NSW GOVERNMENT

NSW Resources Regulator

FWP0001033

EXCELSIOR LIMESTONE QUARRY FORWARD PROGRAM

Sunday 27 March 2022 to Wednesday 26 March 2025

Contents

Summary

DETAIL	
Mine	Excelsior Limestone Quarry
Reference	FWP0001033
Forward program commencement date	Sunday 27 March 2022
Forward program end date	Wednesday 26 March 2025
Forward program revision (if applicable)	
Contact	Carolay Guarin
Mining leases	SL 664 (1906), MPL 318 (1973), PLL 1219 (1924), ML 1517 (1992)
Project location	GRAYMONT (EXCELSIOR) PTY LTD
Date of submission	Thursday 28 July 2022

Important

The department may make the information in your program and any supporting information available for inspection by members of the public, including by publication on its website or by displaying the information at any of its offices. If you consider any part of your program to be confidential, please communicate this to the department via the message function on this submission within the NSW Resources Regulator Portal.

Three-year forecast – surface disturbance activities

Project description

High-grade limestone is mined at Graymont's Excelsior Limestone Mine and transported to the nearby Charbon Lime Plant. The limestone is further processed at Charbon to deliver lime products for essential services while supporting vital industrial processes and agricultural needs.

Before Graymont's acquisition in August 2019, Sibelco operated the Excelsior Quarry from 2011 and before Sibelco, Hyrock operated the quarry at Excelsior since 1980. The limestone deposit was opened following the construction of the nearby Mudgee Railway Line in the 1870s. Limestone had been used for the lime burning and cement manufacture at the Goodlett Smith Granville cement works, the metallurgical flux at Hoskin's Lithgow iron and steelworks and from 1968 by Austen and Butta Pty Limited for its coal mines. The expected remaining life of the mine is approximately 20 years.

Description of surface disturbance activities

Exploration activities

Exploration activities that may occur during the forward plan period include infill drilling to improve knowledge of the resource geology and assist mine planning. These activities will be undertaken within the approved mine footprint. The impact of such drilling is considered low with minimal land disturbance. All exploration drill holes will be effectively plugged or backfilled on completion of geological investigations.

Construction activities

There are no anticipated construction activities for the duration of the forward plan.

Mining schedule

Mining development method and sequencing and general mine features.

Over the next three years mining will continue to occur within the No. 1 pit, concentrating on the north and west of the pit on ML1517 and PLL 1219, respectively.

The method of operation of Excelsior Quarry is explained as follows:

- Prior to overburden removal, vegetation is felled and pushed to the extremity of the Site.

• Overburden is removed by ripping and/or blasting and transported to the overburden emplacement by haul trucks. The removal of overburden is an essential part of the mining operation as most of the deposit is overlain by Permo-Carboniferous shales and conglomerates.

• Limestone is mined from the quarry faces by drilling and blasting. Secondary blasting is minimised by careful blasting design which is directed to maximising in-situ crushing during the actual blasting process.

• Limestone is removed from the face with front end loaders or excavator and transported via 30t dump trucks to the Processing plant for further crushing and screening

• Screened limestone is then stockpiled as a finished product or further processed by washing, to remove overburden material which is transported to the overburden emplacement area.

• Lime kiln dust (LKD) generated at Charbon lime plant is transported to Excelsior Quarry where it is emplaced within the overburden emplacement area in the No.1 Pit.

Areas identified for emplacements, the sequencing of emplacements, construction, and management.

Overburden stripping would occur in the southwest direction of No. 1 Pit to expose limestone. Overburden from this area will form part of the main south haul road development to link the in-pit primary and secondary crushers. Graymont is backfilling No.1 Pit with overburden to minimise the haul distance for overburden and reduce the need to disturb new land for overburden emplacement.

Overburden will also be stripped in the southeast of No.1 Pit mainly to improve wall stability in the area. High-quality limestone extraction will continue to the north of No.1 Pit, with low-grade limestone extraction in the southwest area for blending purposes.

Processing infrastructure activities and the location of tailings facilities and schedule for emplacement

The quarrying of limestone at Excelsior requires the stockpiling of stone at the start and end points of the mining process. A small short-term stockpile is utilised at the primary crusher located in the pit. There are two main product stockpile areas. One is located to the immediate north of the washery/office/loading bin area, and the other is located off the main access road to the south of the washery area. Product stockpiles store various grades and sizes of products, following crushing to size and washing. These stockpiles are constructed by dumping from road trucks and by a front-end loader material handling.

There are no tailing facilities on site.

Waste disposal and materials handling operations.

Waste oil, lubricants, degreasers, and general domestic waste are disposed of offsite at appropriately licensed facilities. Wastewater from showers and sewage are treated through a septic tank system. Rubbish (domestic waste) is disposed of in bins emptied by a licensed waste contractor and disposed of at the Mudgee waste facility.

Disposal of limestone kiln dust material (sourced from Charbon) will continue in association with overburden emplacement within the No.1 Pit.

Key production milestones

MATERIAL	UNIT	YEAR 1	YEAR 2	YEAR 3
Stripped topsoil (if applicable)	(m^3)	0	1,500	0
Rock/overburden	(m^3)	105,000	924,000	78,000
Ore	(Mt)	0.19	0.19	0.19
Reject material[1]	(Mt)	0.06	0.06	0.06
Product	(Mt)	0.13	0.13	0.13

[1] This includes coarse rejects, tailings and any other wastes resulting from beneficiation.

Three-year rehabilitation forecast

Rehabilitation planning schedule

Rehabilitation planning schedule

The rehabilitation planning schedule for Excelsior will include a set of activities to review and ensure that the proposed rehabilitation milestones are achieved. The Forward Program process will drive annual review of the rehabilitation progress of the mine. This process will evaluate past rehabilitation processes and activities with the aim to incorporate lessons learned for ongoing and future rehabilitation.

In addition to annual rehabilitation reviews the following activities will be carried out over the next three years:

- Identify Analogue Sites that represent the proposed final land use of native vegetation
- Maintenance of a topsoil inventory to document stripped, stockpiled and re-spread resources and review the material balance to make plans to create or acquire additional soil material, if needed.
- Monthly inspections to identify soil and land erosion and adequacy of soil, erosion and drainage controls
- Weed management inspections for rehabilitated areas, keeping records of inspections and creating action plans if needed.
- Design of landform and water drainage structures.
- Inspections to record the progression towards achievement of the intended landform.
- Rehabilitation monitoring inspections of areas in the ecosystem establishment phase to be undertaken every six months by a specialist to allow early identification of any emerging threats to rehabilitation.

Stakeholder consultation

No stakeholder consultation is planned to be carried out at this stage.

Rehabilitation studies, risk assessments and/or design work

An inspection by an ecologist will be undertaken to gather information on native vegetation surrounding the Excelsior mine, establish analogue sites for future reference, and advise on preferred plant species mix for rehabilitation areas to be returned to native vegetation.

Rehabilitation research and trials

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS
RRT0001019	**Revegetation Methods**	Establish native vegetation in the onsite overburden dump and other areas disturbed by mining	Two rehabilitation trial will be established, one at the No. 2 Overburden Emplacement area and one at the old graveyard area. Both plots will be 5m x 15m and aim to trial rehabilitation methodologies for factors such as substrate formation, soil amelioration, plant species selection and establishment techniques. Native tree and shrub trial plots would be established to determine how well native vegetation can establish across former mining areas and identify species that are more successful	31 Dec 2025	Not started

Rehabilitation maintenance and corrective actions

No significant maintenance or corrective action activities are proposed.

Areas within and surrounding the mine lease do possess invasive species (weeds) that could impact performance of future rehabilitation. Management of undesirable species will be scheduled, undertaken and monitored to control species that may have an adverse impact in achieving the final land use. A weed management plan will be developed and will include the following:

- Identification of the weed species of concern
- Assessment and accurate mapping of the distribution and density of the weed species; and
- Identification of an appropriate weed management techniques and a program for active control.

Rehabilitation schedule

Rehabilitation schedule year 1:

- Infrastructure area internally identified as IA6 to commence Landform Establishment phase.

Rehabilitation schedule year 2:

- Infrastructure area internally identified as IA6 is to progress to Growth Media Development phase .
- Infrastructure area internally identified as R2 to commence Landform Establishment phase.

Rehabilitation schedule year 3:

- Infrastructure area internally identified as IA6 is to progress to Ecosystem and Land Use Establishment phase.
- Infrastructure area internally identified as R2 is to progress to Growth Media Development phase.

Subsidence remediation for underground operations

Not applicable. There are no underground operations on site.

Progressive mining and rehabilitation statistics

Three-yearly forecast cumulative disturbance and rehabilitation progression

	FORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
A	**Total surface disturbance footprint**	(ha)	38.32	38.32	38.32
B	**Total active disturbance**	(ha)	38.32	38.32	38.32
C	**Land prepared for rehabilitation**	(ha)	0.82	2.01	5.26
D	**Ecosystem and land use establishment**	(ha)	0	0	0.82

Rehabilitation key performance indicators (KPIs)

	FORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
O	**Total new active disturbance area**	(ha)			
P	**Area proposed for active rehabilitation**	(ha)	0.82	1.19	4.06
Q	**Annual rehabilitation to disturbance ratio**				

Attachment 1 – Reporting Definitions

REPORTING CATEGORY		DEFINITION
A	Total disturbance footprint – surface disturbance	All areas within a mining lease that either have at some point in time or continue to pose a rehabilitation liability due to surface disturbance activities. The total disturbance footprint is the sum of the total active disturbance, decommissioning, landform establishment, growth medium development, ecosystem and land use establishment, ecosystem and land use development and rehabilitation completion (see definitions below). Underground mining operations should not include the footprint of underground mining areas/subsidence management areas in the total disturbance footprint.
B	Total active disturbance	Includes on-lease exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, waste rock emplacements (active/unshaped/in or out-of-pit), tailings dams (active/unshaped/uncapped) and temporary stabilised areas (e.g. areas sown with temporary cover crops for dust mitigation and temporary rehabilitation).
C	Rehabilitation – land preparation	Includes the sum of all disturbed land within a mining lease that have commenced any, or all, of the following phases of rehabilitation– decommissioning, landform establishment and growth medium development. Refer to the glossary of terms in this document for the definition of these phases of rehabilitation.
D	Ecosystem and land use establishment	Includes the area which has been seeded/planted with the target vegetation species for the intended final land use. However, vegetation has not matured to a stage where it can be demonstrated that it will be sustainable for the long term and or require only a maintenance regime consistent with target reference/analogue sites. Typically, rehabilitation areas would be in this phase for at least two years (and usually more) before rehabilitation can be classified as being in the ecosystem and land use development phase. This phase does not apply to infrastructure areas that are being retained as part of final land use for the site.

REPORTING CATEGORY	DEFINITION
O	The area of any new active disturbance that will be created during the next three years, as defined under definition A1 (definition A1 Table 5).
P	The sum of any new rehabilitation to be commenced in the next three years. These areas may be in the phases "Rehabilitation - Land Preparation" or the "Ecosystem & Land Use Establishment" (definitions C & D in Table 5).
Q	The rehabilitation to disturbance ratio (S / R) indicates how many hectares of new rehabilitation are undertaken for each hectare of land disturbed during the three years. A ratio of 1/1 indicates that the area of new rehabilitation and disturbance in that period are the same.

Attachment 2 – Definitions

WORD	DEFINITION
Active	In the context of rehabilitation, land associated with mining domains is considered 'active' for the period following disturbance until the commencement of rehabilitation.
Active mining phase of rehabilitation	In the context of rehabilitation, the active mining phase of rehabilitation constitutes the rehabilitation activities undertaken during mining operations such as salvaging and managing soil resources, salvaging habitat resources, and native seed collection. This phase also includes management actions taken during operations to manage risks to rehabilitation and enhance rehabilitation outcomes such as selective handling of waste rock and management of tailings emplacements.
Analogue site	In the context of rehabilitation, an analogue site is a 'reference site' that represents an example of the defining characteristics (such as vegetation composition and structure or agricultural productivity) of the final land use. Characteristics of analogue sites can be assessed to develop the rehabilitation objectives and completion criteria for final land use domains.
Annual rehabilitation report and forward program	As described in the Mining Regulation 2016.
Annual reporting period	As defined in the Mining Regulation 2016.
Closure	A whole-of-mine-life process, which typically culminates in the relinquishment of the mining lease. It includes decommissioning and rehabilitation to achieve the approved final land use(s).
Decommissioning	The process of removing mining infrastructure and removing contaminants and hazardous materials.
Decommissioning Phase of Rehabilitation	Activities associated with the removal of mining infrastructure and removal and/or remediation of contaminants and hazardous materials. In the context of the rehabilitation management plan this phase of rehabilitation may also include studies and assessments associated with decommissioning and demolition of infrastructure or works carried out to make safe or 'fit for purpose' built infrastructure to be retained for future use(s) following lease relinquishment.

WORD	DEFINITION
Department	The Department of Regional NSW.
Disturbance	See Surface Disturbance.
Disturbance area	An area that has been disturbed and that requires rehabilitation. This may include areas such as on-licence exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, waste emplacements (active/unshaped/in or out-of-pit), tailings dams (active/unshaped/uncapped), and areas requiring rehabilitation that are temporarily stabilised (i.e. managed to minimise dust generation and/or erosion).
Domain	An area (or areas) of the land that has been disturbed by mining and has a specific operational use (mining domain) or specific final land use (final land use domain). Land within a domain typically has similar geochemical and/or geophysical characteristics and therefore requires specific rehabilitation activities to achieve the associated final land use.
Ecosystem and Land Use Development	This phase of rehabilitation consists of the activities to manage maturing rehabilitation areas on a trajectory to achieving the approved rehabilitation objectives and completion criteria. For vegetated land uses this phase may include processes to develop characteristics of functional self-sustaining ecosystems, such as nutrient recycling, vegetation flowering and reproduction, and increasing habitat complexity, and development of a productive, self-sustaining soil profile. This phase of rehabilitation may include specific vegetation management strategies and maintenance such as tree thinning, supplementary plantings and weed management.
Ecosystem and Land Use Establishment	This phase of rehabilitation consists of the processes to establish the approved final land use following construction of the final landform. For vegetated land uses this rehabilitation phase includes establishing the desired vegetation community and implementing land management activities such as weed control. This phase of rehabilitation may also include habitat augmentation such as installation of nest boxes.
Exploration	Has the same meaning as that term under the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.

WORD	DEFINITION
Final landform and rehabilitation plan	As defined in the Mining Regulation 2016.
Final land use	As defined in the Mining Regulation 2016.
Form and way	Means the form and way approved by the Secretary. Approved form and way documents are available on the Department's website.
Growth Medium Development	This phase of rehabilitation consists of activities required to establish the physical, chemical and biological components of the substrate required to establish the desired vegetation community (including short lived pioneer species. This phase may include spreading the prepared landform with topsoil and/or subsoil and/or soil substitutes, applying soil ameliorants to enhance the physical, chemical and biological characteristics of the growth media, and actions to minimise loss of growth media due to erosion.
Habitat	Has the same meaning as that term under the *Biodiversity Conservation Act 2016* and the *Fisheries Management Act 1994* (as relevant).
Indicator	An attribute of the biophysical environment (e.g. pH, topsoil depth, biomass) that can be used to approximate the progression of a biophysical process. It can be measured and audited to demonstrate (and track) the progress of an aspect of rehabilitation towards a desired completion criterion (i.e. defined end point). It may be aligned to an established protocol and used to evaluate changes in a system.
Land	As defined in the *Mining Act 1992.*
Landform Establishment	This phase of rehabilitation consists of the processes and activities required to construct the final landform. In addition to profiling the surface of rehabilitation areas to the approved final landform profile this phase may include works to construct surface water drainage features, encapsulate problematic materials such as tailings, and prepare a substrate with the desired physical and chemical characteristics (e.g. rock raking or ameliorating sodic materials).
Large mine	As defined in the Mining Regulation 2016.
Lease holder	The holder of a mining lease.

WORD	DEFINITION
Life of mine	The timeframe of how long a mine is approved to mine, from commencement to closure.
Mine rehabilitation portal	Means the NSW Resources Regulator's online portal that lease holders must use (via a registered account) to: ■ upload rehabilitation geographical information system (GIS) spatial data ■ develop rehabilitation GIS spatial data (using online tracing functions) ■ generate rehabilitation plans and rehabilitation statistics using the map viewer and Rehabilitation Key Performance Indicator functionalities. Data submitted to the mine rehabilitation portal is collated in a centralised geodatabase for use by the NSW Resources Regulator to regulate rehabilitation performance of lease holders.
Mining area	As defined in the *Mining Act 1992*.
Mining domain	A land management unit with a discrete operational function (e.g. overburden emplacement), and therefore similar geophysical characteristics, that will require specific rehabilitation treatments to achieve the final land use(s).
Mining land	As defined in the *Mining Act 1992.*
Native vegetation	Has the same meaning as that term under section 60B of the *Local Land Services Act 2013.*
Overburden	Material overlying coal or a mineral deposit.
Performance indicator	An attribute of the biophysical environment (for example pH, slope, topsoil depth, biomass) that can be used to demonstrate achievement of a rehabilitation objective. It can be measured and audited to demonstrate (and track) the progress of an aspect of rehabilitation towards a desired completion criterion, that is, a defined end point. It may be aligned to an established protocol and used to evaluate changes in a system.

WORD	DEFINITION
Phases of rehabilitation	The stages and sequences of actions required to rehabilitate disturbed land to achieve the final land use. The phases of rehabilitation are: ■ active mining ■ decommissioning ■ landform Establishment ■ growth medium development ■ ecosystem and land use establishment ■ ecosystem and land use development.
Progressive rehabilitation	The progress of rehabilitation towards achieving the approved rehabilitation completion criteria. This may be described in terms of domains, phases, performance indicators and rehabilitation completion criteria.
Rehabilitation Completion	The final phase of rehabilitation when a rehabilitation area has achieved the approved rehabilitation objectives and rehabilitation completion criteria for the final land use. Rehabilitation areas may be classified as complete when the NSW Resources Regulator has determined in writing that the relevant rehabilitation obligations have been fulfilled following submission of *Form ESF2 Rehabilitation completion and/or review of rehabilitation cost estimate* application by the lease holder.
Rehabilitation Completion criteria	As defined in the Mining Regulation 2016.
Rehabilitation cost estimate	As defined in the Mining Regulation 2016.
Rehabilitation management plan	As defined in the Mining Regulation 2016.
Rehabilitation objectives	As defined in the Mining Regulation 2016.
Rehabilitation risk assessment	As defined in the Mining Regulation 2016.
Rehabilitation schedule	The defined timeframes for progressive rehabilitation set out in the forward program.

WORD	DEFINITION
Relevant stakeholders	Means any persons or bodies who may be affected by the mining operations, including rehabilitation, carried out on the lease land, and includes: ■ the relevant development consent authority ■ the local council ■ the relevant landholder(s) ■ community consultative committee (if required under the development consent) or equivalent consultative group ■ affected land holder(s) ■ government agencies relevant to the final land use ■ affected infrastructure authorities (electricity, telecommunications, water, pipeline, road, rail authorities) ■ local Aboriginal communities, and ■ any other person or body determined by the Minister to be a relevant stakeholder in relation to a mining lease.
Risk	The effect of uncertainty on objectives. It is measured in terms of consequences and likelihood (AS/NZS ISO 31000:2009).
Secretary	The Secretary of the Department.
Security deposit	An amount that a mining lease holder is required to provide and maintain under a mining lease condition, to secure funding for the fulfilment of obligations under the lease (including obligations that may arise in the future).
Surface disturbance	Includes activities that disturb the surface of the mining area, including mining operations, ancillary mining activities and exploration.
Tailings	A combination of the fine-grained solid material remaining after the recoverable metals and minerals have been extracted from the mined ore, and any process water[2].
Waste	Has the same meaning as that term under the *Protection of the Environment Operations Act 1997*.

[2] Commonwealth of Australia (DITR), 2007. *Tailings Management.*

Attachment 3 – Plans

Plan 2A - Forward Program.pdf

Plan 2B - Forward Program.pdf

Plan 2C - Forward Program.pdf

Plan 2A Mining and Rehabilitation – Year 1

Legend

Forecast Data Year1

- Forecast Disturbance
- Forecast Land Prepared for Rehabilitation
- Ecosystem and Land Use Establishment

Project Approval Boundary

World Imagery

Low Resolution 15m Imagery

High Resolution 60cm Imagery

High Resolution 30cm Imagery

Citations

Notes

Rehabilitation Portal Submission Numbers
Forecast Data Year 1: 1824

543.2 0 271.58 543.2 Meters

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Plan 2**B** Mining and Rehabilitation – Year 2

Legend

Forecast Data Year2

- Forecast Disturbance
- Forecast Land Prepared for Rehabilitation
- Ecosystem and Land Use Establishment

Project Approval Boundary

World Imagery

Low Resolution 15m Imagery

High Resolution 60cm Imagery

High Resolution 30cm Imagery

Citations

Notes

Rehabilitation Portal Submission Numbers
Forecast Data Year 2: 1825

543.2 0 271.58 543.2 Meters

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Plan 2**C** Mining and Rehabilitation – Year 3

Legend

Forecast Data Year3

- Forecast Disturbance
- Forecast Land Prepared for Rehabilitation
- Ecosystem and Land Use Establishment

Project Approval Boundary

World Imagery

Low Resolution 15m Imagery

High Resolution 60cm Imagery

High Resolution 30cm Imagery

Citations

Notes

Rehabilitation Portal Submission Numbers
Forecast Data Year 3: 1826

543.2 0 271.58 543.2 Meters

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