NSW GOVERNMENT

NSW Resources Regulator

FWP0001309

MUSWELLBROOK COAL FORWARD PROGRAM

Monday 1 January 2024 to Thursday 31 December 2026

Contents

Summary

DETAIL	
Mine	Muswellbrook Coal
Reference	FWP0001309
Forward program commencement date	Monday 1 January 2024
Forward program end date	Thursday 31 December 2026
Forward program revision (if applicable)	
Contact	Julie Thomas
Mining leases	ML 1304 (1992), CCL 713 (1973), ML 1562 (1992)
Project location	Muswellbrook Coal Company Limited
Date of submission	Wednesday 21 February 2024

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

Muswellbrook Coal Company Limited (MCC) operates the Muswellbrook Open Cut Coal Mine (the site), located approximately three kilometres (km) to the north-east of Muswellbrook in the Hunter Valley of New South Wales. MCC is a wholly owned subsidiary of Idemitsu Australia Pty Limited (IA). On 1 September 2003, Development Consent for DA 205/2002 was granted by Muswellbrook Shire Council (MSC) to extend the former MCC No.1 Open Cut. The No.1 Open Cut Extension commenced operations in March 2005 and has a capacity to produce up to 2,000,000 tonnes coal per annum with mining operations approved until end of 2022. Rehabilitation activities will progress past this date. A modification to the approval was granted on 20 December 2022 to allow the storage, handling and transport of coal to continue until the end of March 2023. The current mine life at MCC is zero years. Mining operations ceased in 2022, with coal storage, handling and transport ceasing in March 2023.

Description of surface disturbance activities

Exploration activities

No further exploration is proposed by MCC at the site during the next three years.

Construction activities

No construction is proposed by MCC at the site during the next three years.

Mining schedule

Mining development method and sequencing and general mine features.

No further coal mining is proposed by MCC.

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

Historically, both coarse and fine rejects were trucked back to the pit for disposal and managed as carbonaceous material. Overburden has been dumped sequentially into the Open Cut 1 and Open Cut 2 voids with consideration being given to carbonaceous content and liability to spontaneous combustion. Selective stockpiling of inert materials with no carbonaceous content has been undertaken for use as cover material in the final voids to aid in

the prevention of potential spontaneous combustion. As part of the final rehabilitation activities on the site, these stockpiles are being utilised to cover carbonaceous material.

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

Decommissioning of the Coal Handling and Preparation Plant (CHPP) has been completed. There are no tailings storage facilities onsite.

Waste disposal and materials handling operations.

Waste is currently segregated and taken offsite to either be recycled or disposed of at landfill by licenced contractors. This process will continue throughout the decommissioning process. All waste will be disposed of in accordance with EPA Guidelines. Where possible, all identified sources of contamination will be remediated during the operational phase of the mine. In some cases, however, this may not be possible (for example, under existing slabs and workshops) and in these circumstances the remediation will be undertaken during decommissioning. Contamination assessments will continue to be undertaken as areas are no longer required for active operations on site (e.g., ammonium nitrate storage areas).

Key production milestones

MATERIAL	UNIT	YEAR 1	YEAR 2	YEAR 3
Stripped topsoil (if applicable)	(m^3)	0	0	0
Rock/overburden	(m^3)	0	0	0
Ore	(Mt)	0	0	0
Reject material[1]	(Mt)	0	0	0
Product	(Mt)	0	0	0

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

Three-year rehabilitation forecast

Rehabilitation planning schedule

Rehabilitation planning schedule

Detailed mine planning is completed annually to determine proposed rehabilitation to be undertaken in the following year. Mine closure studies are ongoing for the site to address potential closure related knowledge gaps relating to lease relinquishment. Any outcomes that affect rehabilitation of the site will be incorporated into the rehabilitation planning.

Stakeholder consultation

A Stakeholder Engagement Plan has been developed for implementation during mine closure.

Rehabilitation studies, risk assessments and/or design work

Design works will be undertaken to determine the material handling required each year to achieve the approved final landform. A detailed design of water management structures for Open Cut 1 is being prepared. Installation of these structures will commence during Year 1 of this Forward Program.

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Rehabilitation research and trials

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS
FWP0001309					

Rehabilitation maintenance and corrective actions

Maintenance Maintenance activities will be conducted in accordance with the requirements of Section 6.2.6 of the Rehabilitation Management Plan. Intervention and Adaptive Management Intervention and adaptive management will be conducted in accordance with the requirements of Section 10.0 of the Rehabilitation Management Plan. Management and Mitigation Responses Management and mitigation responses will be conducted in accordance with the requirements of Section 10.0 of the Rehabilitation Management Plan. Trigger Action Response Plan (TARP) The Trigger Action Response Plan included in Section 10.0 of the Rehabilitation Management Plan identifies the proposed contingency strategies in the event of unexpected variations or impacts to rehabilitation outcomes. The TARP outlines the key identified risks, their trigger and proposed mitigation measures to reduce the identified risks.

Rehabilitation schedule

The status of areas still to rehabilitated and decommissioned along with the proposed timing for completion of rehabilitation and decommissioning are shown below. • Coal Handling and Preparation Plant o Removal of coal stockpiles – Q1 2024 o Reshaping of landform – Q2 2024 o Application of growth medium and seeding – Q2 2024 • Mine Infrastructure Area o Demolition of infrastructure – Q2 2026 o Reshaping of landform – Q3 2026 o Application of growth medium and seeding – Q4 2026 • Open Cut 1 oReshaping of landform – Q2 2025 o Installation of water control structures – Q2 2025 o Application of growth medium and seeding – Q2 2025 This schedule addresses the remaining rehabilitation activities at the site in a timeframe that is reasonably practicable.

Subsidence remediation for underground operations

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)	620.83	620.83	622.08
B	**Total active disturbance**	(ha)	137.4	17.8	0
P	**Total new area of land proposed for active rehabilitation**	(ha)	50.3	169.9	188.95

Rehabilitation key performance indicators (KPIs)

	FORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
O	**Total new active disturbance area**	(ha)	2.83		1.25
P	**Total new area of land proposed for active rehabilitation during the reporting period**	(ha)	50.3	119.59	19.05
Q	**Annual rehabilitation to disturbance ratio**		17.81		15.25

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

MUS01_008_ARRFP_Plan2A_Year1.pdf

MUS01_008_ARRFP_Plan2B_Year2.pdf

MUS01_008_ARRFP_Plan2C_Year3.pdf

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LEGEND

- Project Approval Boundary

Land Zone

- Bypass Zoning

Current Authorisations

- Coal - Current Titles

Forecast Area Type - Year 1 (2024)

- Forecast Disturbance (2024)
- Forecast Land Prepared for Rehabilitation (2024)
- Previous Rehabilitation
- Previous Disturbance

Muswellbrook Coal

Mining and Rehabilitation Year 1 - 2024

PLAN 2A

Mine name	Muswellbrook Coal
Plan name	Muswellbrook Coal Forward Program
Year of anticipated relinquishment	2050
Data theme submission ID No.	7097
Spatial Reference	GDA 1994 MGA Zone 56
Plan date (date created)	21/02/2024

LEGEND

- Project Approval Boundary

Land Zone

- Bypass Zoning

Current Authorisations

- Coal - Current Titles

Forecast Area Type - Year 2 (2025)

- Forecast Disturbance (2025)
- Forecast Land Prepared for Rehabilitation (2025)
- Previous Rehabilitation
- Previous Disturbance

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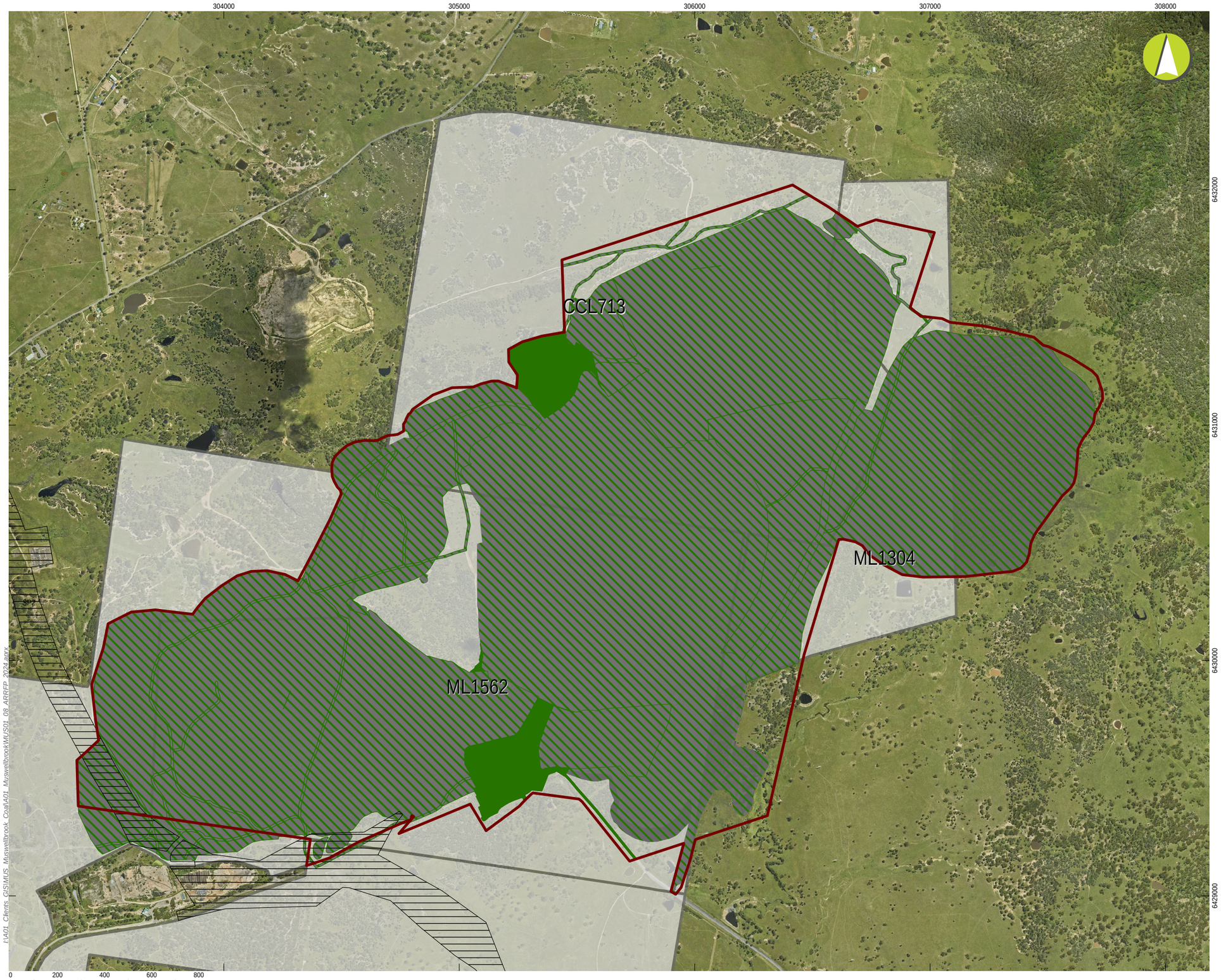
Muswellbrook Coal

Mining and Rehabilitation Year 2 - 2025

PLAN 2B

Mine name	Muswellbrook Coal
Plan name	Muswellbrook Coal Forward Program
Year of anticipated relinquishment	2050
Data theme submission ID No.	7098
Spatial Reference	GDA 1994 MGA Zone 56
Plan date (date created)	21/02/2024



LEGEND

- Project Approval Boundary

Land Zone

- Bypass Zoning

Current Authorisations

- Coal - Current Titles

Forecast Area Type - Year 3 (2026)

- Forecast Disturbance (2026)
- Forecast Land Prepared for Rehabilitation (2026)
- Previous Rehabilitation
- Previous Disturbance

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Muswellbrook Coal

Mining and Rehabilitation Year 3 - 2026

PLAN 2C

Mine name	Muswellbrook Coal
Plan name	Muswellbrook Coal Forward Program
Year of anticipated relinquishment	2050
Data theme submission ID No.	7099
Spatial Reference	GDA 1994 MGA Zone 56
Plan date (date created)	21/02/2024