NSW GOVERNMENT

NSW Resources Regulator

FWP0001633

CSA MINE FORWARD PROGRAM

Wednesday 5 February 2025 to Friday 4 February 2028

Summary

DETAIL	
Mine	CSA Mine
Reference	FWP0001633
Forward program commencement date	Wednesday 5 February 2025
Forward program end date	Friday 4 February 2028
Forward program revision (if applicable)	
Contact	Michael Priest
Mining leases	CML 5 (1992), MPL 1094 (1906), MPL 1093 (1906)
Project location	Cobar Management Pty Limited
Date of submission	Monday 12 May 2025

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

The CSA Copper Mine is located in western NSW, 11km north of the town of Cobar. MAC Copper limited owns Cobar Management Pty Ltd (CMPL) who in turn owns and operates the CSA Mine. CMPL holds Mining Lease (CML5) over the CSA deposit as well as MPL 1094 and MPL 1093. The CSA Mine is an underground mine serviced by two hoisting shafts and a decline from surface to the base of the mine. Ore is produced principally from the QTS North and QTS Central systems with the decline at a depth of 1900m below the surface. The ore is crushed underground, hoisted to surface, and milled and processed through the CSA Mine Copper Concentrator. The current estimated Mineral Reserves support operations until the end of 2036, having 20.3 Million tonnes in Total Mineral Resources (as at December 31, 2024) at a copper grade of 5%.

Description of surface disturbance activities

Exploration activities

Work in the following reporting period for CML5 will consist partly of surface resource definition drilling and partly near-mine surface exploration drilling. The exploration drilling will test targets at the Outer Reef, Stoney Tank and Endurance (and possibly other) prospects that have been identified by the 2024 LTS FLEM survey, historical geochemistry and previous drilling (including accompanying DHEM surveys). Further surface exploration drilling will test northern Zn-Pb-Ag extensions to the Eastern and Western Systems (including Western Gossan and Block 19). These areas are characterised by anomalism in the 2021 HTS FLEM survey, historical trench and surface geochemistry, previous shallow RC drilling and by a paucity of exploratory diamond drilling. Exploratory drilling will be accompanied by DHEM surveying. The resource definition drilling will continue to test extensions (and infill) at the QTS South Upper and Pink Panther prospects, as well as the relatively shallow Zn-Pb-Ag lenses associated with the upper levels of the Eastern and Western Systems.

Construction activities

The major site construction project is the extension of the Southern TSF with Stage 10 wall lift being completed in two stages; the east and west mounds. In addition, waste rock is being stockpiled from underground and removed from the Northern TSF temporary waste rock storage for construction purposes. A rail terminal is planned to be constructed adjacent to the existing rail spur. This will consist of a compacted and sealed laydown area to allow for the handling of container freight. The planned terminal with be approximately 10,000m² and

located on of pre-disturbed ground. The existing leased cooling plant at fresh air raise 1 (FAR1) will be replaced with an expansion of the exiting cooling plant at fresh air raise 2 with chilled water reticulated to a new bulk air cooler to be constructed at FAR1. The FAR1 bulk air cooler will cover an area which accommodates the existing leased plant.

Mining schedule

Mining development method and sequencing and general mine features.

"The CSA Mine consists of four primary mining regions, with a fifth currently under development: The QTSN zone accounts for 70–80% of total ore output. Mining in this region is conducted using a transverse open stoping method, retreating from east to west across multiple ore lenses. Stoping begins near the centroid of the ore block. To effectively manage stress redistribution during mining, a reverse echelon "V" pattern is employed. All extracted stopes are backfilled with paste fill—a mixture of cement, tailings, and water—which provides effective ground support and allows for safe ongoing extraction activities. The QTSC area is mined longitudinally along the strike of the ore lens. Future mining will proceed from south to north, returning to the level access. The WEST region also utilizes a longitudinal stoping method, with extraction occurring bottom-up along the strike of the orebody, retreating from South to North to the access. The EAST region is a smaller and more irregular mining front located between QTSN and QTSC. Due to its complex geometry, stopes in this area are mined using a combination of transverse and longitudinal methods. The QTSS-U region represents the upper portion of the QTSS orebody and is currently under development. While no stope extraction has yet commenced, development activities are ongoing to establish access and infrastructure. This region is expected to support future mining operations once development is complete and production begins

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

Both the Mt Browne and NTSF AMA areas are used for temporary emplacement of both waste rock and ore. Both these areas were previously excised from the mining lease and have since been capped and repurposed for this role. The NTSF area will be further utilised for temporary storage of waste rock which will be stockpiled for future tailings construction and rehabilitation. The sections of the NTSF AMA area which are not capped with waste rock will have a sheeted layer of approx. 300mm of NAF waste rock prior to any temporary waste rock storage. Small temporary stockpiles are located around the edges of the STSF for construction purposes.

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

Currently the Southern TSF (STSF) is operational at Stage 9, with Stage 9 buttressing completed and Stage 10 construction being undertaken, which will provide a life of mine for the tailings out to 2032. Investigations are underway for future tailings storage facility with a preference for repurposing the excised Northern TSF (pending investigations and approvals). Approx

50% of the reject material is used as paste fill to backfill underground stopes and the remainder is pumped to the STSF.

Waste disposal and materials handling operations.

The non mineral waste management (Rubbish and Recycling) requirements and processes for handling, storage, reuse, recycling and disposal of all major waste streams at the CSA are managed as per the CSA Mine Site Waste Management Procedure. Non mineral waste is removed from site by appropriate licenced contractors as required. Underground waste rock (mineral waste) is transferred to the surface through the ore haulage system and hoisted to the surface, where it is then trucked to either stockpiles for temporary storage for future construction and rehabilitation. With the development of the Merrin Mine in the CSA uppers, waste rock from here is also trucked out the decline to the surface for temporary storage.

Key production milestones

MATERIAL	UNIT	YEAR 1	YEAR 2	YEAR 3
Stripped topsoil (if applicable)	(m^3)	0	0	0
Rock/overburden	(m^3)	192,347	162,825	139,253
Ore	(Mt)	1.16	1.38	1.43
Reject material[1]	(Mt)	985,467	1,187,794	1,233,245
Product	(Mt)	175,780	195,063	197,570

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

Three-year rehabilitation forecast

Rehabilitation planning schedule

Rehabilitation planning schedule

The CSA mine is currently in the mature operations stage (mid-mine phase) where most of the disturbance has taken place and the mine is in steady state operations. There is minimal opportunity or availability of progressive rehabilitation to be undertaken and completed. Two rehab areas (Fan rehab and South Con Rehab) have recently been rehabbed with contour ripping and seeding. Seeds were acquired based on the PCTs associated with final landform, and ripping occurred to an appropriate depth to facilitate adequate soil amelioration from rehabilitation additives (sugarcane mulch for structure and added OM, lime for raising pH, and fertiliser for additional NPK). Watershed contours were also constructed to aid in reducing runoff from these areas, with the aid of Local Land Services. Most of the revegetation on site occurs in pre cleared (Historic or old areas) but currently not in active use has occurred by natural succession from native vegetation from the surrounding areas.

Stakeholder consultation

Stakeholder consultation was undertaken for the CSA site during the development of the annual Sustainability Report. No further consultation with stakeholders is currently planned during the period of this Forward Program

Rehabilitation studies, risk assessments and/or design work

As the CSA mine is currently in an operational stage with a relatively long LOM, no formal rehabilitation trials are proposed. However investigations into the capping and closure of tsf's will be undertaken at some stage in the future for closure.

Rehabilitation research and trials

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS
RRT0001047	**SA Mine Targeted Assessment Program and Closure Management Plan**	Undertake an assessment of all rehabilitation material inventories required to achieve rehabilitation outcomes and undertake an assessment of the conceptual final landform design for STSF	Leach column test: a sub-sample from each column would be sent to a National Association of Testing Authorities, Australia (NATA) laboratory for static acid-base-account testing, particle size distribution analysis and a bottle roll test on a 1:2 sample to deionised (DI) water solution as an indication of first flush water quality, heated on a weekly cycle, run for 24 weeks.The humidity cell test procedure is designed to enhance the mass release of acidity / alkalinity + metals from 1-5kg sampl	1 Nov 2022	Ongoing
RRT0001048	**Cover column trials for the STSF**	Conceptual STSF cover design and modelling, cover column trials.	Modelling using SVFlux	30 Jan 2023	Ongoing

Rehabilitation maintenance and corrective actions

CMPL intends to complete the following to address all rehabilitation performance issues and or knowledge gaps identified in the latest annual rehabilitation report. Corrective actions include: implementation of joint rehabilitation efforts on excised areas, continuation of environmental monitoring of surface water, groundwater and air, continued maintenance activities on rehabilitation land towards ameliorating soil to a level where the chosen PCT is able to be established through natural progression (largely aeolian seed dispersal).

Rehabilitation schedule

Yr 1 - review of site topsoil inventory and update topsoil management procedure Yr 2 - refine rehabilitation species mix and investigate seed collection opportunities with the local indigenous community Yr 3 - define parameters for TSF closure design planning and design closure trials, conduct trials, possibly in collaboration with external research institutes.

Completion of rehabilitation

CSA Mine is currently in the mature operations stage (mid-mine phase) where most of the disturbance has taken place and the mine is in steady state operations. Due to this, no areas are foreseen to achieve rehabilitation completion within the next three years.

Subsidence remediation for underground operations

Erosion and sedimentation are managed at the CSA mine site through the CMPL Water Management Plan and the Storm Water Drainage Improvement Plan. The CSA Mine Environmental Monitoring Program also includes a Surface Water Quality Monitoring Program, which monitors water samples taken two monthly from twelve monitoring locations throughout the mine site. The CSA Mine maintains bunds, water diversion drains and catchment dams within the mining lease area to mitigate potential erosion and sediment impacts. These structures are managed through regular monitoring and preventative maintenance. Offsite erosion and sedimentation is managed and prevented by a series of collection and diversion drains.

Progressive mining and rehabilitation statistics

Three-yearly forecast cumulative disturbance and rehabilitation progression

	FORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
A1	**Total disturbance footprint - surface disturbance**	(ha)	222.69	222.69	222.69
B	**Total active disturbance**	(ha)	202.22	202.22	200.54
P	**Total new area of land proposed for active rehabilitation**	(ha)	7.33	7.33	9

Rehabilitation key performance indicators (KPIs)

	FORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
O	**Total new disturbance area during reporting period**	(ha)			
P	**Total new area of land proposed for rehabilitation during the reporting period**	(ha)	7.33		1.67
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 Mining and Rehabilitation - Year 1.pdf

Plan 2B Mining and Rehabilitation – Year 2.pdf

Plan 2C Mining and Rehabilitation – Year 3.pdf