.

10.3.1 Record Keeping

Good record keeping will assist to track Rehabilitation Planning and progress and improve success. Important rehabilitation records include:

- Rehabilitation Plan (this document). The plan will be reviewed and updated as necessary through the course of mine operations and closure planning
- Rehabilitation Risk Assessment. Maintain and update a risk assessment as required

- Register of soil materials for use in rehabilitation. The register will identify material type, locations, quantity and treatment/amelioration history
- Rehabilitation Survey results, included as part of a Rehabilitation Register
- Rehabilitation Register to record rehabilitation activity and monitoring. This will detail the current rehabilitation status and outline in detail the rehabilitation methodologies undertaken (including landform preparation, drainage goals, growth media development, surface preparation techniques, and revegetation processes, and any follow up corrective actions). The register shall highlight success factors and lessons learned from previous reviews to assist future rehab planning and improve outcomes. The register will include quality assurance records such as as-built drawings. A photographic log will be kept as part of the rehabilitation register
- Additional quality assurance documentation as described in Section 10.3 of this plan.

11. Plan review

This Plan must be reviewed every five years or following updated technical information which impacts on rehabilitation.

12. Roles and responsibilities

It is the responsibility of the General Manager to implement this Rehabilitation, track progress and commission the rehabilitation milestones outlined.

13. References

ATCW, April 2025. Tailings Storage Facility Design, Goschen Rare Earths and Mineral Sands Project Goschen.

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pit&sherry, November 2023b. Geotechnical Investigation Factual and Interpretive Report- Goschen Project, rev 00. Prepared for VHM.

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pitt&sherry, 2025. Basis of Geotechnical Design. Prepared for VHM Limited.

pitt&sherry, March 2025b. TARP for Mine Closure [Rev01]. Prepared for VHM Limited.

SLR, July, 2023. Soil and Land Resources Assessment. Goschen Rare Earths and Mineral Sands Project. Prepared for VHM Limited.

VHM Limited, November 2023. Environmental Effects Statement- Goshen Rare Earths and Mineral Sands Project.

Appendix A Figures

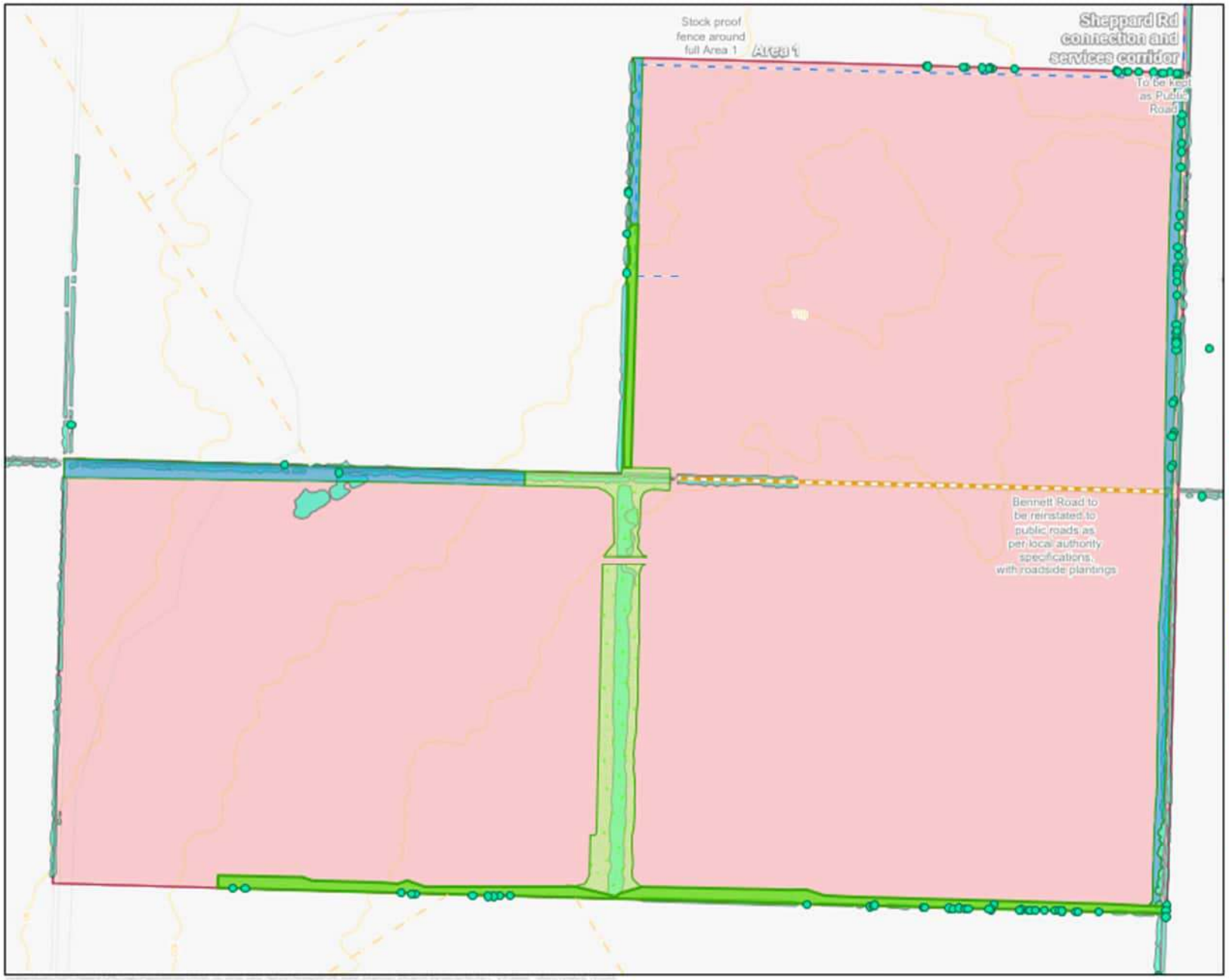

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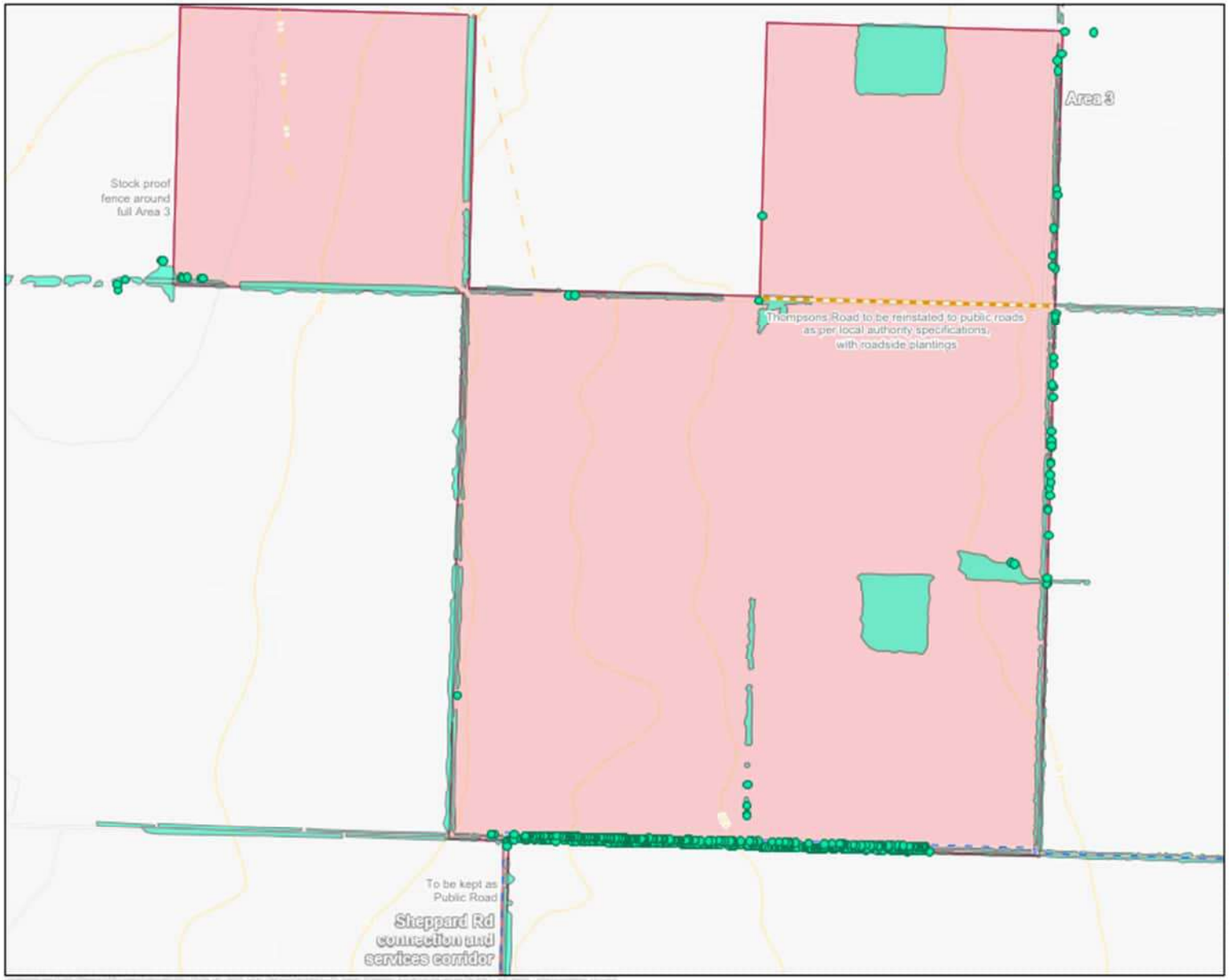
FIGURE F1:
END USE PLAN AREA 1

PROJECT NAME:
GOSCHEN RARE EARTHS AND MINERALS SANDS PROJECT

Legend

- MIN007226
- Agricultural Land
- Kangaroo Lake pipeline
- Road to be decomissioned during mining
- Powerline
- Opportunistic infill planting
- Infill planting in gaps in vegetation
- Visual amenity planting
- Retained Native Vegetation patch
- Retained Tree

LAST MODIFIED: 14 Nov 2024



VHM Limited

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FIGURE F2:
END USE PLAN AREA 3

PROJECT NAME:
GOSCHEN RARE EARTHS AND MINERALS SANDS PROJECT

Legend

- MIN007226
- Agricultural Land
- Kangaroo Lake pipeline
- Road to be decomissioned during mining
- Powerline
- Retained Native Vegetation patch
- Retained Tree

LAST MODIFIED: 13 Nov 2023

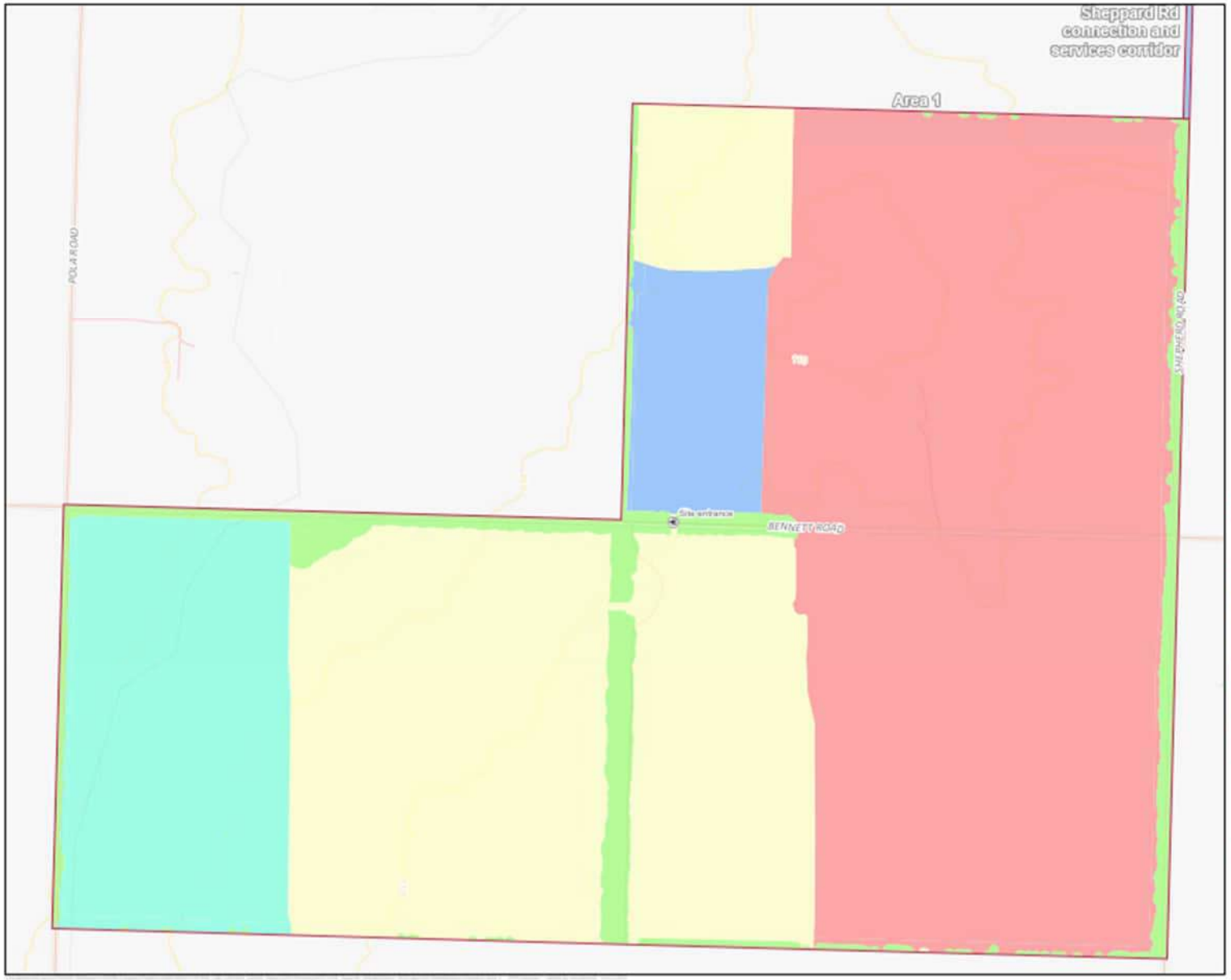

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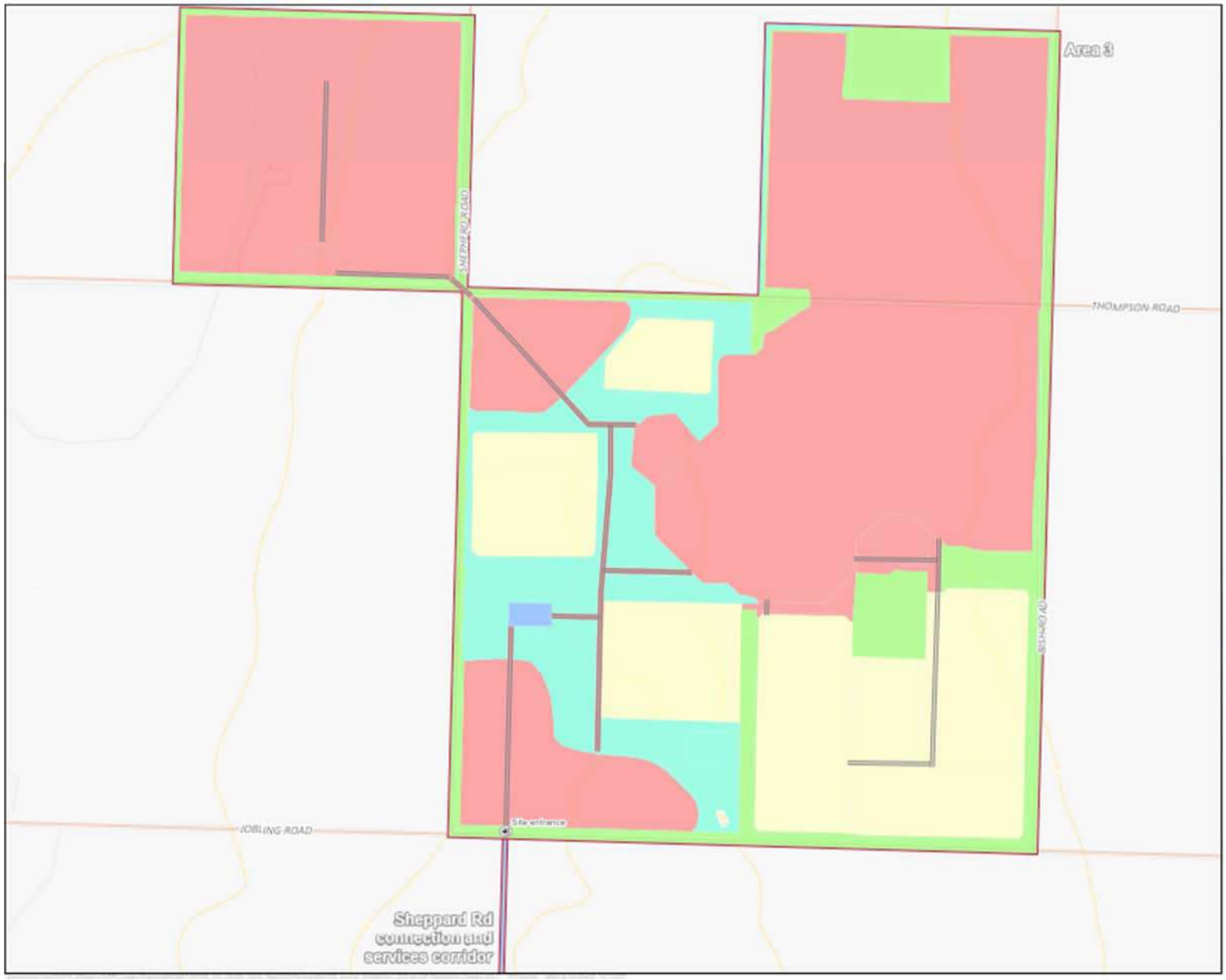
FIGURE F3:
REHABILITATION DOMAINS - AREA 1

PROJECT NAME:
GOSCHEN RARE EARTHS AND MINERALS SANDS PROJECT

Legend

- MIN007226
- Site entrance
- Domain 1: Mining blocks and in-pit TSFs
- Domain 2: Processing Plant and supporting infrastructure
- Domain 3: Stockpiles
- Domain 4: Sensitive areas requiring protection
- Domain 5: Land not disturbed by mining

LAST MODIFIED: 13 Nov 2025



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VHM Limited

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FIGURE F4:
REHABILITATION DOMAINS - AREA 3

PROJECT NAME:
GOSCHEN RARE EARTHS AND MINERALS SANDS PROJECT

Legend

- MIN007226
- Site entrance
- Haul road
- Domain 1: Mining blocks and in-pit TSFs
- Domain 2: Processing Plant and supporting infrastructure
- Domain 3: Stockpiles
- Domain 4: Sensitive areas requiring protection
- Domain 5: Land not disturbed by mining

LAST MODIFIED: 14 Nov 2019

LEGEND

- PIT SHELL OUTLINE
- BUNDS
- PROJECT BOUNDARY
- VEGETATION EXCLUSION ZONE

GENERAL ARRANGEMENT - FULLY DEVELOPED SITE

PRIOR TO REHABILITATION ACTIVITY

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A	PRELIMINARY SUBMISSION	DE	[illegible]	[illegible]	[illegible]

APPROVED: ORIGINAL COPY ON FILE "V" SIGNED BY
SIGNED
DATE

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SCALE IN METRES - 1:7500

pitt&sherry

CLIENT: VHM LIMITED

CONTRACT TITLE: GOSHEN MINE REHABILITATION SERVICES

STATUS: INFORMATION ONLY

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DATUMS: GDA20-MGA54

DRAWING No.: S-P.24.1388-00-CIV-SKT-009

REVISION: D

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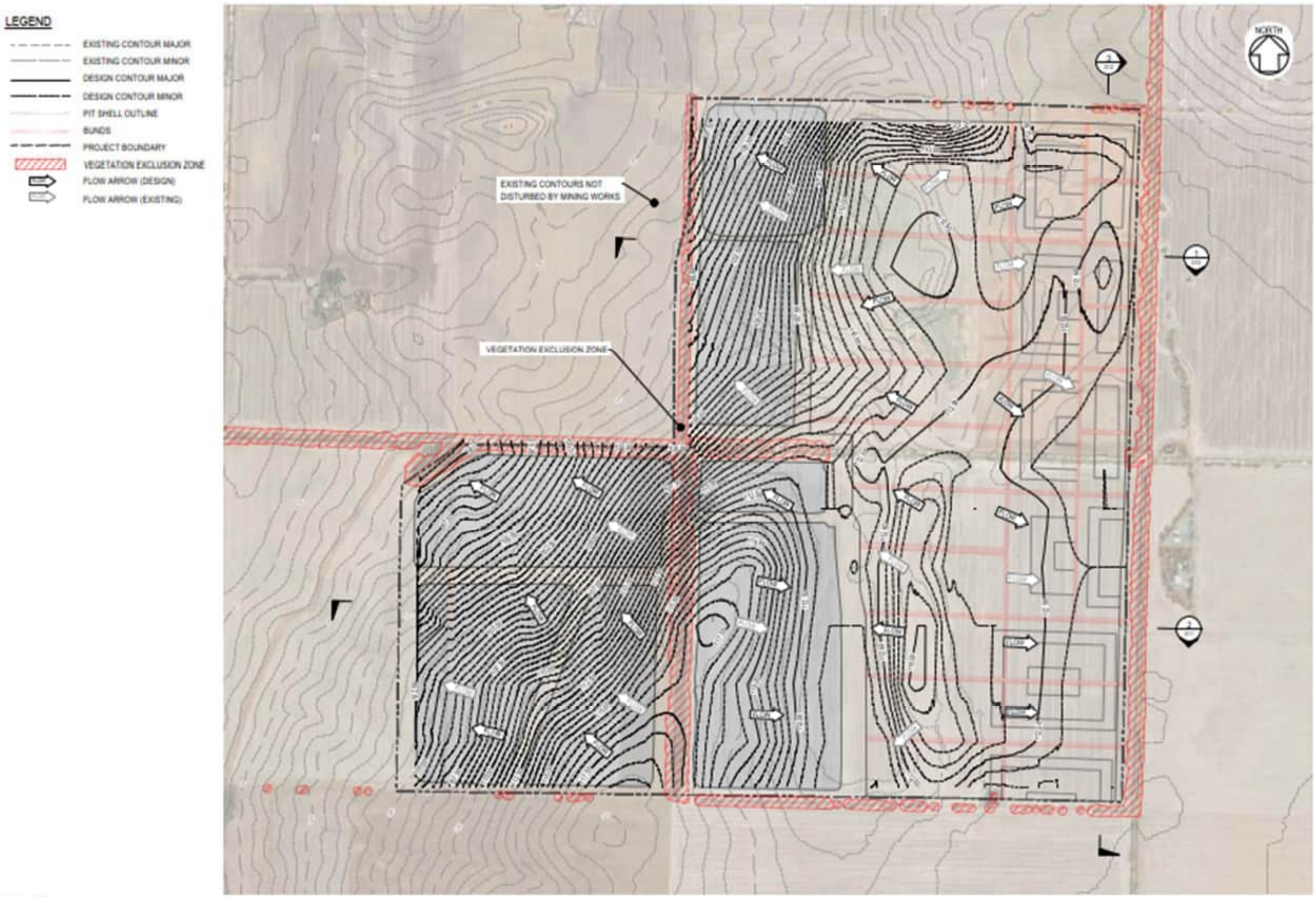

NOTES:

1. OVERLAND FLOW PATHS FROM REHABILITATED SURFACE TO MATCH WITH EXISTING FLOW PATH.

REHABILITATED SURFACE AND FLOW DIRECTION

SCALE 1:7500

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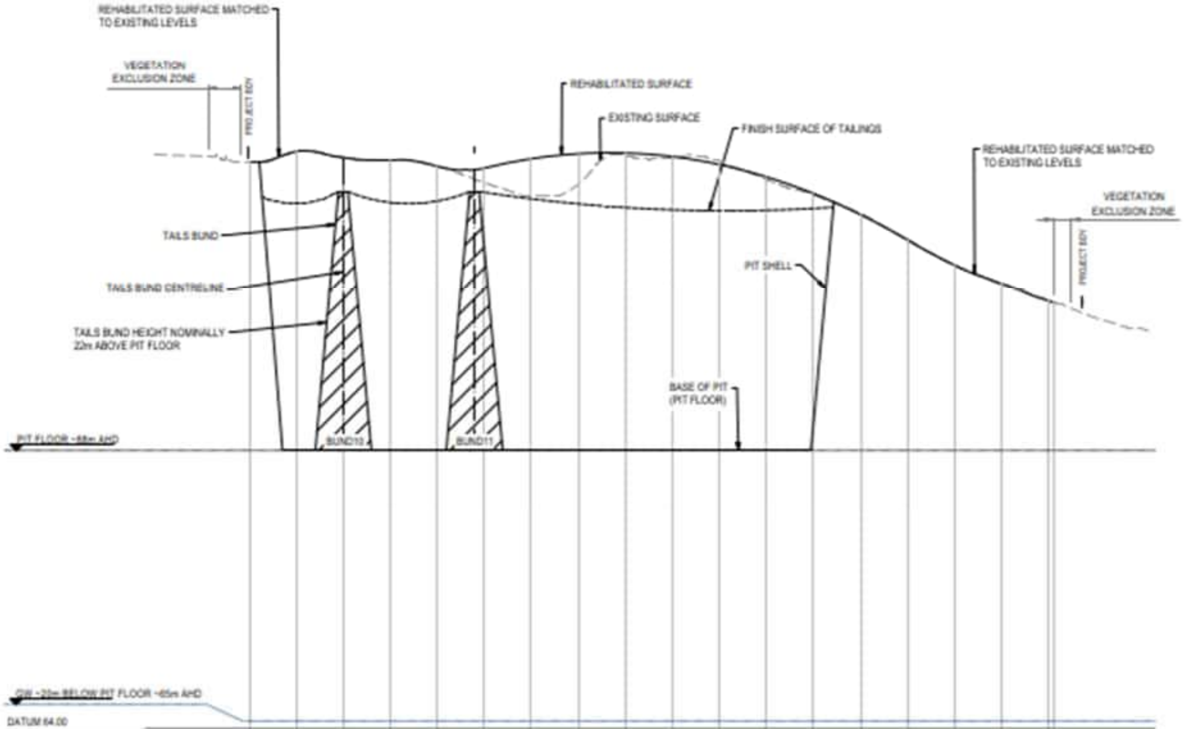

DATUM 64.00

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DESIGN SURFACE LEVELS		112.070	113.011	112.509	112.300	111.760	111.596	112.394	112.825	112.888	112.580	111.904	110.857	109.442	107.657	105.509	103.360	101.774	[illegible]	
DEPTH DIFFERENCE		0.000	0.000	0.000	0.000	0.000	-1.232	-3.194	-2.606	-0.220	-0.050	0.308	-0.207	-0.066	0.077	0.000	0.000	0.000	[illegible]	
CHAINAGE	-200.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000	800.000	900.000	1000.000	1100.000	1200.000	1300.000	1400.000	1500.000	1600.000	[illegible]	1911.450

TYPICAL LONGITUDINAL SECTION 1
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VERTICAL SCALE 1:200

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SCALE IN METRES - 1:5000 H

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SCALE IN METRES - 1:200 V

NOTES:

1. A VERTICAL EXAGGERATION (x 5) HAS BEEN APPLIED TO THE LONGITUDINAL SECTION TO HIGHLIGHT THE DIFFERENCE BETWEEN THE EXISTING SURFACE AND THE REHABILITATED SURFACE.
2. BUNDS ARE INDICATIVE AND THE WIDTH ASSUMED TO BE 120m AT THE BASE AND 20m AT THE TOP.
3. THE REHABILITATION DESIGN INCORPORATES A 50m TRANSITION ZONE AROUND THE PERIMETER OF THE MINE AREA WHERE THE EXISTING AND NEW SURFACES MERGE.
4. OVERLAND FLOW PATHS FOR THE REHABILITATED LAND FORM MERGE WITH THE EXISTING FLOW PATHS.
5. REFERENCE DRAWING ATCW-2025-240280.

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REVISION	D

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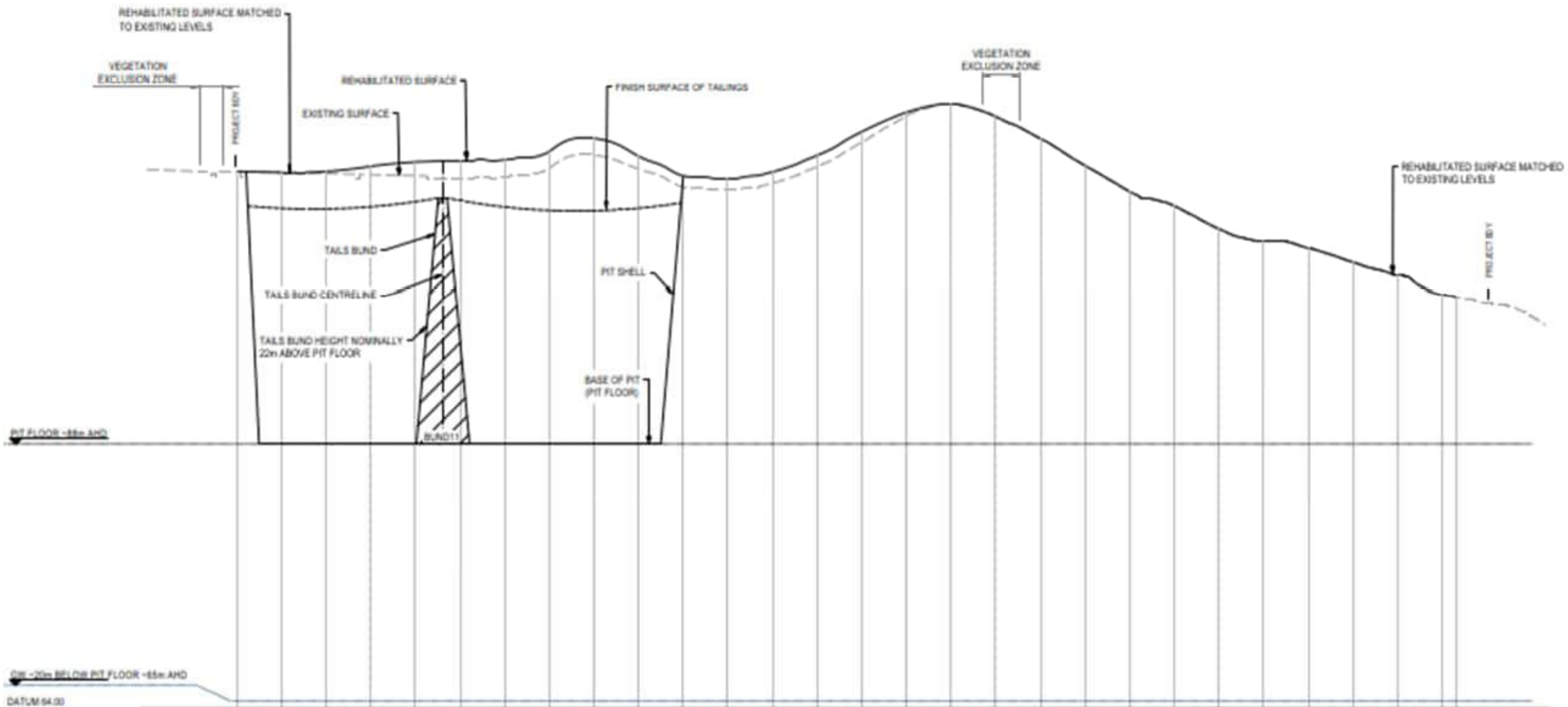

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DESIGN SURFACE LEVELS		111.965	111.888	111.976	112.433	112.821	112.900	113.017	113.733	114.942	113.341	111.562	111.400	111.940	113.409	115.524	117.256	118.000	116.875	114.912	112.491	110.160	108.908	106.845	105.781	105.124	103.881	102.662	100.984	100.732	
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CHAINAGE	-200.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000	800.000	900.000	1000.000	1100.000	1200.000	1300.000	1400.000	1500.000	1600.000	1700.000	1800.000	1900.000	2000.000	2100.000	2200.000	2300.000	2400.000	2500.000	2600.000	2700.000	2736.929	3030.929

TYPICAL LONGITUDINAL SECTION 2
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VERTICAL SCALE 1:200

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SCALE IN METRES - 1:5000 H

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SCALE IN METRES - 1:200 V

NOTES:

1. A VERTICAL EXAGGERATION (x 5) HAS BEEN APPLIED TO THE LONGITUDINAL SECTION TO HIGHLIGHT THE DIFFERENCE BETWEEN THE EXISTING SURFACE AND THE REHABILITATED SURFACE.

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pitt&sherry

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STATUS: INFORMATION ONLY

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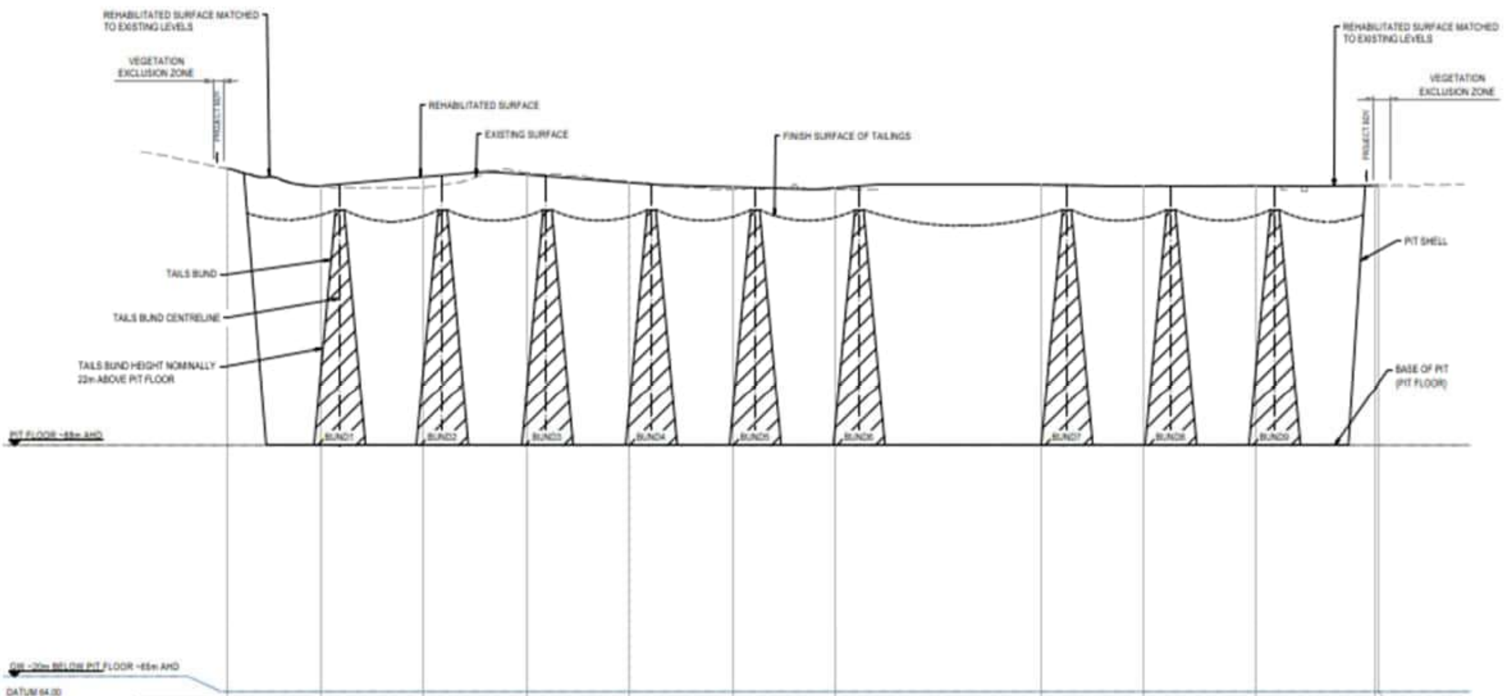

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DEPTH DIFFERENCE		0.000	-0.056	-0.954	0.186	0.047	-0.221	-0.150	0.000	0.000	0.000	0.000 0.000	
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TYPICAL LONGITUDINAL SECTION 3
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VERTICAL SCALE 1:200

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SCALE IN METRES - 1:200 V

NOTES:

1. A VERTICAL EXAGGERATION (x 5) HAS BEEN APPLIED TO THE LONGITUDINAL SECTION TO HIGHLIGHT THE DIFFERENCE BETWEEN THE EXISTING SURFACE AND THE REHABILITATED SURFACE.

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REVISION	D

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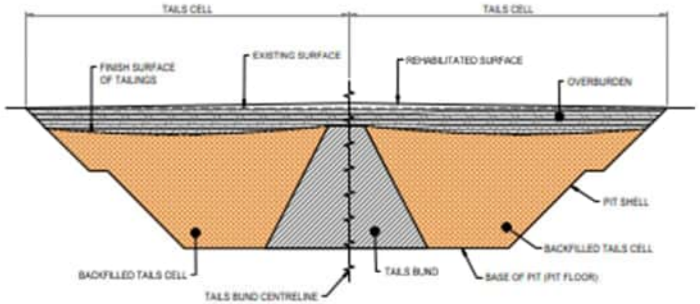

TYPICAL CELL SECTION

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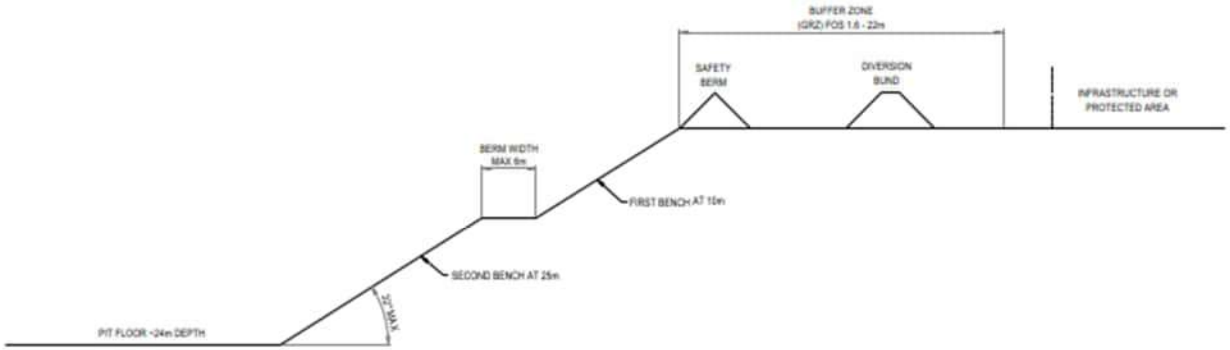

TYPICAL PIT GEOMETRY

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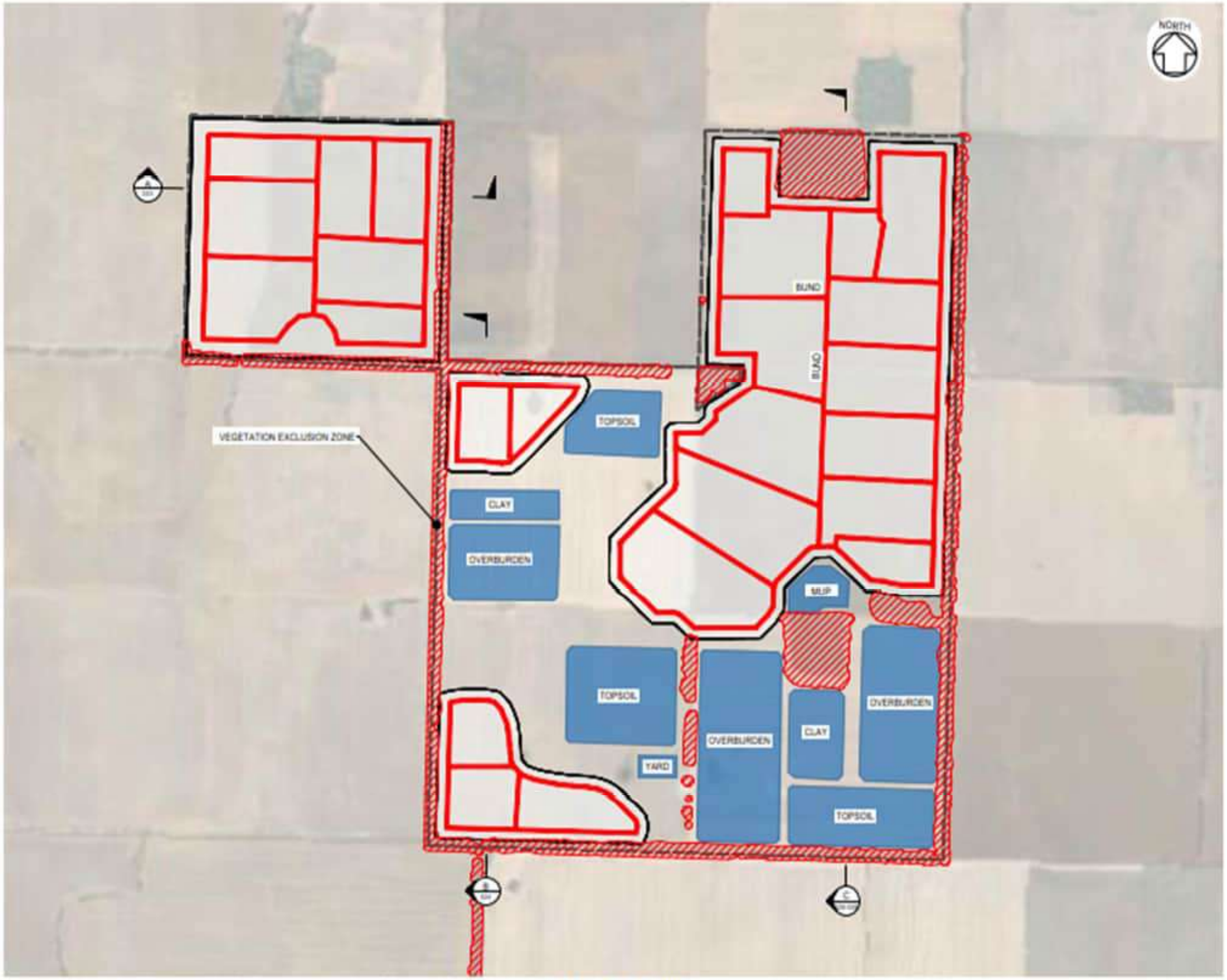
LEGEND

- PIT SHELL OUTLINE
- BUNDS
- PROJECT BOUNDARY
- VEGETATION EXCLUSION ZONE



FULLY DEVELOPED SITE

PRIOR TO REHABILITATION ACTIVITY

SCALE 1:10000

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STATUS	INFORMATION ONLY
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DATUMS	GDA20-MGA54
DRAWING No.	S-P.24.1388-00-CIV-SKT-021
REVISION	A
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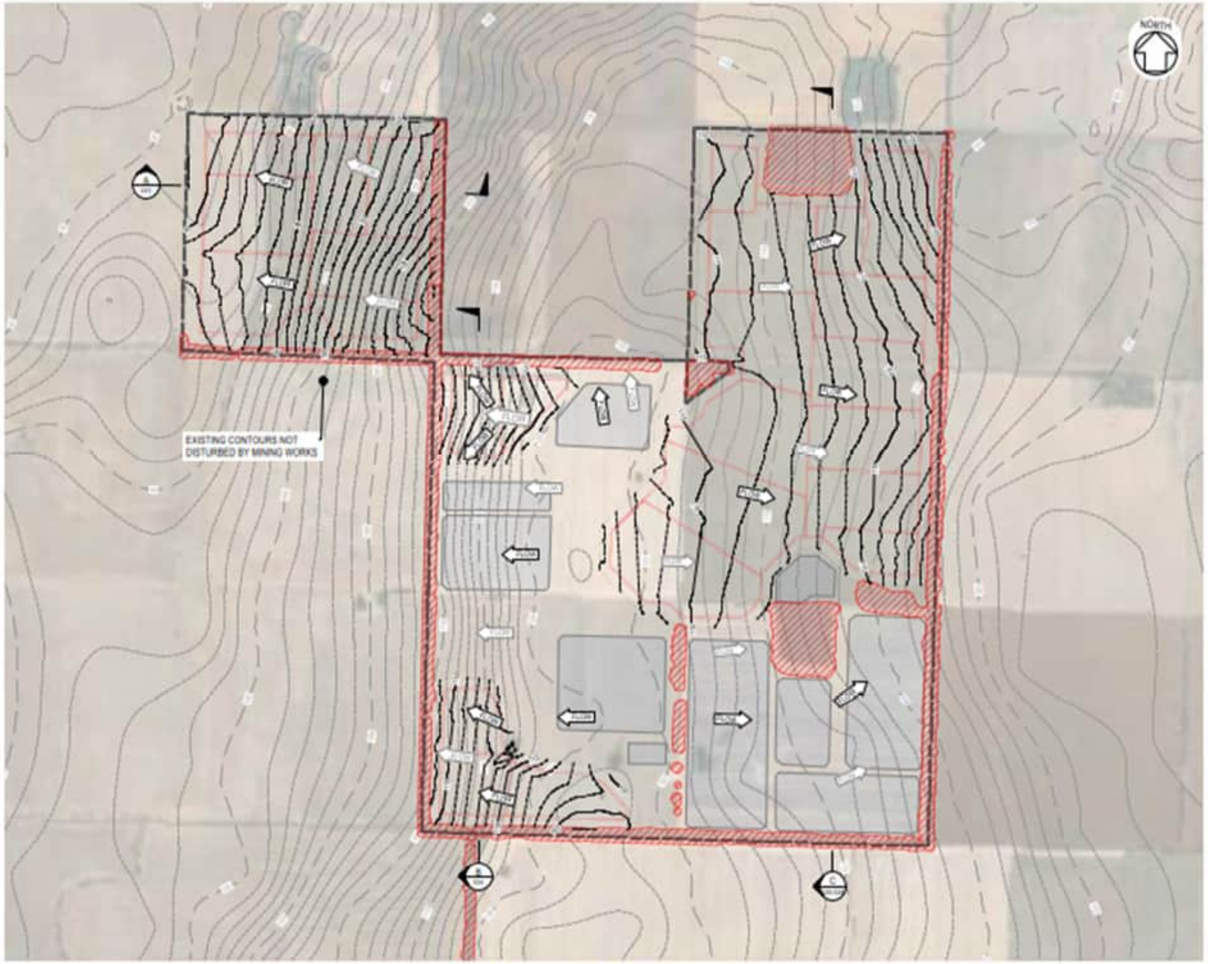
LEGEND

- EXISTING CONTOUR MAJOR
- EXISTING CONTOUR MINOR
- DESIGN CONTOUR MAJOR
- DESIGN CONTOUR MINOR
- PIT SHELL OUTLINE
- BUNDS
- PROJECT BOUNDARY
- VEGETATION EXCLUSION ZONE
- FLOW ARROW (DESIGN)
- FLOW ARROW (EXISTING)



REHABILITATED SURFACE AND FLOW DIRECTION

SCALE 1:10000

NOTES:

1. OVERLAND FLOW PATHS FROM REHABILITATED SURFACE TO MATCH WITH EXISTING FLOW PATH.

SCALE (PLOTTED FULL SIZE)	1:10000
SHEET SIZE	A1
SCALE IN METRES - 1:10000	200 0 200 400 600 800
	pitt&sherry
CLIENT	VHM LIMITED
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STATUS	INFORMATION ONLY
DRAWING TITLE	AREA 3 - GOSHEN PROJECT REHABILITATION REHABILITATED SURFACE LAYOUT PLAN
DATUMS	GDA20-MGA54
DRAWING No.	S-P.24.1388-00-CIV-SKT-022
REVISION	A
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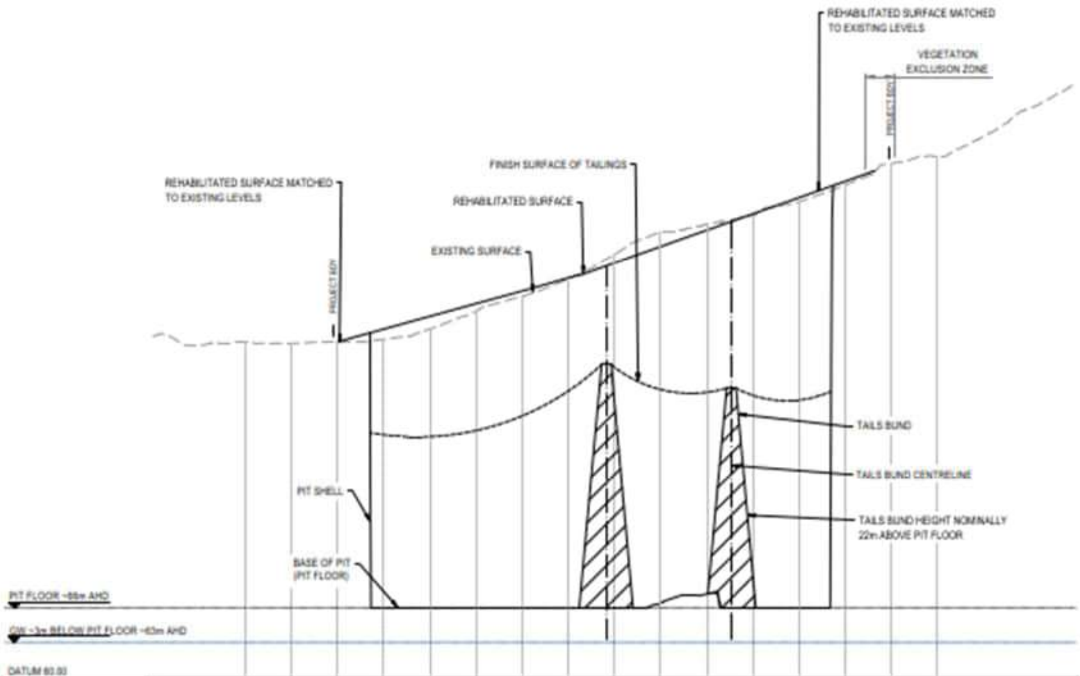

EXISTING SURFACE LEVELS	89.415	88.560	88.686	89.000	89.275	90.111	91.608	92.948	94.410	96.554	96.528	98.184	99.971	101.134	102.538	104.428	105.032	111.398
DESIGN SURFACE LEVELS				89.000	90.110	91.198	92.239	93.394	94.457	95.822	97.249	98.671	100.088	101.495	102.901			
DEPTH DIFFERENCE				0.000	0.865	1.086	0.670	0.436	0.047	-0.732	-1.254	-0.514	0.117	0.361	0.323			
CHAINAGE	-200.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000	800.000	900.000	1000.000	1100.000	1200.000	1300.000	1400.000	1500.000	1796.773

TYPICAL LONGITUDINAL SECTION A
HORIZONTAL SCALE 1:5000
VERTICAL SCALE 1:200

100 0 100 200 300 400
SCALE IN METRES - 1:5000 H

4 0 4 8 12 16
SCALE IN METRES - 1:200 V

NOTES:

1. A VERTICAL EXAGGERATION (x 5) HAS BEEN APPLIED TO THE LONGITUDINAL SECTION TO HIGHLIGHT THE DIFFERENCE BETWEEN THE EXISTING SURFACE AND THE REHABILITATED SURFACE.
2. BUNDS ARE INDICATIVE AND THE WIDTH ASSUMED TO BE 120m AT THE BASE AND 20m AT THE TOP.
3. THE REHABILITATION DESIGN INCORPORATES A 50m TRANSITION ZONE AROUND THE PERIMETER OF THE MINE AREA WHERE THE EXISTING AND NEW SURFACES MERGE.
4. OVERLAND FLOW PATHS FOR THE REHABILITATED LAND FORM MERGE WITH THE EXISTING FLOW PATHS.
5. REFERENCE DRAWING ATCW-2025-240280.

DRAWING REVISION HISTORY

No.	DESCRIPTION	DRAWN	DESIGNED	REVIEWED	DATE
B	GROUND WATER LEVEL UPDATED				
A	ISSUE FOR INFORMATION				

SCALE (PLOTTED FULL SIZE): AS SHOWN
SHEET SIZE: A1

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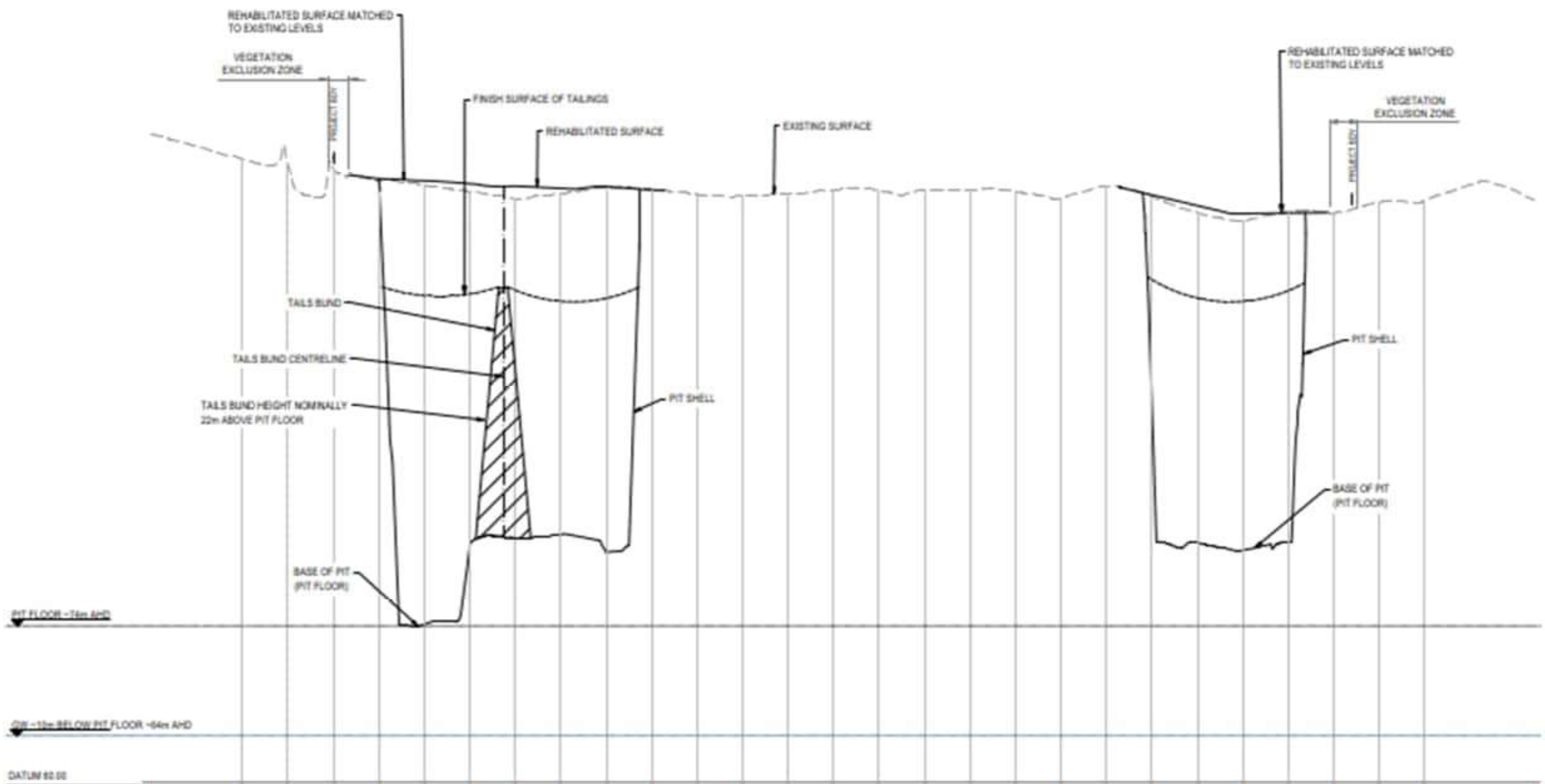
CLIENT: VHM LIMITED
CONTRACT TITLE: GOSHEN MINE REHABILITATION SERVICES
STATUS: INFORMATION ONLY

DRAWING TITLE: AREA 3 - GOSHEN PROJECT REHABILITATION
TYPICAL LONGITUDINAL SECTION - SHEET 1 OF 4

DATUMS: GDA20-MGA54
DRAWING No.: S-P.24.1388-00-CIV-SKT-023
REVISION: B



EXISTING SURFACE LEVELS	115.944	114.605	114.307	113.905	112.691	112.475	111.946	111.230	111.113	112.118	112.136	111.637	111.544	111.723	112.000	111.989	112.010	112.037	111.661	111.294	112.408	111.446	110.020	109.286	110.108	110.000	110.997	111.129	111.176
DESIGN SURFACE LEVELS					113.028	112.649	112.588	112.375	112.119	112.338	112.025											111.589	110.660	108.992	110.027				
DEPTH DIFFERENCE					0.136	0.376	0.642	1.146	0.467	0.161	0.101											0.153	0.640	0.106	0.080				
CHAINAGE	200.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000	800.000	900.000	1000.000	1100.000	1200.000	1300.000	1400.000	1500.000	1600.000	1700.000	1800.000	1900.000	2000.000	2100.000	2200.000	2300.000	2400.000	2500.000	2600.000	2640.025

TYPICAL LONGITUDINAL SECTION B
HORIZONTAL SCALE 1:5000
VERTICAL SCALE 1:200

100 0 100 200 300 400
SCALE IN METRES - 1:5000 H

4 0 4 8 12 16
SCALE IN METRES - 1:200 V

NOTES:

1. A VERTICAL EXAGGERATION (x 5) HAS BEEN APPLIED TO THE LONGITUDINAL SECTION TO HIGHLIGHT THE DIFFERENCE BETWEEN THE EXISTING SURFACE AND THE REHABILITATED SURFACE.

SCALE	AS SHOWN
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CLIENT	VHM LIMITED
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STATUS	INFORMATION ONLY
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DATUM	GDA20-MGA54
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REVISION	B

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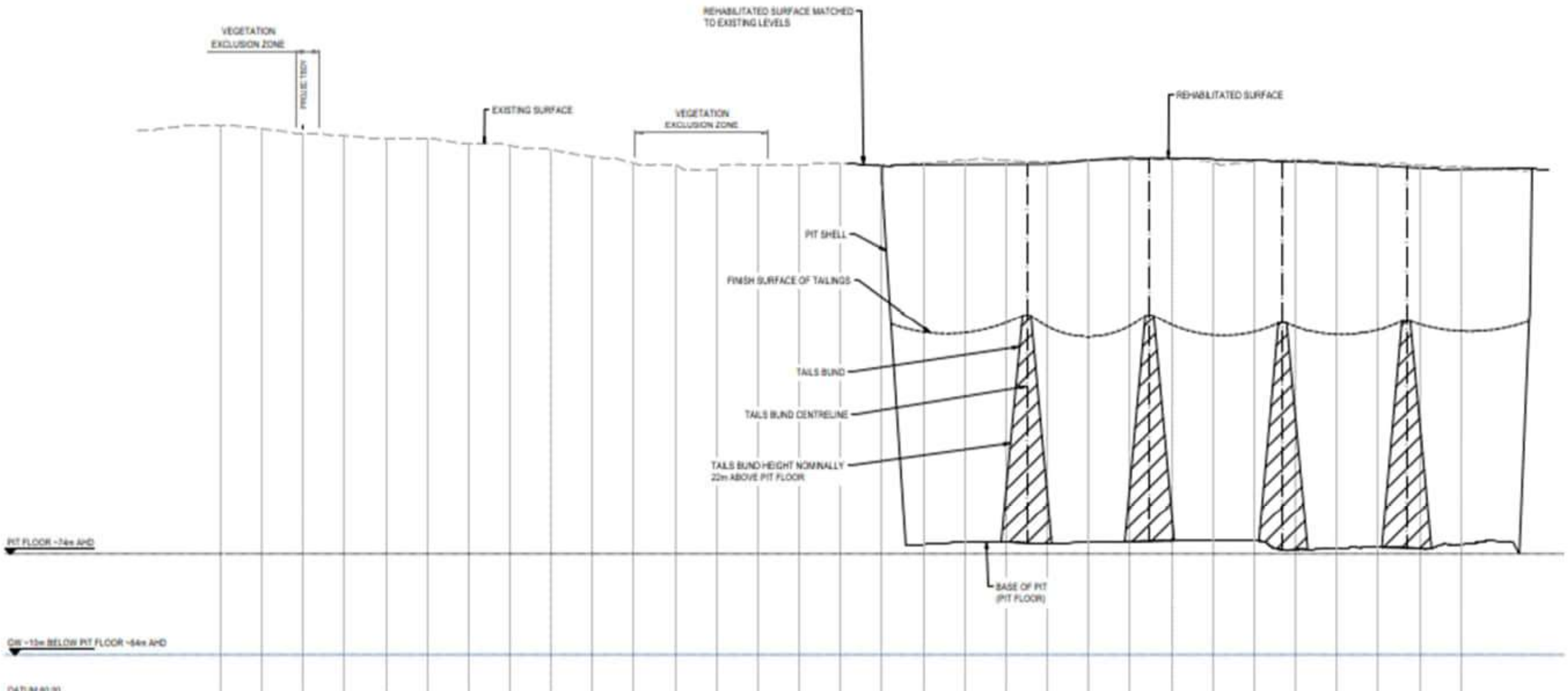

EXISTING SURFACE LEVELS	114.746	115.30	114.90	114.50	114.23	114.00	114.00	113.50	113.30	112.88	112.22	111.58	111.44	111.03	111.50	111.50	111.57
DESIGN SURFACE LEVELS																	
DEPTH DIFFERENCE																	
CHAINAGE	-200.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000	800.000	900.000	1000.000	1100.000	1200.000	1300.000	1400.000	1500.000

EXISTING SURFACE LEVELS	111.50	111.53	111.85	111.88	111.74	111.85	111.91	111.94	111.65	111.81	111.92	111.68	111.53	111.37	111.26
DESIGN SURFACE LEVELS	111.345	111.447	111.488	111.488	111.506	111.875	112.147	112.056	111.979	111.833	111.744	111.534	111.353	111.125	111.025
DEPTH DIFFERENCE	-0.155	-0.091	-0.412	-0.397	-0.207	0.005	0.231	0.110	0.326	0.020	-0.187	-0.146	-0.183	-0.247	-0.192
CHAINAGE	1600.000	1700.000	1800.000	1900.000	2000.000	2100.000	2200.000	2300.000	2400.000	2500.000	2600.000	2700.000	2800.000	2900.000	3000.000

TYPICAL LONGITUDINAL SECTION C
HORIZONTAL SCALE 1:5000
VERTICAL SCALE 1:200

100 0 100 200 300 400
SCALE IN METRES - 1:5000 H

4 0 4 8 12 16
SCALE IN METRES - 1:200 V

NOTES:

1. A VERTICAL EXAGGERATION (x 5) HAS BEEN APPLIED TO THE LONGITUDINAL SECTION TO HIGHLIGHT THE DIFFERENCE BETWEEN THE EXISTING SURFACE AND THE REHABILITATED SURFACE.

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A	ISSUE FOR INFORMATION					

SCALE (PLOTTED FULL SIZE): AS SHOWN — SHEET SIZE: A1

pitt&sherry

CLIENT: VHM LIMITED

CONTRACT TITLE: GOSHEN MINE REHABILITATION SERVICES

STATUS: INFORMATION ONLY

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DATUMS: GDA20-MGA54

DRAWING No: S-P.24.1368-00-CIV-SKT-025 — REVISION: B

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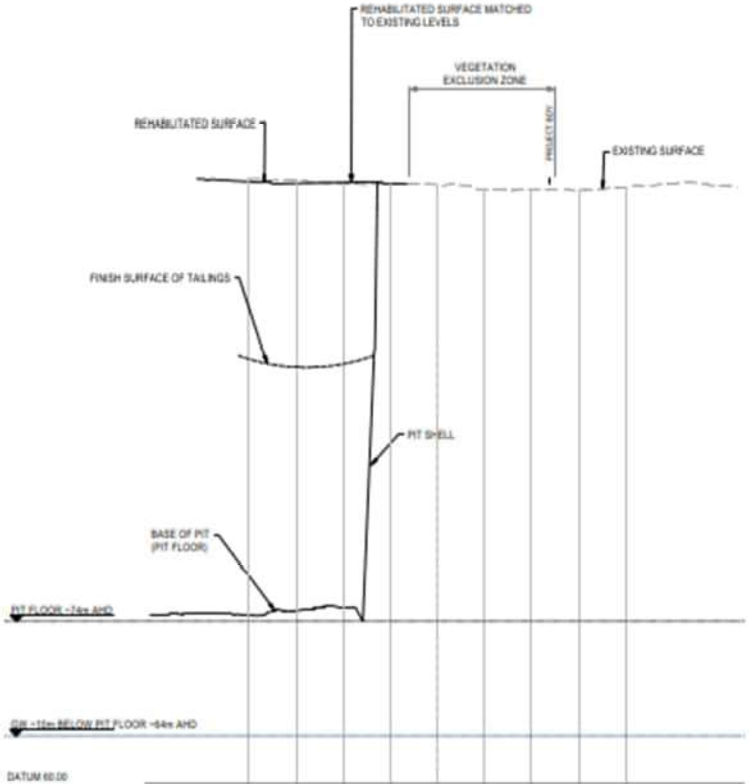

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DESIGN SURFACE LEVELS	111.125	111.025	111.072	111.001						
DEPTH DIFFERENCE	-0.247	-0.192	0.107	0.006						
CHAINAGE	2900.000	3000.000	3100.000	3200.000	3300.000	3400.000	3500.000	3600.000	3700.000	3817.498

TYPICAL LONGITUDINAL SECTION C
HORIZONTAL SCALE 1:5000
VERTICAL SCALE 1:200

SCALE IN METRES - 1:5000 H

SCALE IN METRES - 1:200 V

NOTES:

1. A VERTICAL EXAGGERATION (x 5) HAS BEEN APPLIED TO THE LONGITUDINAL SECTION TO HIGHLIGHT THE DIFFERENCE BETWEEN THE EXISTING SURFACE AND THE REHABILITATED SURFACE.

SCALE (PLOTTED FULL SIZE): AS SHOWN | SHEET SIZE: A1

pitt&sherry

CLIENT: VHM LIMITED

CONTRACT TITLE: GOSHEN MINE REHABILITATION SERVICES

STATUS: INFORMATION ONLY

DRAWING TITLE: AREA 3 - GOSHEN PROJECT REHABILITATION TYPICAL LONGITUDINAL SECTION - SHEET 4 OF 4

DATUM: GDA20-MGA54

DRAWING No: S-P.24.1388-00-CIV-SKT-026 | REVISION: B

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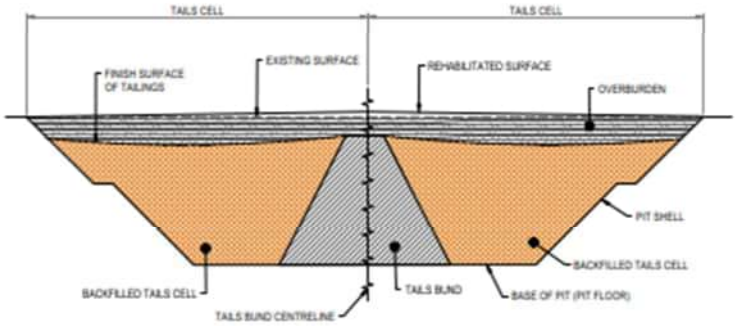

TYPICAL CELL SECTION
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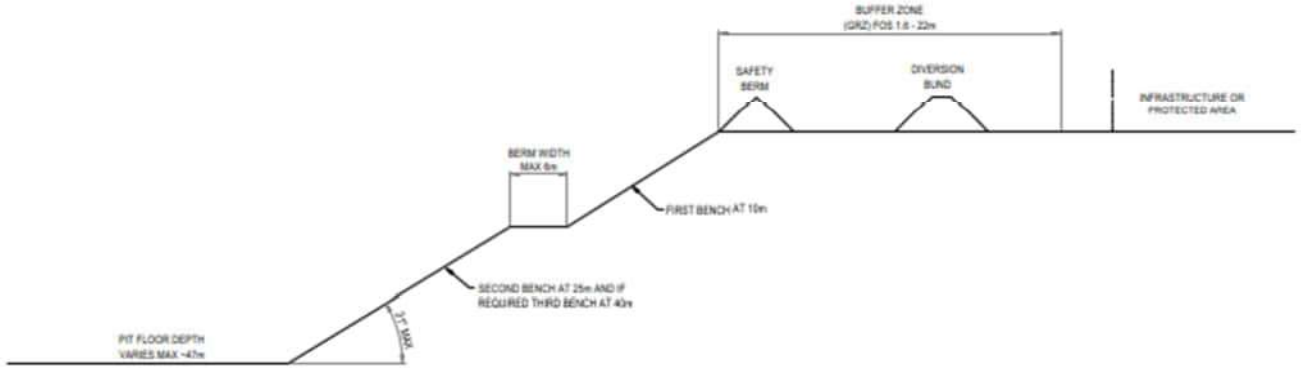

TYPICAL PIT GEOMETRY
NOT TO SCALE

A	ISSUE FOR INFORMATION	DSC	DSM	AT	31/08/2023			

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REVISION		A	
CLIENT No.			
PRINT IN COLOUR			

Appendix B Closure and Rehabilitation Obligations Register

Table B1 Obligations register

Approval	Associated Government Agency/ Legislation	Legal Obligations
Mining Licence – MIN 007256	Earth Resources Regulation Mineral Resources (Sustainable Development) Act 1990	**Schedule 4 Conditions** Throughout the term of the licence, the licensee must take an adaptive management approach that responds to changing risks to groundwater during the course of mining and rehabilitation. The licensee must review the risks of harm to human health and the environment in the context of groundwater impacts by updating the groundwater impact assessment: a) prior to preparing the Groundwater Management Plan under the Work Plan; and b) when new information attained through groundwater monitoring data or updated modelling suggests the risks of harm to human health and the environment have increased or otherwise, every five years. **Part A- Conditions** Condition 1.1: The licensee must carry out work in accordance with the Approved Work Plan and any subsequent Approved Work Plan Variations. 2.1: The licensee must record activities undertaken and the subsequent results obtained, regarding the implementation of any auditing, environmental and rehabilitation monitoring programs, and complaints received. 2.2. The licensee must ensure that documentation generated for any auditing, environmental and rehabilitation monitoring program, and any complaints received is appropriately stored and accessible to relevant personnel and is available upon request by an Inspector. 3.2: Prior to commencing ground intrusive work or work involving the removal or damaging of native vegetation under the definition of low impact exploration the licensee must submit a rehabilitation bond to the satisfaction of the Minister. 10.1: The licensee must implement a program for monitoring environmental impacts and rehabilitation. 10.2 The licensee must submit an Annual Report to the Deputy Chief Inspector that includes: (c) details of current progressive rehabilitation activities and targets; (d) details of completed rehabilitation activities over that year.

Approval	Associated Government Agency/ Legislation	Legal Obligations
		25.1: The licensee must ensure that progressive rehabilitation of disturbed land is carried out as soon as possible including those areas used for exploration activities not requiring an approved work plan. 25.2. The licensee must ensure that, as required, Indigenous species used in rehabilitation must be sourced from the local area, be of local provenance and be appropriate to the site's Ecological Vegetation Class (EVC). 25.3. The licensee must ensure that final rehabilitation is in accordance with the Approved Work Plan.
VHM Limited, November 2023. *Environmental Effects Statement- Goshen Rare Earths and Mineral Sands Project.*	Minister for Planning (Victoria) Environment Effects Act 1978	Refer to Table B2 below for full list of requirements arising out of the Ministers Assessment. A concordance table is provided with the work plan on how these items have been addressed.
EPBC Act Referral	Department of Climate Change, Energy the Environment and Water Environment Protection and Biodiversity Conservation Act 1999	Conditions within approval- register to be updated on receipt.
Work Plan	Earth Resources Regulation Mineral Resources (Sustainable Development) Act 1990	Rehabilitation in accordance with this Rehabilitation Plan.
A18 discharge or deposit of waste to aquifer permit	Environment Protection Authority Environment Protection Act 2017	Conditions within permit- register to be updated on receipt. General Environmental Duty

Approval	Associated Government Agency/ Legislation	Legal Obligations
Cultural Heritage Management Plan (CHMP)	Victorian Aboriginal Heritage Council Aboriginal Heritage Act 2006	No specific rehabilitation requirements.
Radiation Licence	Victorian Department of Health	Radiation licence- register to be updated on receipt.

Mitigation Measure/ Monitoring Requirement	Requirement
MM-RH01	Project will be rehabilitated and closed in accordance with the finalised Rehabilitation Plan and in accordance with the provisions of the MRSDMI. Regulations, including likely conditions such as compliance with the specific provisions of the Radiation Regulations that might apply to the project. As required under the MRSDMI Regulations, the Rehabilitation Plan will be informed by a detailed risk assessment that incorporates post-closure rehabilitation risks, including potential risks that the rehabilitated land may pose to the environment, to any member of the public or to land, property or infrastructure in the vicinity of the rehabilitated land as required under the new duty proposed to be included in the MRSD Act pursuant to the Mineral Resources (Sustainable Development) Amendment Act 2023. The Rehabilitation Plan will include a monitoring and review process to monitor rehabilitation performance, identify emerging risks and enable early intervention in accordance with monitoring and contingency measures outlined in Table 21-7 of the EMF. The Rehabilitation Plan will include a program for monitoring settlement of the tailings and the final surface to identify areas of differential settlement.
MM-RH02	Unplanned closure – Staged and progressive rehabilitation and backfilling of pits will be undertaken, which limits the amount of land needing rehabilitation at any given time and will limit any legacy rehabilitation issues in the event of unplanned closure.
MM-RH03	Unplanned closure – Rehabilitation bond will be commensurate with the risk to adequately address safety risks and site restoration in the event of default by miner.
MM-RH04	Quality assurance and adaptive management The Rehabilitation Plan must include: - a detailed Soil Management Plan including details of appropriate erosion and sediment control measures to be implemented consistent with SLR01 and SLR04. - completion criteria consistent with the restoration of disturbed land to equivalent or better agricultural land capability to enable a variety of productive agricultural uses. - a quality assurance plan to ensure the requirements of the Plan are being implemented, which must include a requirement for periodic auditing and addresses: - soils consultant support - training inductions and toolbox talks - inventory reconciliation stockpile management

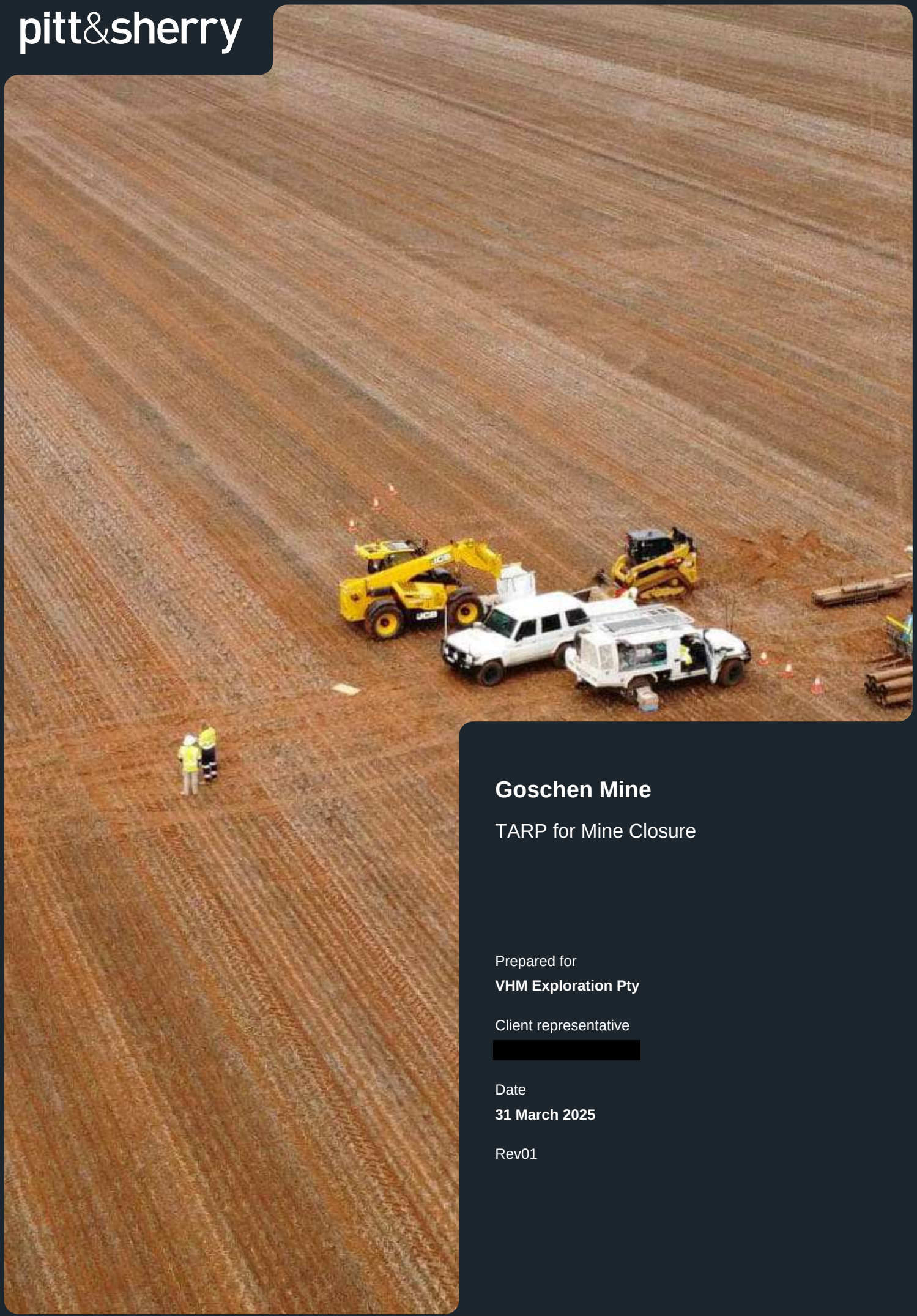
Mitigation Measure/ Monitoring Requirement	Requirement
	- testing - records and reporting, and - an adaptive management strategy, which is to include a Trigger Action Response Plan, that sets out required management actions in the event of impacts to rehabilitation or where rehabilitation outcomes are not achieved within the timeframes set out in the Rehabilitation Plan. - the Trigger Action Response Plan (TARP) is to address all foreseeable soil constraints which may be encountered as part of rehabilitation. The TARP is to be a live document updated from monitoring data in accordance with adaptive management.
MM-RH05	Soil Reinstatement Trial plots Establish soil reinstatement trial sites, as soon as practicable following issue of a Mining Licence and other necessary approvals. The number and location of soil reinstatement trial sites will be determined based on the outcomes of further soil analysis. The purpose is for soil reinstatement site locations to cover the range of constraints likely to be encountered across the mining area. Soil reinstatement trails are to adopt, soil investigation, stripping, stockpiling, reinstatement and post-reinstatement measures consistent with the Soil Management Plan and Rehabilitation Plan and to inform activities in respect of mined areas. Individual soil reinstatement trial sites are to be monitored for 5 to 7 years, and include at least one season of below average rainfall without stored water (where such conditions are not experienced in 5 to 7 years, the trial should be extended until such a season).
Rehabilitation monitoring	VHM will implement a formalised rehabilitation monitoring and review process to monitor rehabilitation performance, identify emerging risks and enable early intervention. Rehabilitation monitoring will include surveys to be undertaken routinely within each discrete rehabilitation area. The recommended frequency of survey will vary depending on the stage of rehabilitation and progress towards completion, but also depending on the presence or otherwise of active rehabilitation threats. A typical monitoring frequency might include: - Monthly for the first three months during initial vegetation establishment, then. - Quarterly for the first year following commencement of rehabilitation, then. - Annually until completion and achievement of closure criteria. Rehabilitation monitoring will continue until the rehabilitation objectives have been met and are substantially trending towards the completion criteria such that active intervention is no longer required, and the area is assessed as stable. Rehabilitation surveys will record key details of rehabilitation progress, including identification of any emerging risks (including but not limited to weeds, diseases and pests), activation of triggers for mitigation controls, and noting any corrective actions that may be required. Any identified deficiencies or failures shall be noted and follow-up actions identified. Success factors will be noted for future reference and to assist in continuing improvement.

Mitigation Measure/ Monitoring Requirement	Requirement
MM-AG01	Minimise potential adverse land rehabilitation effects Reinstate the soil profile based on the number and depth of stripping layers established under SLR01, and test replaced topsoils and subsoils to establish that the soil characteristics are comparable to pre-mining conditions and, if not, apply appropriate ameliorants or fertilizers. Topsoil and subsoil will be ameliorated as required during stripping and stockpiling activities to ensure pre-disturbance agricultural productivity is attained or improved. Wherever possible topsoil and subsoil will be respread directly onto active rehabilitation areas rather than stockpiling to minimise handling and possible structure decline. Reinstated topsoils will be assessed for water repellence and treated if present, prior to sowing. Reinstate soils at a time enabling immediate sowing where practicable and, where not practicable, apply measures for moisture retention and erosion protection such as hydraulic soil binders or hydro-mulches. In the first year after reinstatement of the soil profile, areas will be sown to a legume cereal mix, such as vetch and oats, or other crops as appropriate if seasonal conditions are unsuitable to a legume cereal mix. Undertake grain yield mapping where practicable from adjacent non-mined paddocks and paddocks to be mined in the future to establish whether comparable yields are being obtained from rehabilitated mine areas. Set yield targets for rehabilitated land having regard to any yield mapping and in consultation with stakeholders including landholders and local agronomists.
Agricultural Monitoring	Undertake grain yield mapping from adjacent non-mined paddocks and paddocks to be mined in the future to establish whether comparable yields are being obtained from rehabilitated mine areas (reference sites). Productivity variation of rehabilitated areas to be monitored by NDVI imagery during the growing season and causes investigated where significant variations are observed compared with reference sites. Plant tissue tests to be taken to monitor the nutritional status of the crop, to identify any underlying nutritional issues. Initial crops grown should be harvested with yield monitor to map actual and relative yield variation across crops. Monthly monitoring to take place at all locations with crops sown to ensure issues such as weeds, nutrient issues (deficiencies and toxicities) diseases and pests are not compromising crop production. Crop monitoring will be undertaken for at least five years and include biannual in-crop biomass assessments and tissue tests, and grain yield and quality for reinstated areas and reference sites. If comparable production is not achieved within five years, further remediation should be undertaken.

Appendix C Trigger Action Response Plans

Appendix C1- Settlement

pitt&sherry



Goschen Mine

TARP for Mine Closure

Prepared for

VHM Exploration Pty

Client representative

[redacted]

Date

31 March 2025

Rev01

Table of Contents

List of figures

List of tables

Appendices

Appendix A — TARP
Appendix B — Remediation Drawings
Appendix C — Instrumentation Schedule

Prepared by — [redacted]	[redacted]	**Date —**28 March 2025
Reviewed by — [redacted]	[redacted]	**Date —**28 March 2025
Authorised by — [redacted]	[redacted]	**Date —**28 March 2025

Revision History

Rev No.	Description	Prepared by	Reviewed by	Authorised by	Date
Rev A	Draft - For Review	[redacted]			11/02/2025
Rev B	Post 13/02 Review Meeting				14/02/2025
00	Issue to Client				17/02/2025
01	VHM/AECOM comments included				27/03/2025

1. Introduction

VHM has established a Mineral Resource and ore reserve estimate on Retention license TL6806 (Goschen Project). Mining and processing are proposed to take place on land 100% owned by VHM over a current mine life of 20years. Mining is proposed to take place using dry-strip mining with conventional “truck and shovel” bulk earth moving equipment.

This report covers the Trigger Action Response Plan (TARP) for mine closure Works. The TARP has been prepared by pitt&sherry at the request of VHM. The intent of the TARP is to provide a pragmatic mechanism to monitor and verify that the back filling works will meet the target post mine closure requirements. It is intended that the TARP is progressively updated as actual monitoring data during the mining works and backfilling becomes available. The rehabilitation closure requirements are outlined in Table 1 below:

Table 1 - Rehabilitation Objectives

Mining domain	Rehabilitation Objective	Completion criteria
	Mine cells are backfilled and rehabilitated progressively on completion of resource extraction to reinstate a final landform that is contiguous with the surrounding natural landscape and is fit for future agricultural land use	• Final levels are within +/- 0.5 m of existing (pre-disturbance) levels when averaged across the mining blocks. • Landform gradients will be typically less than 3% across agricultural areas and avoid sharp relief between rehabilitated landscapes and surrounding lands. Verified through survey. • Landforms are shaped to blend with the natural environment and maximise sheet flow drainage.

2. Goschen Project Background

The Goschen Project site is a heavy mineral sand mining and processing operation that will produce several heavy mineral concentrates (HMC) and a range of critical rare earth minerals in Victoria, near the NSW border (Figure 1). Water for processing will be extracted from a proposed pump station east of the mine site and piped to the site. Mining is proposed to be undertaken across two defined mining areas known as Area 1 and Area 3.

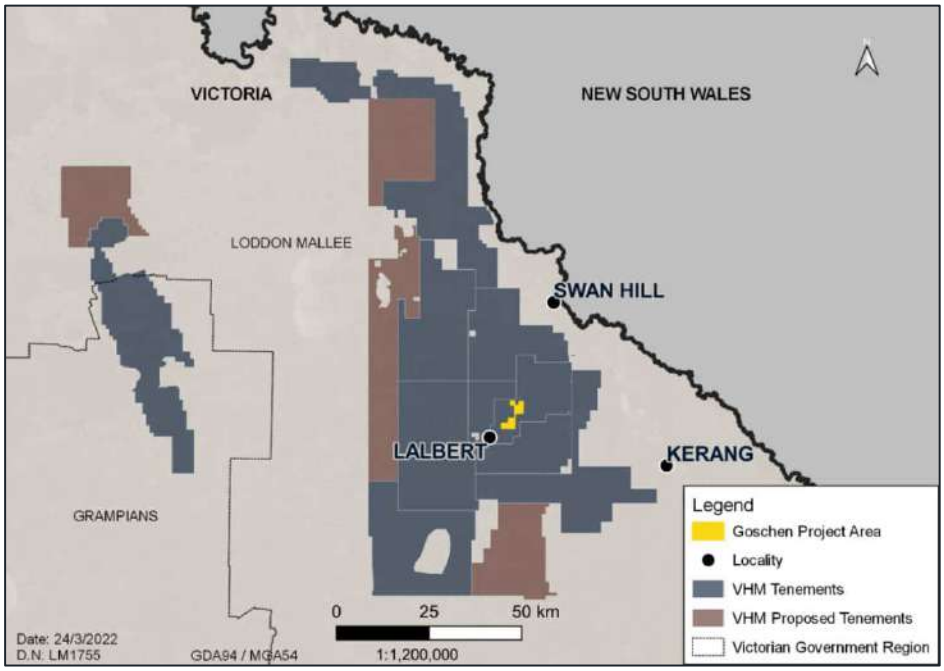


Figure 1 - Project Location Plan

Mining is proposed to be undertaken across two defined mining areas known as Area 1 and Area 3 (Refer Figure 2 below). Detailed plan for each Areas is included in Figure 3 and Figure 4 respectively.

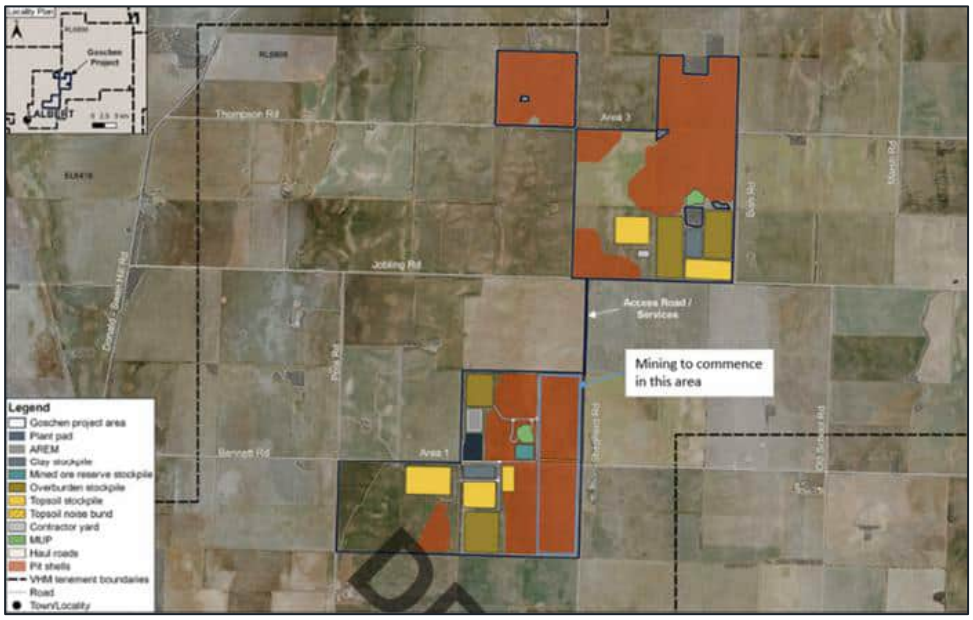


Figure 2 - Project Area 1 and Area 3 Location

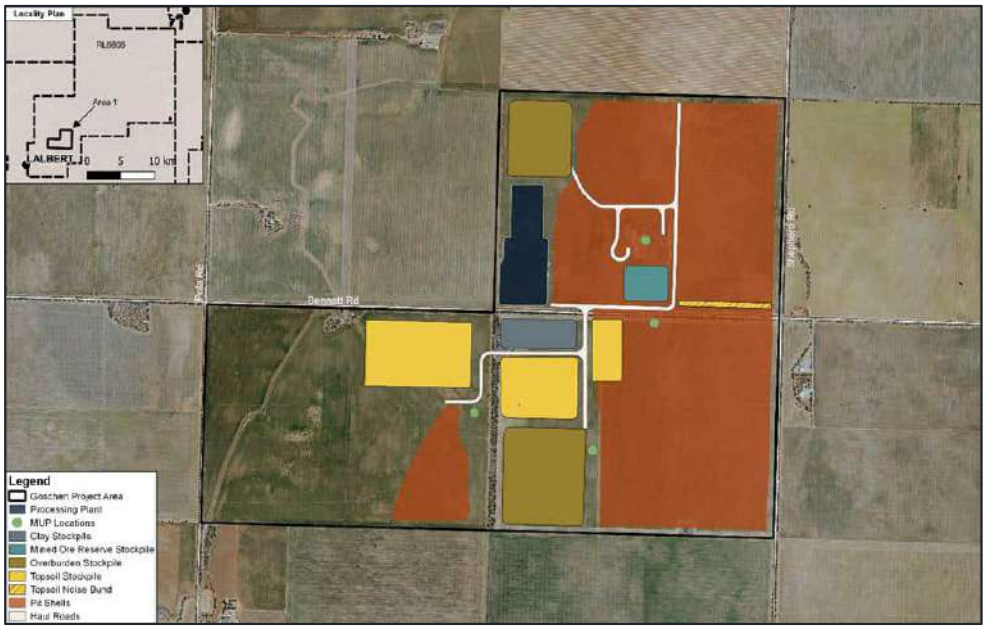


Figure 3 - Detailed Plan Area 1

Figure 4 - Detailed Plan Area 3

The proposed project will include:

Mining – Mining will take approximately 20 years at 5M tonnes of ore produced per year and will occur only above groundwater (no dewatering) across approximately 1,479 hectares of farmland using conventional open cut mining methods of excavation, load, and haul.

Heavy mineral sands and rare earths ore will be separated via an on-site WCP and MSP to generate a Rare Earth Mineral Concentrate (REMC). Refining of the REMC on-site is limited to hydrometallurgical extraction to produce a mixed rare earth carbonate. Tailings from the various mineral processes will be homogenised and placed back into the ore zone earlier mined.

The mined areas will be progressively backfilled in a staged manner, as shown in Figure 5 below.

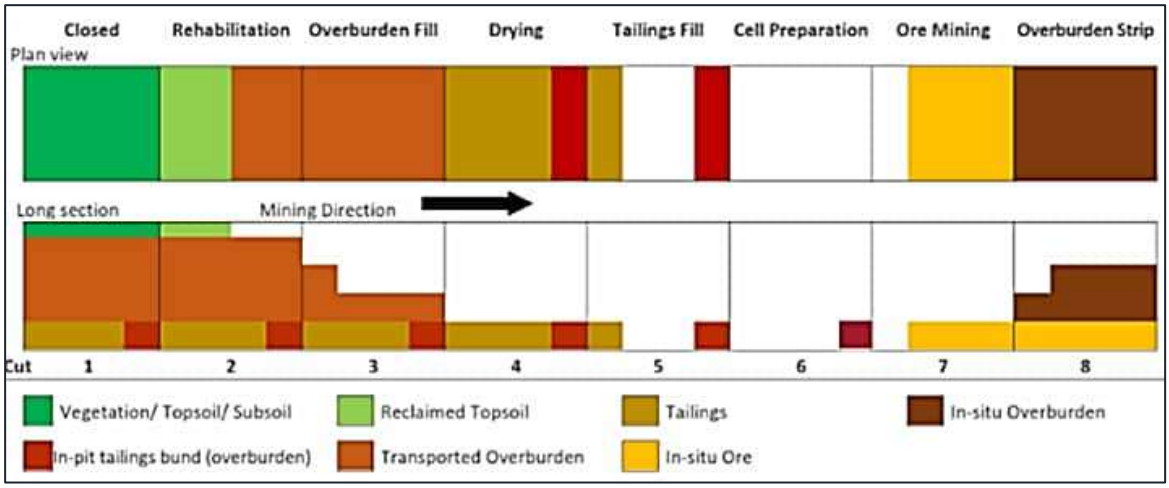


Figure 5 - Mining, tailing deposition and rehab sequence

Tailings dewatered in-pit (Refer to Figure 6 below for indicative tails backfilling methodology). The tails will be dried for a period of about 6 weeks. Once a crust has formed overburden will be placed over the dried tailings at a rate of about 0.5m vertical lift per week. The overburden will be placed by end tipping and dozers and track rolled.

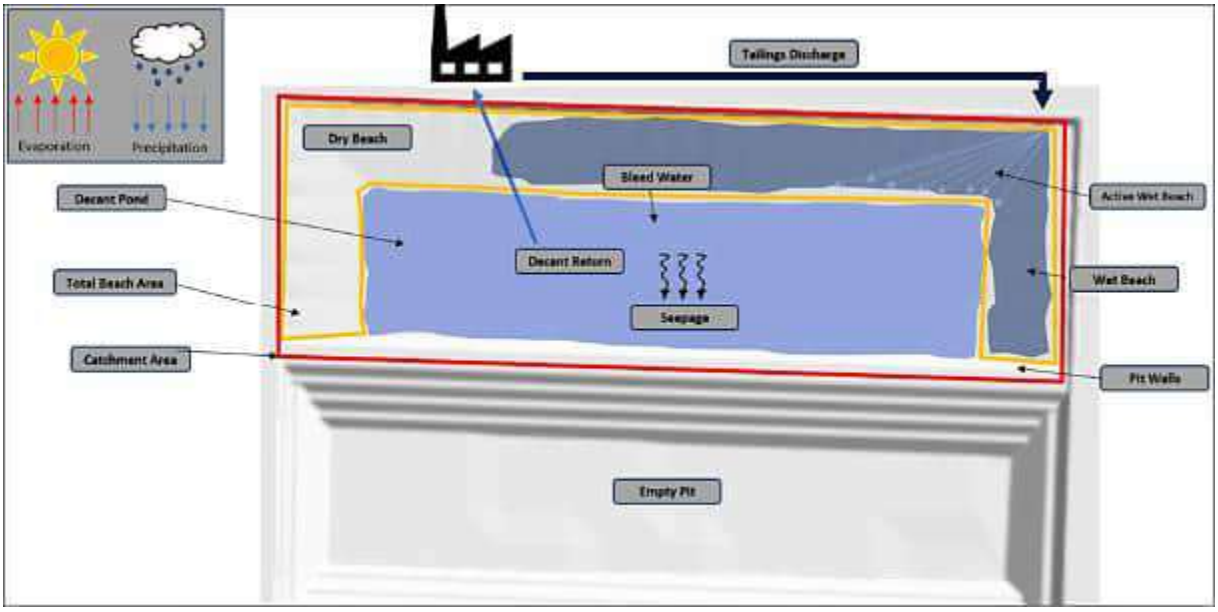


Figure 6 - Tailings dewatering plan

Once the overburden has reached the required level and projected post mine closure settlements are confirmed as within target limits, sub soil and topsoil will be placed over backfilled pit, to the agreed remediation surface level and profile. Analysis indicates that it should be possible to return the remediated land to broad acre agricultural farming use within 2 to 3 years from completion of filling. A more detailed remediation stage description is provided in Section 8.

Each mined cell will be filled progressively with 20m of tailings. A compacted earth filled bund will be constructed at the interface between the cells. A typical cross section through the mined cells is shown in Figure 7.

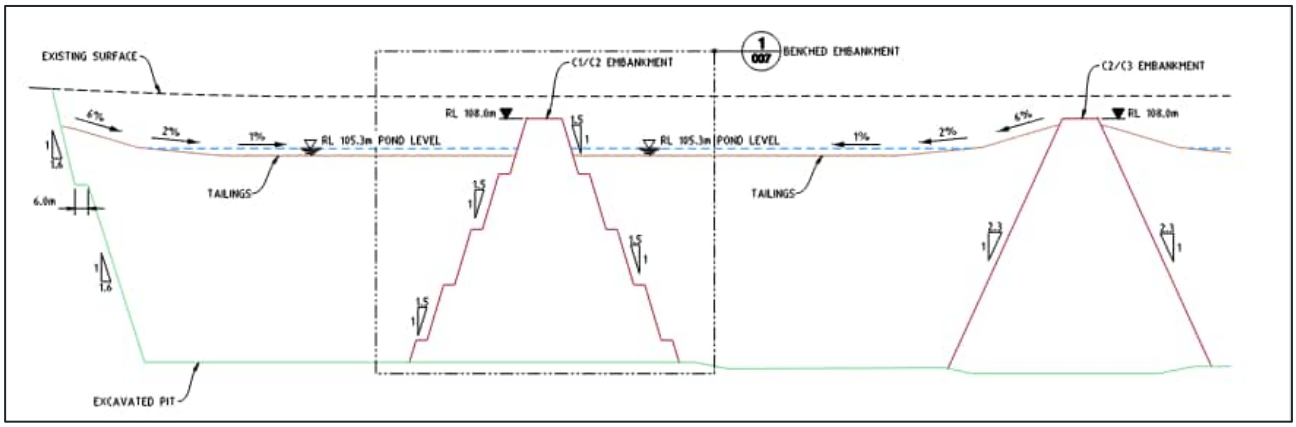


Figure 7 - Typical Cross Section Mine Celled with Tailings backfill and embankment

Figure 8 provides typical details for two types of earth bunds. The analysis indicates that settlement will be similar regardless of which bund type is used.

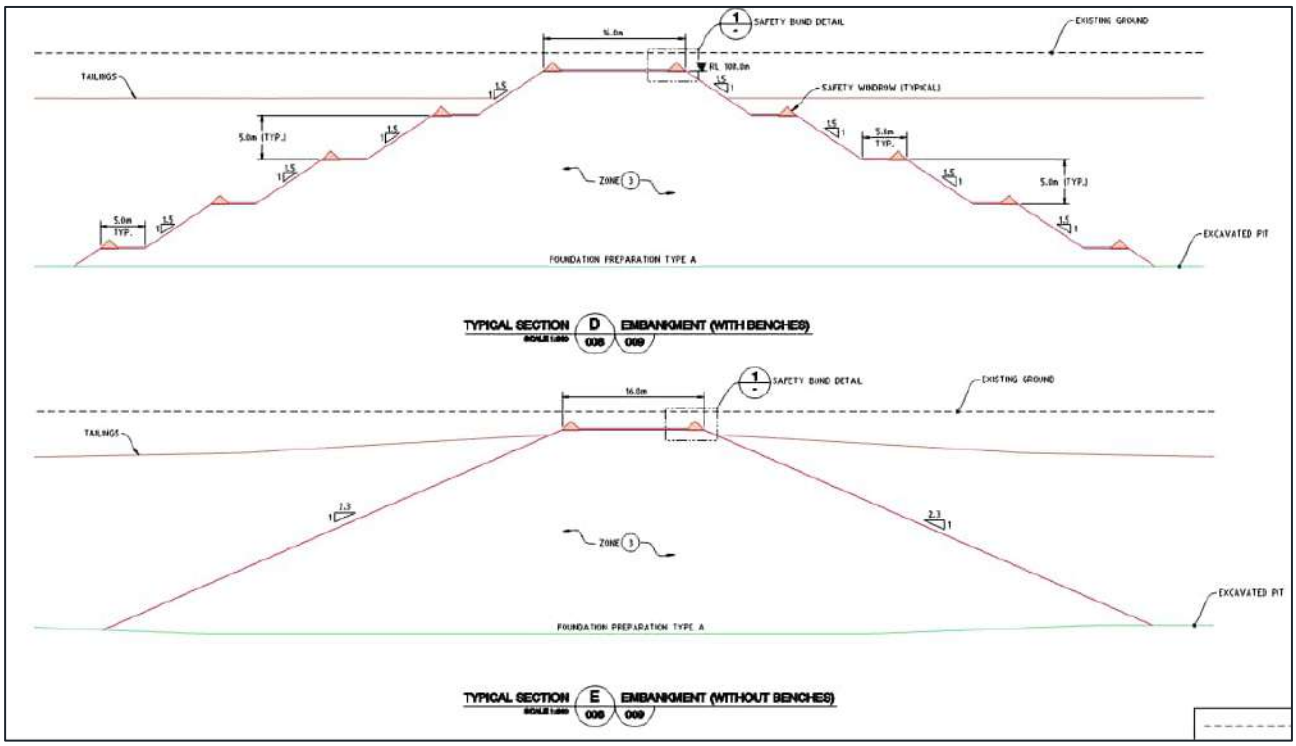


Figure 8 - Typical compacted earth bund details

3. Basis of the Trigger Actions Response Plan

The intent of the TARP is to provide a basis for the mining team to monitor and verify that the settlements of the tailings backfill, and overburden placement are trending in accordance with the design model predictions.

The TARP is based on an analytical model that has been developed using data gained on the material properties of the ore body, the overburden and the tailings that result from the process plant after extraction of the target minerals. The analytical model considers how the materials will perform from the base of the pit shell, as the tails are deposited and as the overburden is placed to bring the mine area back to the approved rehabilitated landform.

The analytical model provides predictions for short term settlement and long term creep in the ground as well as considering the impact of bulking on the tails and the overburden materials.

The following sections outline the inputs to the model, the modeling approach and the predicted results.

The TARP will use the prediction model to allow the mine to monitor actual settlement against the predicted settlement undertaking interventions as required to ensure the mine site can be successfully remediated.

3.1 References

The following documents have been used as references in preparing this TARP. For those documents not produced by pitt&sherry, the documents have been taken at face value without independent checking by pitt&sherry

1. Pitt&sherry 2022, Geotechnical Investigations Factual and Interpretative Report (Document No. T-P.22.0281.00-GEO-REP-001 Rev 00.

2. Pitt&sherry 2021 Goschen Project DFS - Tails Handling and Storage DFS Chapter (Document No. T-P.20.1938-00-TAILS -REP-002-00

3. ATC Williams, 2023 Review of Tailings Management Plan (Report No. 118188.03R01 (Rev 0)

4. ATC Williams, 2023 Tailings Storage Facility Design, Goschen Rare Earths and Mineral Sands Project (Document No. 118188.03R03 (Rev C)

5. Mersi 1987. Cα/Cc Concept and Ko during Secondary Compression, ASCE J. Geotechnical Engineering, 113:3:230-247.

3.2 Ground Models & Soil Settlement Parameters

The ground model adopted for this TARP is based on the geotechnical model included in the DFS (Reference 1) for Area 3. For Area 1 a similar ground model was developed, however the back filled overburden depth was reduced to reflect the shallower proposed mining depth.

Soil settlement (short terms elastic, consolidation (primary settlement) and creep (long term secondary settlement), are based on the Reference documents. The primary consolidation parameters for the tailings, fill rates, and drying times are based on Reference No. 4 above.

The following geotechnical ground model design parameters presented in Table 2 have been adopted in the analysis.

Table 2 - Ground Models Settlement Parameters

Material	Description	Thickness	Y kN/m³	v	E MPa	C_c	C_s	C_α	Cv	e_0
Overburden Backfill	Mixed clay and sand track rolled overburden backfill	Area 1- 5m thick Area 3 – 20m thick	17	0.4	10	-	-	-.005	-	0.65
Clay Embankment	Compacted/Engineered Clay Fill	22m high	19	0.4	40	-	-	-	-	
Tailing	FPP Oversize – 6% FPP Slimes – 15% WCP Coarse – 79%	20m thick	1.2 t/m^ (12Kn/m^3) less than 80 kPa overburden.	0.3	3	1.75E-01	1.75E-02	0.001	1.9E-5	1.274
Pit Floor Bed	Dense silty sand	12m thick with rigid base	18	0.4	150	-	-	-		
Ore Material	Silty SAND	20	21	0.4	40	-	-	-		

Y=density; ϕ= friction angle; c'=cohesion; v=Poisson's Ratio; E=Young's Modulus; Cc=Compression Index; Cs=Swelling/reloading index; Cα=Secondary Compression Index Cv – co-efficient of consolidation (m^2/year), e0, initial poisons ratio.

The swelling index (Cs) is taken as 10% of the Cc based on Reference 5 as there is no published data available to pitt&sherry for this parameter.

There is no data available on creep parameters for the tailings (Reference 4) or overburden. Values have been taken based on engineering judgment for the expected material characteristics. It is recommended that further testing is undertaken to verify creep values as described in this report.

3.3 Settlement Analytical Models

Elastic and primary consolidation models have been created using a commercially available software package PLAXIS 2D. This package allows for staged construction to assess immediate and primary (settlement due to excess pore pressure dissipation). Secondary consolidation (creep) was added onto the predicted elastic and primary settlements outside the model.

The degree of consolidation achieved during filling has been calculated to support stability modelling as well as to assist in assessing post back filling settlements once the overburden fill has reached the finished surface level.

The software package PLAXIS 2D, adjusts the overburden pressure to take into account the additional fill load to accommodate the settlement during filling. This means that in PLAXIS 2D it is not necessary to "overfill" the cell to account for settlement, as this extra load is built into the FE model.

The overall timeline used as the basis for reporting results from the model for Area 1 and Area 3 is as indicated in Figure 9 below.

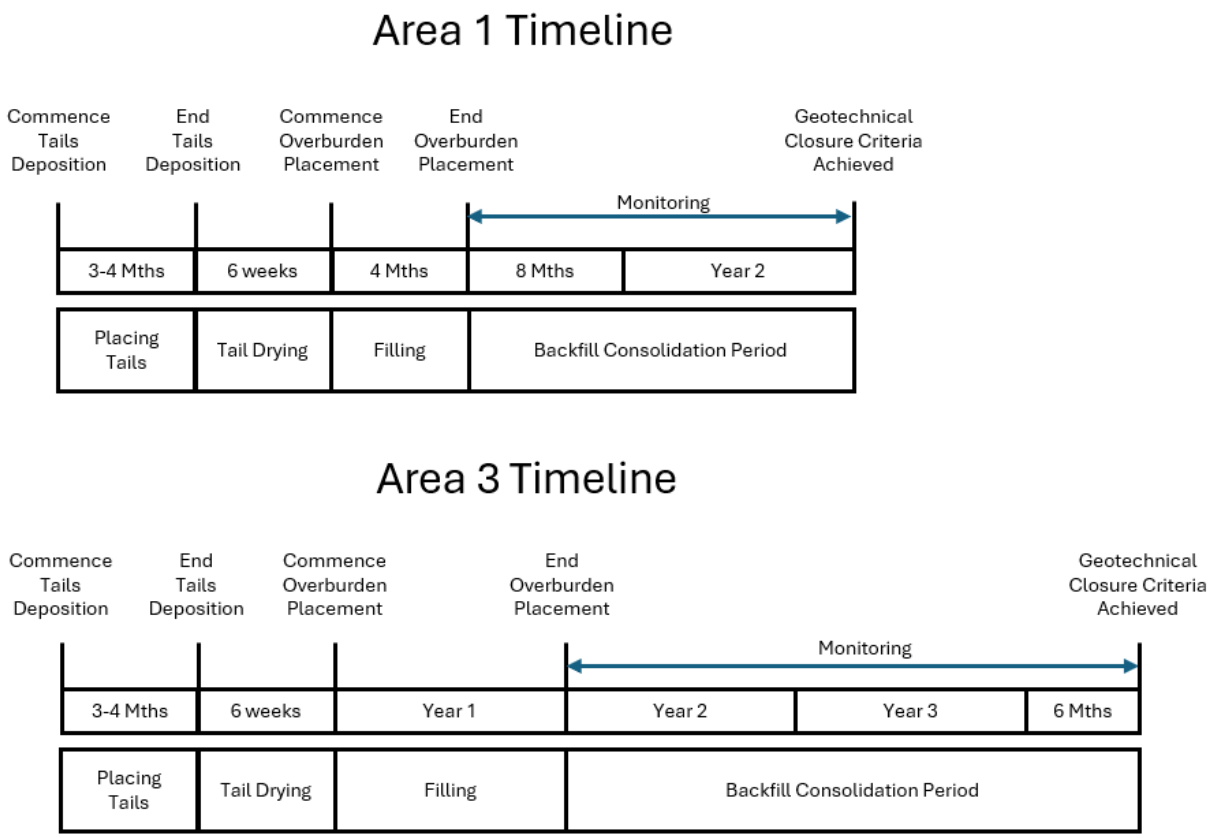


Figure 9 – Area 1 and Area 3 Tails filling and consolidation timeline

The following staged construction sequence presented in Table 3 below has been adopted in Plaxis 2D for the analysis:

Table 3 - Staged Construction in Plaxis 2D

Phase	Title	Calculation Type	Description
1	Initial Phase	Gravity Loading	Generate initial field stress on the volumetric self-weight of soil.
2	Excavation to Pit Floor	Plastic	Excavation of mine to pit floor in single stage. Displacements are reset to zero
3 to 10	20m Tailings	Consolidation	Placement of 20m of tailings within bunded area modelled in 3m lifts, and final 2m lift, at a filling rate of 3m per 18 days. Primary consolidation calculated in each of these stages
11	Add 5m Overburden on First Cell	Consolidation	5m of overburden added in single stage and the underlying tailings allowed to consolidate at a rate of 1m per 2 weeks. This is modelled to represent the consolidation during filling. Primary consolidation is calculated on this phase.
12	Add remaining Overburden in Cell (Area 3 only)	Consolidation	15m of overburden added in single stage and the underlying tailings allowed to consolidate at a rate of 1m per 2 weeks. Primary and secondary consolidation are calculated.
13	Consolidation after Overburden	Consolidation	Following the completion of overburden placement, a period of 1 year, 3 years and 5 years are allowed to monitor additional settlement.

3.4 Predicted Settlement and Pore Pressure Rates against time.

The results of the settlement models in combination with filling staging have been used to develop predicted settlement rates and predicted excess pore pressure rates as the back filling progresses and final finished levels are reached.

3.4.1 Area 1 Settlement

The settlement versus time results for Area 1 are shown in Figure 11 below. Day 1 in the graph is the end of the 6-week drying period post initial deposition. The total settlement is expected to be about 3.4m for Area 1 over the footprint of the cell, with slightly reduced settlement (around 3.2m) at the interface between the pit wall and mine floor (represented as Line C as shown in Figure 10. The modelling shows that there should be no more than 50mm remaining settlement following the 20 months period post completion of backfilling (backfill consolidation period). Refer to the Area 1 timeline in Figure 9 for full timeline.

After the 4 months of filling with overburden followed by 20 months of consolidation settlement ongoing settlement will be limited to creep in the overburden. This is because the tails are expected to behave as sand and consolidate shortly after final back filling (Refer Refence 4). In addition, creep in the sand tails is expected to be very small.

The earth fill bund constructed on the pit floor will be compacted in layers to achieve at least 95% of the maximum dry density. For this level of compaction, the creep is assessed to be small due to a low initial voids ratio.

For Area 1 the track rolled overburden is assessed as being 8-9m thick taking into account settlement of the tailing, so long term settlements should not exceed in the order of 50mm at any location.

Should the mine not undertake good moisture control and consistent backfilling construction methodology leading to an uneven level of compaction in the overburden then there may be in the order of 200-300mm differential settlement between location B and the location of the poorly compacted overburden in any part of the tailings cell.

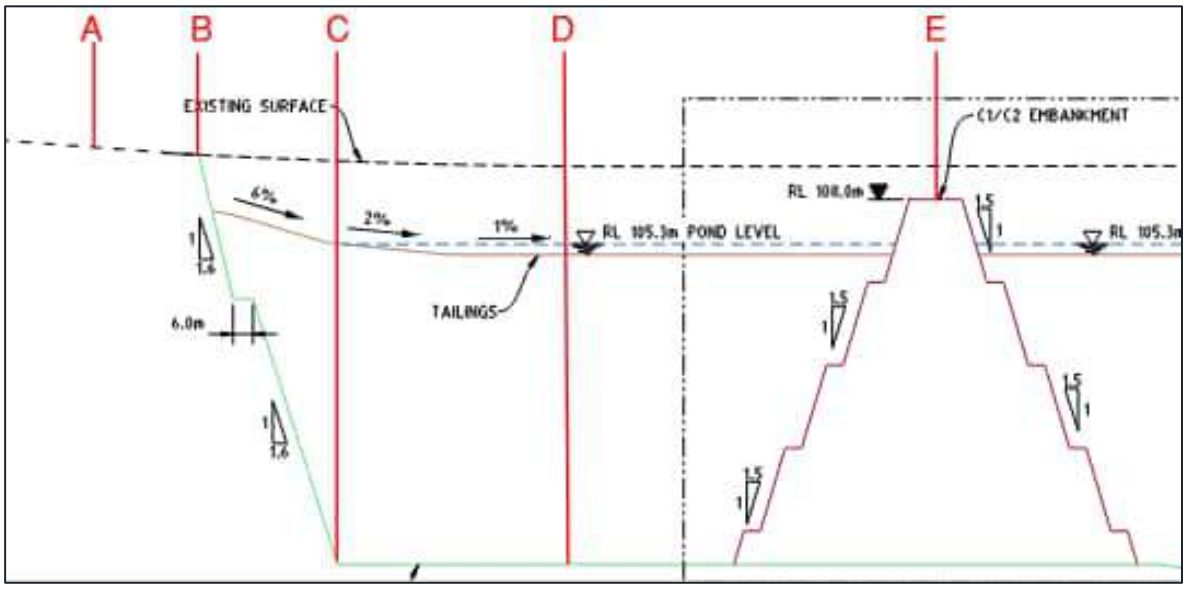


Figure 10 - Positions for calculating differential settlements.

Table 4 summaries the calculated post filling settlement, (Tails, Overburden, Subsoil and Topsoil), for Area 1 over the tails cell. Given the Closure Criteria allows for up to 500mm change in levels from existing ground levels, the long terms settlements can readily be accommodated into the rehabilitation plan.

Table 4 - Predicted Post Closure Settlement Area 1

Position (Refer Figure 10 above)	A	B	C	D	E
Long term settlement after Geotechnical Closure Criteria Achieved. Ref Figure 9	<5mm	<5mm	25-40mm	30-40mm	40-50mm

A Closure Criteria includes a maximum surface gradient of 3%. The worst case long term differential settlement, leading to a potential non-conforming surface gradient is between Point B and Point C. The long terms settlements once the geotechnical acceptance Closure Criteria is achieved should only generate a surface gradient of less than 0.3%, as a worst case.

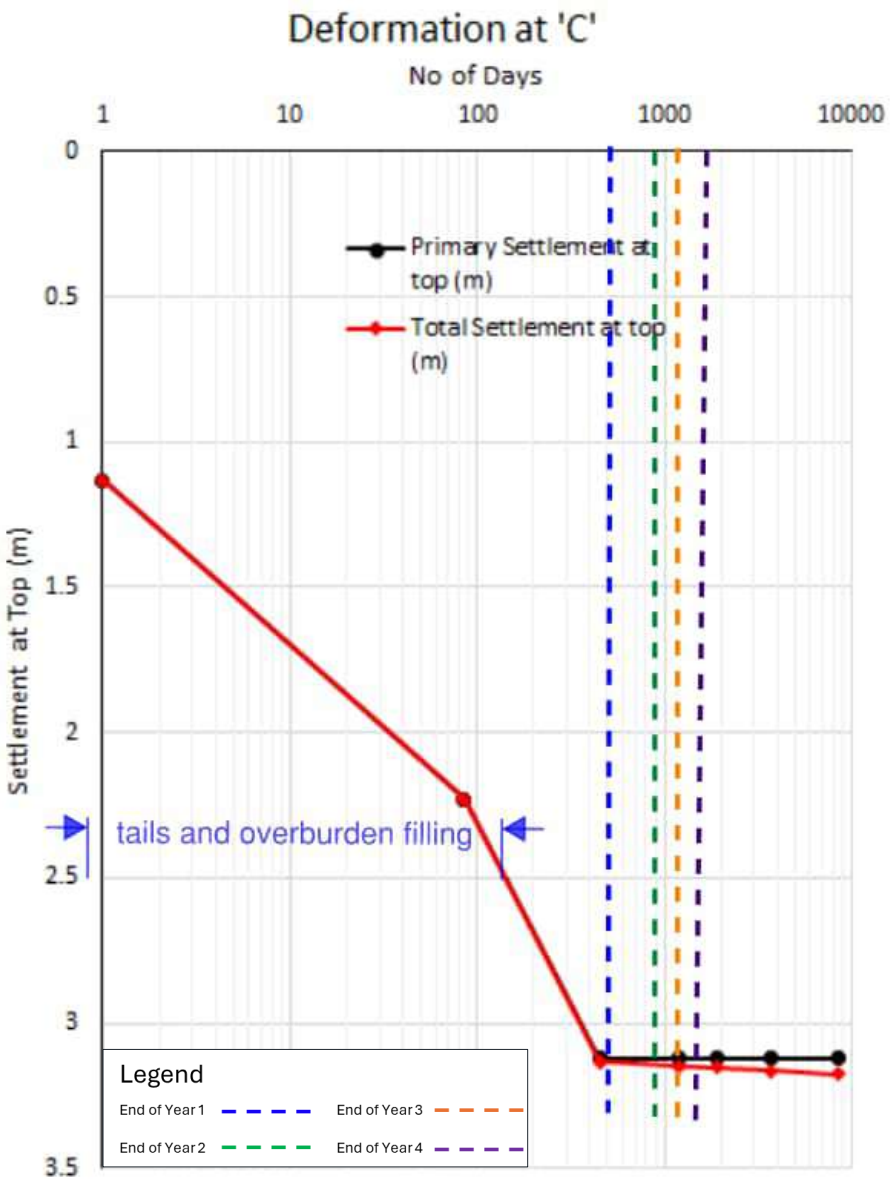


Figure 11 - Area 1 - Settlement versus Time Pit Wall toe/Cell Floor Junction

3.4.2 Area 3 Settlement

The settlement versus time results for Area 3 are shown in Figure 12 below. Day 1 in the graph is the end of the 6-week drying period post initial deposition. The total settlement is expected to be about 4.2m for Area 3 over the footprint of the cell, with slightly reduced settlement (around 3.8m) at the interface between the pit wall and mine floor (represented as Line C as shown in Figure 12. The modelling shows that there should be no more than 80mm remaining settlement following the 34 month period post completion of backfilling (backfill consolidation period). Refer to the Area 3 timeline in Figure 9 for full timeline.

After the 12 months of filling with overburden (greater depth than Area 1) followed by 40 months of consolidation settlement, the ongoing settlement will be limited to creep in the overburden. This is because the tails are expected to behave as sand and consolidate shortly after final back filling (Refer Refence 4). In addition, creep in the sand tails is expected to be very small.

The earth fill bund constructed on the pit floor will be compacted in layers to achieve at least 95% of the maximum dry density. For this level of compaction, the creep should be small due to a low initial voids ratio.

For Area 3 the track rolled overburden is assessed as being about 24m thick, taking into account settlement of the tailing, so long term settlements should not exceed around in the order of 60-80mm at any location.

Should the mine not undertake good moisture control and consistent backfilling construction methodology leading to an uneven level of compaction in the overburden then there may be in the order of 200-300mm of differential settlement between B and the location of the poorly compacted overburden in any part of the pit floor.

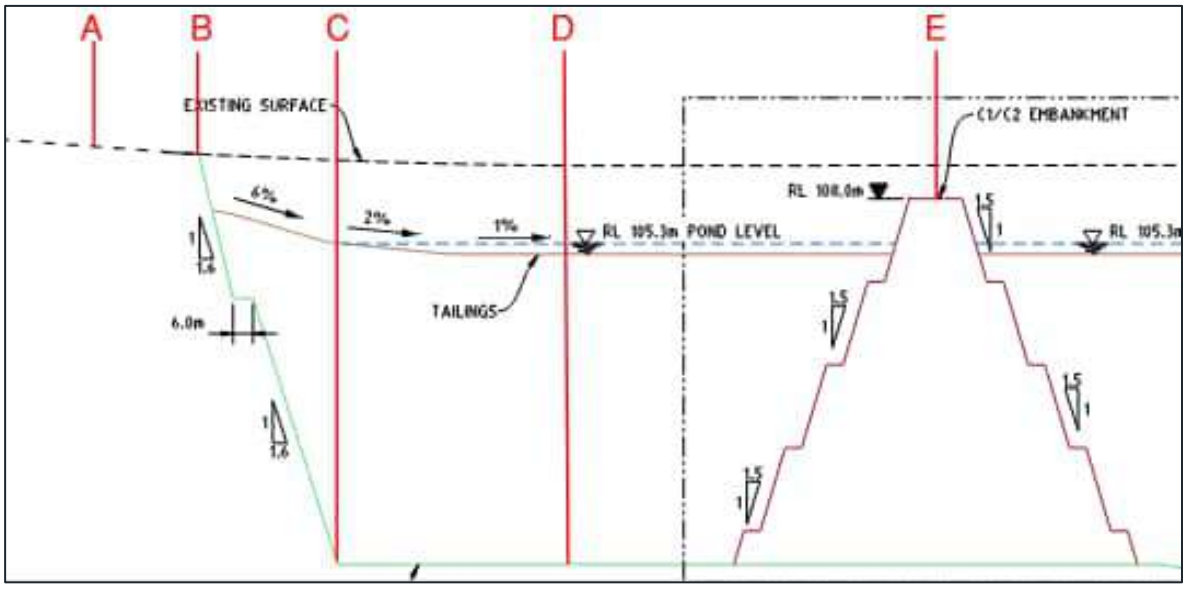


Figure 12 - Positions for calculating differential settlements

Table 5 summaries the expected post filling settlement, (tails, overburden, sub soil and topsoil), for Areas 3 over the pit.

Given the Closure Criteria allows for up to 500mm change in levels from existing levels. The long terms settlements in Area 3 can readily be accommodated into the rehabilitation plan.

Table 5 - Predicted Post Closure Settlement Area 3.

Position (Refer Figure 10 above)	A	B	C	D	E
Long term settlement after Geotechnical Closure Criteria Achieved. Ref Figure 9	<5mm	<5mm	50-70mm	60-80mm	60-80mm

The Closure Criteria includes a maximum surface gradient of 3%. The worst case long term differential settlement,

leading to a potential non-conforming surface gradient is between Point B and Point C. The long terms settlements once the geotechnical Closure criteria are achieved should only generate a surface gradient of less than 0.3%, as a worst case.

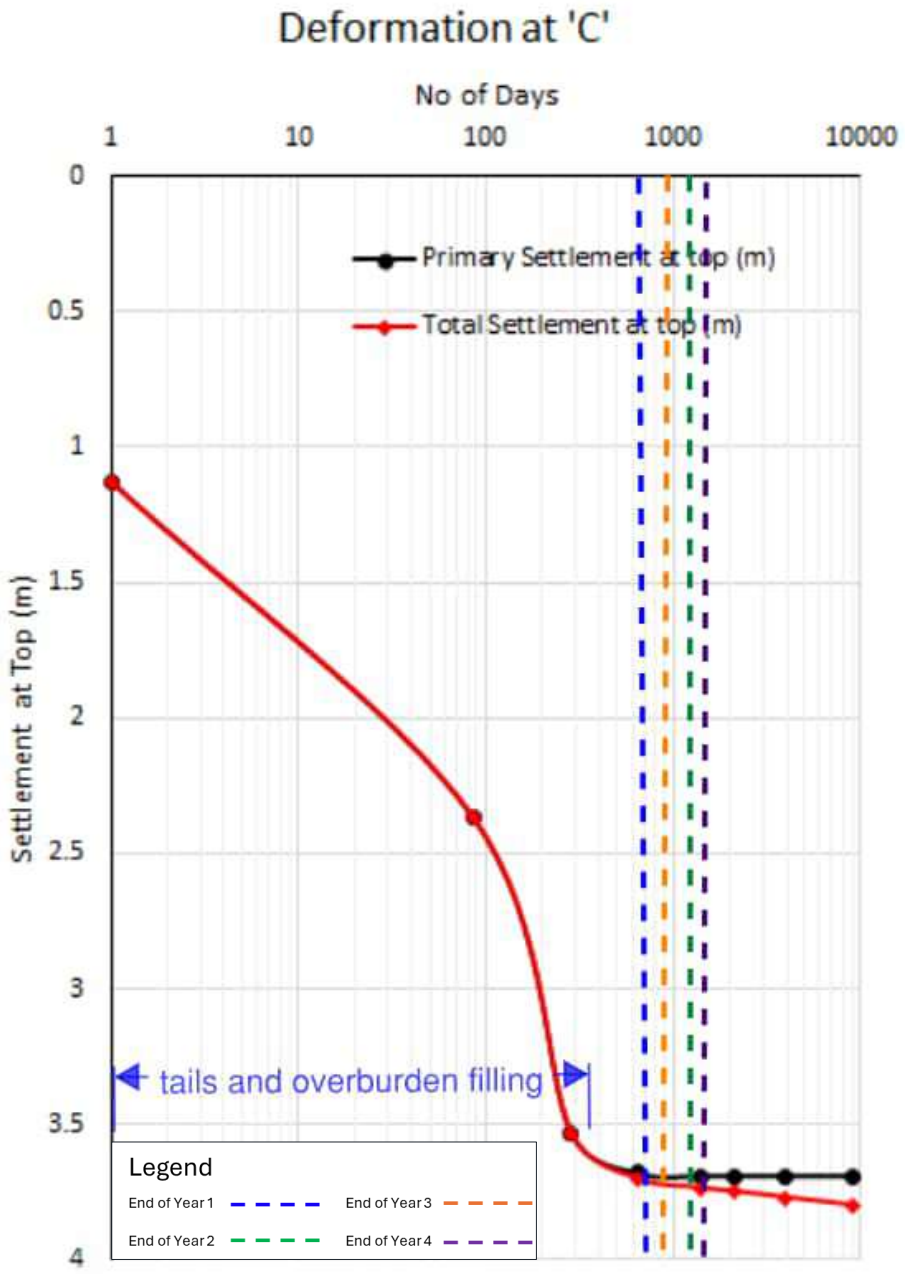


Figure 13 - Area 3 Settlement versus time center of pit

4. TARP Specification

A TARP has been prepared for the cell backfilling works based on the settlement analysis described above. A copy of

the TARP is included in Appendix A. This includes 3 Levels of Action:

- Level 1/**Green** - Monitoring data shows settlements and compaction levels are aligned with design predictions and agreed mine closure/rehabilitation criteria should be achieved
- Level 2/**Amber** - Monitoring data shows settlement and/or compaction levels are trending outside tolerable levels and there is a risk the agreed mine closure /rehab criteria may not being achieved. Planning for intervention occurs at this stage; and
- Level 3/**Red** - Monitoring data shows settlement and/or compaction levels are not in alignment with design and remedial actions/inventions must be implemented.

The TARP includes possible remedial actions as well as nominating responsible parties for the actions.

The Trigger Levels in the TARP have been based on the modeling described in Section 3.4 above and necessary assumptions where data is not available to support numerical models. The recommended base line (Level 1) settlement and excess pore pressures for different construction times are shown on Table 6 and Table 7 for Area 1 and Area 3 respectively.

Key inputs into these base line results are:

- Tailing properties as per Reference 4 in Section 3.1
- A 6 week “drying period” from the time the tailing deposition is completed in a cell to the commencement of placement of first layer of overburden (initial consolidation and crust generation period); and
- Filling rates are at approximately 2m per month.

Table 6 - Base Line (Level1) Values for determining Trigger levels for Area 1

Quarters from end of 6 week drying period	Depth of Overburden Added (m)	Predicted Total Settlement per Quarter at top of tailings (mm)	Predicted Total Settlement per Quarter at FSL (mm)	Predicted excess pore pressure range in tailings centre (kPa)
1	2	1137	n.a	43 to 85
0	4	0	n.a	0
0	6	0	n.a	0
Start of Backfilling Consolidation Period				
2	8	664	667	29 to65
3	8	163	167	9 to 16
4	8	95	98	7 to 9
5	8	60	63	3 to 7
6	8	1	2	<5
7	8	1	2	<5
8	8	1	2	0
Geotechnical Closure Criteria Achieved				
9	8	1	2	0
10	8	1	1	0
11	8	1	1	0
12	8	1	1	0
13	8	1	1	0
14	8	1	1	0
15	8	1	1	0
16	8	1	1	0

Table 7 - Base Line (Level 1) Values for determining Trigger levels for Area 3

Quarters from end of 6 week drying period	Depth of Overburden added (m)	Predicted Total Settlement per quarter at top of tailings (mm)	Predicted Total Settlement per quarter (mm) at FSL	Predicted Excess pore pressure in tailings centre (kPa)
1	2	1257	n.a	47 to 100
	4			
	6			
2	8	1044	n.a	42 to 100
	10			
	12			
3	14	396	n.a	20 to 30
	16			
	18			
4	20	106	n.a	4 to 10
	22			
	24			
Start of Backfilling Consolidation Period				
5	24	36	42	2 to 3
6	24	36	41	<3
7	24	26	31	<3
8	24	5	9	<3
9	24	1.3	5	0
10	24	0	3	0
11	24	0	3	0
12	24	0	3	0
13	24	0	3	0
14	24	0	3	0
Geotechnical Closure Criteria Achieved				
15	24	0	2	0
16	24	0	2	0

5. Assessment of Bulking Factors

Bulking factors are largely determined by the methods of material handling, storage and deposition as well as the initial and final void ratio and bulk density of the material.

It is understood that the overburden material is composed mainly of silty sands / silty clays and is stockpiled by loose dumping for heights up to 30m in designated areas. The overburden will be placed back on top of the consolidated tailings, once the tailings dry out and gain enough strength to receive additional overburden. A cell is expected to be filled with tailings over a period of approximately 4 months and to be left to dry out for 4 to 6 weeks before placing any overburden. Further, the stockpiled material is not expected to be placed in a cell before at least one year of being mined.

The stockpiles consist of materials that generally have an in-situ variable moisture content between 6% to 19% for the layers below the topsoil based on the tests results reported by pitt&sherry (Reference 1). Depending on the permeability and fine contents of the stockpiled material, a loss of moisture content may occur due to water percolation and in-ground / over-ground flow in addition to drying out by evaporation, whilst external surface may be subject to further solar dry out or rainfall wetting depending on seasonal conditions. An estimated average moisture content in the stockpiled material at time of being transported for use as an overburden on top of the tailings is expected to be in the range of 10% to 12% with some variation due to material composition and season.

The in-situ material is in a relatively dense condition as can be concluded from the SPT values in the geotechnical investigations. Based on this a bulk density of 1.9t/m3 can be assumed for in-situ overburden material. However, due to the mining works and eventually the loose dumping of this material in stockpiles, it is expected to reach a bulk density of in the order of 1.65 t/m3. It is noted that some further compaction may take place over time under its self-weight. This material will be placed in layers on top of the tailings as an overburden with a compaction comparable to track rolling while placing.

It is understood that the initial layers will be placed with light equipment producing little track pressure due to the proximity to the low strength underlying tailings, but heavier equipment may be used for subsequent layers. It is difficult to predict the bulk density of the placed overburden under these conditions with a high level of accuracy, but an initial assumption on the bulk density of the placed overburden of 1.8 t/m3 can be used as an initial input.

With the above assumptions, a preliminary bulking factor of 1.05 is calculated (1.9/1.8), i.e., the initial insitu material will expand in volume when placed as an overburden by about 5%. This figure and the above assumptions related to bulk densities will need to be verified by testing of in situ material in the overburden placed in the tails cell. It will be important to ensure that the placing procedures for each are representative. This is addressed in the instrumentation schedule attached as Appendix B.

This material is expected to settle and consolidate after being placed as an overburden. This has been included in the Plaxis models predictions of total settlement.

It is understood that the tailings will be pumped into the pit cells at an initial dry density of 1.15 to 1.2 t/m3 (Reference 4). Further, due to bleeding, evaporation and consolidation it will reach a dry density of about 1.4t/m3 (Reference 4).

Given that the water content in the deposited tailings will vary continuously during and after the placement of overburden, alongside the potential variability in the returned solids from processed ore, it is challenging to accurately determine the extent of volume variation in the deposited tailings compared to the volume of ore sent to be processed.

6. Drawings and Topographical Models

A design model has been developed for the rehabilitation and hand back phase of the project. The model has included consideration of:

- The existing natural overland flow paths and how the rehabilitated surface will merge with them in a complementary manner
- How overland flow velocities can be minimised to avoid channalisation and scour
- The variable rehabilitation process necessary to address mining cells, stockpile locations and hardstands/roads.
- Long term creep of the subgrade
- The transitions between rehabilitated areas and undisturbed areas; and
- The end use of the rehabilitated mine site back to broad acre farmland.

A general arrangement plan is provided to convey the intent of the rehabilitated landform. Cross sections are provided at key points to show the existing landform and proposed rehabilitation landform together with how the rehabilitated landform merges with the existing. A contour plan is also included together with the digital terrain model from which the contour plan and the cross sections were generated.

Key design attributes used in development of the model included:

- Maintenance of general gradient not flatter than ~1V:300
- Check that a long-term settlement of 50mm post-handover would not create a localised ponding area.
- Use of natural gullies and ridge lines
- Avoidance of any sharp transitions; and
- Smoothing out of the surface over areas such as the location of the existing shallow farm quarry site which was mined out.

7. Instrumentation and Monitoring Schedule

A schedule of proposed instrumentation for the backfilling works associated with the rehabilitation Appendix C.

This includes instruments to monitor or settlement of the tailing (deep settlement plates and/or vibrating wire settlement cell), independent of creep for the overburden. This is needed to help determine any targeted remedial actions. It is expected that this suite of monitoring and testing would be applied to Cell 1, with some reduced monitoring in subsequent cells.

Piezometers are proposed to measure pore pressure in the tails, to confirm the excess pore pressure is being released in line with the design models.

Static cone penetrometer tests with pore water pressure measurement (CPTu) are also proposed through the completed tailing, once there is adequate overburden cover to support plant and equipment. Oedometer testing will also be used to help verify creep parameters in tailings. This testing would be used to check the tailings are a homogeneous material without the inclusions of low permeability lenses of slimes/silts which could slow down settlement rates. The early test will also help check the excess pore pressures against the design model.

8. Geotechnical Closure Criteria

The geotechnical closure criteria have been set to enable VHM to progressively verify the settlements during the consolidation period and final surface landform/slopes satisfy the objectives in Table 1.

It is proposed to undertake a drone survey over the cell footprint at various internals during the back fill consolidation period. The change in levels and localized depressions or flat areas between each survey can then be compared to the predicted trends. Below in Table 8 (Area 1) and Table 9 (Area 3) are the calculated remaining settlements following backfilling. It should be noted that 5mm per 3 month period has been set as a minimum measurable value taking into account accuracy of survey and seasonal variations.

Table 8 - Settlements between Post Filling surveys Area 1

Time Following completion of filling (Years)	Expected Cumulative Settlement since end of filling (mm)	Expected Settlement between each 3 month survey (mm)*
0	0	N/A
1.0	995	667, 167, 98, 63
1.75	1001	2, 2, 2

*Note for intermediate time values linear interpolation is allowed

Table 9 - Settlements between Post Filling surveys Area 3

Time Following completion of filling (Years)	Expected Cumulative Settlement since end of filling (mm)	Expected Settlement between each 3 month survey (mm)*
0	0	N/A
1.0	123	42, 41, 31, 9
2.0	137	5, 3, 3, 3
2.5	142	3, 3

*Note for intermediate time values linear interpolation is allowed

The proposed approach to reinstatement of the subsoil and topsoil on the overburden, taking into account the replacement soil management plan and any requirements from the agronomist regarding reseeding or cropping is:

- Reinstated the subsoil over the overburden to 150mm less than the final reinstatement level
- Undertake an initial drone survey of the surface
- Plant a crop on the subsoil to manage soil erosion and dust minimisation
- Once the settlement monitoring indicates that the settlements are at or lower than the geotechnical closure criteria a final drone survey would be undertaken. The drone survey would also identify any low points or areas where the surface overland fall is less than 1V:300H
- Any minor differential settlement would be addressed by reprofiling the subsoil. The extent would be defined in the drone survey; and
- The remaining 150mm of subsoil would be added as well as the 200mm of topsoil to bring the rehabilitated surface to the final levels.

Important information about your report

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Appendix A

TARP

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Table 1 ***Tailings Cell Remediation TARP***

Condition	Level 1	Level 2	Level 3
Trigger	**Tailings Cell** **During Overburden Filling and on completion of Overburden Filling** • Measured settlement rates in the tailings and the overburden are within 5% of the prediction model • Pore pressure dissipation rate in tailings and magnitude trends are +/- 5% of prediction model • Void Ratio after placement is <0.7 Refer to Table 2 and Table 3 for predicted settlement and pore pressure dissipation rates	**Tailings Cell** **During Overburden Filling** • Measured settlements rates differ by +/- 5% but less than +/- 10% compared to the prediction model (Refer to Table 2 and Table 3 • Void Ratio in overburden >0.7 but not > 0.75 of assumed value **On completion of Overburden Filling** • Measured settlements rates differ by +/- 5% or 3mm but less than +/- 10% or 5mm compared to prediction model (Refer to Table 2 and Table 3) • Excess Pore pressure in tailings exceed > 5kPa % but not more than 10kPa of prediction magnitude from model (Refer to Table 2 and Table 3) which may result in: ○ localised low areas ○ Insufficient overland flow gradients ○ Finished surface levels lower or higher than design at closure ○ Post closure settlements over 20 years may exceed 500 mm	**Tailings Cell** **During Overburden Filling** • Settlement rates and/or magnitude will exceed predicted values, either locally or over a large area >10% of the predicted model (Refer to Table 2 and Table 3) • Void Ratio after placement exceeds 0.75 **On completion of Overburden Filling** • Measured settlements rates differ by +/- 10% or 5mm per month compared to prediction model (Refer to Table 2 and Table 3) • Excess Pore pressure in tailings exceed the predicted value by more than 10kPa. (Refer to Table 2 and Table 3) which are likely to result in: ○ localised low areas ○ Insufficient overland flow gradients ○ Finished surface levels lower or higher than design at Closure ○ Post closure settlements over 20 years may exceed 200 mm

Condition	Level 1	Level 2	Level 3
Action/Response	Base level monitoring as specified in monitoring schedule Monitoring to be graphed as daily points against predicted values Monthly reporting Confirm settlement impacts on are as per anticipated performance	Increase frequency of reporting to Weekly Inform Designer Act on any recommendations	Convene Tailings Management Response Group Conduct risk assessment Designer to advise any additional site investigations. Options may include: • CPTu through tailings to assess actual settlements. • Verification of monitoring equipment performance • Other as directed by the Designer Designer to back analyze data and provide possible remedial measures and/or adjusted finished surface levels (Closure levels). Execute mitigation measures from risk assessment and designer recommendations. Options may include: • Increased compaction/density in overburden soils, • Preloading by overfilling with subsoil to accelerate settlements/accelerate pore water pressure dissipation prior to placing topsoil and closure • Topping up low areas to finished surface level, plus adjusted settlement allowance with subsoil before topsoil placement. Continue to monitor to confirm remedial works have met the design intent. Establish site remedial works action plan

Condition	Level 1	Level 2	Level 3
Frequency	**Maintain Monitoring** • **Instrumented Test Site** o Instrumented test locations to record data on an hourly basis and upload to data hub daily (minimum). o Establish alarms in the data hub to match trigger levels o Reporting frequency monthly • **Manual Monitoring Sites** o Test locations to be sampled weekly and trending record maintained on a rolling monthly basis. o Reporting frequency monthly	**Increased Frequency of data review** • **Instrumented Test Site** o Instrumented test locations to record data on an hourly basis and upload to data hub daily (minimum). o Alarms in the data hub to send daily texts/emails o Reporting frequency weekly • **Manual Monitoring Sites** o Test locations to be sampled weekly and trending record maintained on a rolling weekly report. o Reporting frequency weekly	**Increased Frequency of data review** • **Instrumented Test Site** o Instrumented test locations to record data on an hourly basis and upload to data hub daily (minimum). o Alarms in the data hub to send daily texts/emails o Reporting frequency weekly • **Manual Monitoring Sites** o Test locations to be sampled weekly and trending record maintained on a rolling weekly report. o Reporting frequency weekly o Site remedial work actions to be reviewed weekly o Designer to review/reassess data weekly
Responsible Party	• Site Engineer to compile data records and summary report • Mine Manager noted on production report.	• Site engineer to provide a weekly report to the Mine Manager • Mine Manager to review	• Site engineer to provide a weekly report to Designer • Mine Manager to meet with Tarp Response Group weekly and agree actions for the subsequent week

Table 2 Baseline Trigger Values Area 1

Quarters from end of 6 week drying period	Depth of Overburden Added (m)	Predicted Total Settlement per Quarter at top of tailings (mm)	Predicted Total Settlement per Quarter at FSL (mm)	Predicted excess pore pressure range in tailings centre (kPa)
1	2	1137	n.a	43 to 85
0	4	0	n.a	0
0	6	0	n.a	0
Start of Backfilling Consolidation Period				
2	8	664	667	29 to65
3	8	163	167	9 to 16
4	8	95	98	7 to 9
5	8	60	63	3 to 7
6	8	1	2	<5
7	8	1	2	<5
8	8	1	2	0
Geotechnical Closure Criteria Achieved				
9	8	1	2	0
10	8	1	1	0
11	8	1	1	0
12	8	1	1	0
13	8	1	1	0
14	8	1	1	0
15	8	1	1	0
16	8	1	1	0

Table 3 Baseline Trigger Values Area 3

Quarters from end of 6 week drying period	Depth of Overburden added (m)	Predicted Total Settlement per quarter at top of tailings (mm)	Predicted Total Settlement per quarter (mm) at FSL	Predicted Excess pore pressure in tailings centre (kPa)
1	2	1257	n.a	47 to 100
	4			
	6			
2	8	1044	n.a	42 to 100
	10			
	12			
3	14	396	n.a	20 to 30
	16			
	18			
4	20	106	n.a	4 to 10
	22			
	24			
Start of Backfilling Consolidation Period				
5	24	36	42	2 to 3
6	24	36	41	<3
7	24	26	31	<3
8	24	5	9	<3
9	24	1.3	5	0
10	24	0	3	0
11	24	0	3	0
12	24	0	3	0
13	24	0	3	0
14	24	0	3	0
Geotechnical Closure Criteria Achieved				
15	24	0	2	0
16	24	0	2	0

Appendix B

Remediation Drawings TBA

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Appendix C

Instrumentation Schedule

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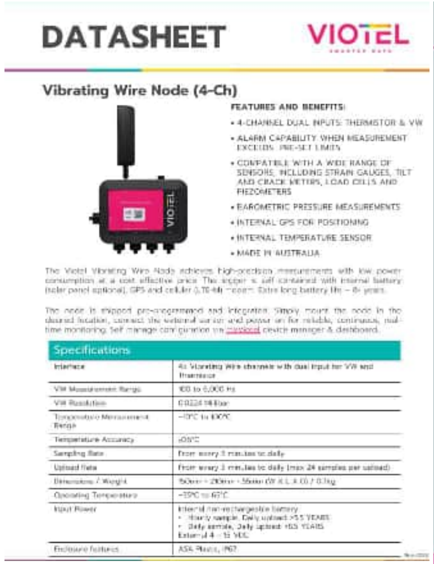
Instrumentation Schedule

Instrumentation Schedule					
Instrument Type	**Purpose and location**	**Time for Commissioning or Instrumentation**	**Frequency of data Review**		
			Level 1	**Level 2**	**Level 3**
Deep Settlement Plates (Vibrating wire settlement plate)	Placed at top of tailing and extended to FSL to measure settlement rate of tailings to compare with predictions	After tailing filling and tailings drying period completed	monthly	weekly	TBA
Surface Settlement Plate	Placed at overburden FSL to measure total settlement at a particular location post filling to help verify total settlement for confirming of final bulking at time of mine closure	On reaching FSL	monthly	weekly	TBA
Vibrating wire Piezometer	Placed at different depths within the tailing to measure excess pore pressure and compare actual pore pressures to predicted	After reaching FSL (installed in borehole drilled from FSL)	monthly	weekly	TBA
Standpipe Piezometer	To measure hydrostatic pore pressure to help calculate excess pore pressure	After reaching FSL (installed in borehole drilled from FSL)	monthly	weekly	TBA
Magnetic Probe Extensometer	to measure post filling settlement in tailings only (to supplement deep settlement plates). This is needed to help differentiate between settlement in tailings and settlement in overburden	After reaching FSL (installed in borehole drilled from FSL)	monthly	weekly	TBA
Site Investigations Scope to supplement Instrumentation					
Location	**Test Type**	**Frequency**			
Sand / cemented sand layers used for ore as existing insitu	Insitu Density and moisture content on samples taken from cores in this layer while drilled without water or fluid (samples or cores to be maintained undisturbed as practically as possible) or using other drilling methods with minimal disturbance or sampling tools for undisturbed samples	Two tests at different depths within this layer / borehole for two different boreholes in cell 1	Prior to Mining Commencing		
Overburden Placement	Insitu Density using sand replacement method and moisture content testing to verify void ratio/bulk density after placement compaction the cell backfill Undisturbed samples for oedometer tests in laboratory to verify creep parameters assumed in TARP	One test every 2m of vertical lift in first cell	During and after Filling		
Tailings	CPT and Oedometer tests through tailings once adequate overburden in place to verify uniformity (i.e. absence of clay layers which may slow down consolidation of tailings)	4 CPTu and 4 Oedometer Test Per Cell once overburden thickness is adequate to support CPT rig	On completion of placement of 2-3m of overburden over tailings		
Overarching instrumentation philosophy					
Where possible instrumentation is to be remote connected to cloud based data store/hub with an interface to allow viewing of the data from each instrument location and type representing trends. The instruments will have trigger level alarms matched to the TARP values and be configured to auto report to VHM					

Instrumentation Schedule

Indicative Remote Instrumentation


DATASHEET

VIOTEL

Vibrating Wire Node (4-Ch)

FEATURES AND BENEFITS:

Specifications

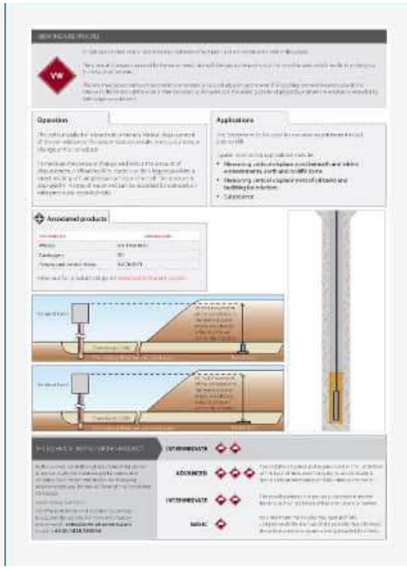

VIOTEL

5 Instrumentation Overview

5.1 Vibrating Wire Piezometers


soil INSTRUMENTS

PRECISELY MEASURED




VIOTEL

4 myViotel - Web Based Data Visualisation

Appendix C2- Establishing Agricultural Crop

	Level 1	Level 2	Level 3
Trigger	Rehabilitation • Mining cell winter NDVI averages >95% of unmined area • Crop yields >95% established baseline figure /after third year of rehabilitation	Rehabilitation • Mining cell winter NDVI averages >75% but <95% of unmined area • Crop yields >75% but <95% of established baseline figure after third year of rehabilitation	Rehabilitation • Mining cell winter NDVI <60% of unmined area • Crop yield <75% of established baseline figure after third year of rehabilitation
Action/Response	Continue monitoring	• Compare the physical and chemical aspects of underperforming areas with better performing areas. Assessments to be undertaken include visual observation, soil analyses and plant tissue/grain analyses. • Apply treatments as indicated by the analyses. Reanalyse to assess the effect of the interventions.	• Compare the physical and chemical aspects of underperforming areas with better performing areas. Assessments to be undertaken include visual observation, soil analyses and plant tissue/grain analyses. • Apply treatments as indicated by the analyses. Reanalyse to assess the effect of the interventions
Frequency	Corrective treatments post winter NDVI assessments Yield data and grain quality (protein, metabolisable energy) annually.	NDVI annually - mid winter. Corrective treatments post winter NDVI assessments. Yield data and grain quality (protein, metabolisable energy) annually.	NDVI annually -mid winter Corrective treatments post winter NDVI assessments. Yield data and grain quality (protein, metabolisable energy) annually.

	Level 1	Level 2	Level 3
	Other measurables depending on crop type.	Other measurables depending on crop type.	Other measurables depending on crop type.
Responsible Party	Environment Manager Mine Manager	Environment Manager Mine Manager	Environment Manager Mine Manager

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