NSW GOVERNMENT

NSW Resources Regulator

ARR0001320

MT ARTHUR COAL ANNUAL REHABILITATION REPORT

Saturday 1 July 2023 to Sunday 30 June 2024

Summary table

DETAIL	
Mine	Mt Arthur Coal
Reference	ARR0001320
Annual report period commencement date	Saturday 1 July 2023
Annual report period end date	Sunday 30 June 2024
Forward program	
Mining leases	CCL 744 (1973), ML 1487 (1992), ML 1593 (1992), ML 1757 (1992), ML 1655 (1992), CL 396 (1973), ML 1739 (1992), ML 1358 (1992), MPL 263 (1973), ML 1548 (1992)
Lease holder(s)	Mt Arthur Coal Pty Limited, HUNTER VALLEY ENERGY COAL PTY LTD
Contact	Jonathon Deacon
Date of submission	Tuesday 3 September 2024

Important

The department may make the information in your report 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 report to be confidential, please communicate this to the department via the message function on this submission within the NSW Resources Regulator Portal.

Mine details

Project description

Hunter Valley Energy Coal Pty Ltd (HVEC) operates Mt Arthur Coal (MAC), which consists of an approved open cut (with trucks and shovels to extract up to 32Mtpa of ROM coal) and underground mining operation, a rail loop and associated rail loading facilities located approximately 5 kilometres south west of Muswellbrook in NSW. Coal is crushed and washed, prior to export markets. MAC has development consent approval to operate until 30 June 2026 (PA 09-0062 MOD 1). Extraction to date has been occurring at a lesser intensity than the maximum rate authorised by the Project Approval. As a result, the progress of mining as at 2022 shows a different edge of footprint and rehabilitation progression. HVEC intends to apply to modify the Project Approval to extend mining operations until 30 June 2030, and to make consequential amendments including to the final landform. There are 12 mining and exploration leases and 2 subleases (Maxwell Infrastructure CL395 and CL229).

Life of mine

2 years

Current development consents, leases and licences

Development consents granted under the *Environmental Planning and Assessment Act 1979*

090062
090062
090062
090062
090062
090062
090062
090062
090062

Authorisations covering the mining area granted under the *Mining Act 1992*

CCL 744 (1973), ML 1487 (1992), ML 1593 (1992), ML 1757 (1992), ML 1655 (1992), CL 396 (1973), ML 1739 (1992), ML 1358 (1992), MPL 263 (1973), ML 1548 (1992)

Any other approvals, licences, or authorities issued by government agencies that are relevant to the progress of mining operation and rehabilitation activities

WAL 917 (20AL201126), WAL 918 (20AL201127)
WAL 1296, WAL 18141
WAL 18247, WAL 41495
EPBC 2011/5866, EPBC 2014/7377
WAL 41556, WAL 41557 and WAL 18175
EPL 11457

Summary of the scope and/or purpose of the new applications or modifications to existing approvals (if applicable)

Changes to land ownership and land use

No changes to land ownership related to the land have occurred during the FY24 reporting period.

Surface disturbance and rehabilitation activities during the reporting period

Surface disturbance and rehabilitation activities that were conducted and an analysis of the progress against the rehabilitation schedule

Surface disturbance and rehabilitation activities include: • Decommissioning of 2 run of mine tanks (approximately 20,000L) and associated piping / pump infrastructure; • Felling and mulching trees in situ on disturbance areas to increase organic content within the topsoil that was used directly on rehabilitation areas; • Reuse of felled trees from disturbance areas on new rehabilitation areas to provide habitat; • Completion of 47.46 ha of rehabilitation (Landform Establishment) • Completion of 0.80 ha of rehabilitation (Growth Media Development) • Completion of 152.18 ha of rehabilitation (Ecosystem and Landuse Establishment) across VD4, VD5, Saddlers North and Out of Pit Dump. • 121.1 ha of newly disturbed land occurred within the FY24 reporting period; and • Targeted stockpile maintenance including: weed treatment, application of fertiliser, spreading of pasture seed mix (refer Mt Arthur Coal FY24 Annual Review). Mining continued within the extended pit shell of Mt Arthur, consisting of: • Windmill Pit; • Calool Pit; • Roxburgh Pit; • Ayredale Pit; Mining (extraction) occurred less than the approved rate stated in the Project Approval. Prior to excavation of a new open cut strip, pre-stripping operations ensure that natural resources (vegetation and topsoil) are cleared and, where appropriate, recovered for subsequent use in post-mining rehabilitation.

Rehabilitation planning activities that were conducted, including any specialist studies

Following the announcement of cessation of mining at Mt Arthur in 2030, MAC is continuing detailed assessments for mine closure. These studies are expected to improve rehabilitation practices at Mt Arthur. A major step change in the execution and maintenance of rehabilitation at Mt Arthur this reporting period was the awarding and execution of an overarching rehabilitation contract. This covered all activities from bulk shaping to ongoing weed treatment and maintenance activities. Other planning activities included: • Continuation of natural landform design rehabilitation techniques and inclusion of habitat in new areas as they become available; • Annual rehabilitation monitoring was undertaken which includes monthly visual inspections, aerial inspections of landform establishment and design, and flora and fauna monitoring; • Aboriginal and heritage monitoring was undertaken in accordance with the AHMP and HHMP (further discussed in the RMP); • Pre-salvage inspection of heritage sites was undertaken in proximity of the Windmill Pit ahead of mining work (i.e. mining work scheduled for FY24); • Plans for short term and longer term management of tailings dams (floccing); and • Annual detailed mine planning. The Forward Program including Plans 2A to 2B describe activities over the next two years.

Overview of subsidence repair and/or remediation works undertaken

There is no recent history of mine subsidence within Mt Arthur Coal mine leases. No subsidence repair and/or remediation works undertaken during the FY24 reporting period.

Overview of rehabilitation management and maintenance activities

The following rehabilitation and maintenance activities were carried out throughout the reporting period: • 2 ROM tanks (approximately 20,000L) and associated piping / pump infrastructure continued decommissioned. • Weed control for rehabilitation maintenance and improvement occurred across VDs 1, 4 and 5; CD1; Drayton Void; Saddlers South; and McDonald's South. • Improvement works focussed on a targeted revegetation program in the VD5 area including slashing and ripping of planting beds, and tube stock diversification in Box Gum Woodland area of VD5 of approximately 4ha. • MAC continued the use of remote sensing to assess erosion building on work completed in FY23. Results focused on use of lidar to identify erosion gullies of certain depth and length and classifying them on as a risk to rehabilitation. Remote sensing of the FY24 rehabilitation areas and other existing rehabilitation areas has been planned for FY25. Topsoil management activities included: • Prioritising direct placement of topsoil; • Testing topsoil to determine appropriate depths for stripping and recovery as well as ameliorant requirements; • Felling and mulching trees in situ on disturbance areas to increase organic content within the topsoil that was used directly on rehabilitation areas; • Reusing felled trees from disturbance areas and oversized rock on new rehabilitation areas to provide habitat; and • Locating stockpiles so as to reduce the requirement for re-handling.

Details of any rehabilitation actions taken as required by any letters, notices or directions issued by government agencies, including the NSW Resources Regulator

The Section 240 flocculation project is ongoing, with the secondary stage to be continued into 2025. The NSW Resources Regulator held a Revegetation TAP on 23 May 2024, following which the NSW Resources Regulator provided MAC a letter with thirteen recommendations.

Details of any rehabilitation areas that have achieved the final land use

No areas were relinquished during the FY24 reporting period.

Key production milestones

MATERIAL	UNIT	YEAR 1	THIS REPORT
Stripped topsoil (if applicable)	(m^3)	0	199,000
Rock/overburden	(m^3)	0	136,000
Ore	(Mt)	0	22.2
Reject material[1]	(Mt)	0	6.8
Product	(Mt)	0	15.4

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

Disturbance and rehabilitation statistics

Current disturbance and rehabilitation progression

	ELEMENT	UNIT	THIS REPORT
A	**Total surface disturbance footprint**	(ha)	5,882.76
B	**Total active disturbance**	(ha)	4,640.85
C	**Land prepared for rehabilitation**	(ha)	48.17
D	**Ecosystem and land use establishment**	(ha)	1,193.74
E	**Ecosystem and land use development**	(ha)	0
F	**Rehabilitation completion**	(ha)	0

Rehabilitation key performance indicators (KPIs)

	ELEMENT	UNIT	THIS REPORT
G	**Total new active disturbance area**	(ha)	NA - this value will display after 2nd year ARR submission as calculation relies on comparison between sequential yearly ARR data
H	**New rehabilitation commenced during annual reporting period**	(ha)	NA - this value will display after 2nd year ARR submission as calculation relies on comparison between sequential yearly ARR data
I	**Established rehabilitation**	(ha)	0
J	**Annual rehabilitation to disturbance ratio**	%	NA - this value will display after 2nd year ARR submission as calculation relies on comparison between sequential yearly ARR data
K	**Rehabilitated land to total mine footprint**	%	0

Progressive achievement of established rehabilitation

	ELEMENT	UNIT	THIS REPORT
L	Established rehabilitation - agricultural final land uses	%	0
M	Established rehabilitation - native ecosystem final land uses	%	0
N	Established rehabilitation - other/non-vegetated final land uses	%	0

Variation to the rehabilitation schedule

Identify the components of the most recent forward program that were not achieved

N/A

Key factors that delayed progressive rehabilitation

N/A

Outline actions that will be included in the forward program and carried out to minimise disturbance and undertake progressive rehabilitation as far as reasonably practical

N/A

Rehabilitation monitoring and research findings

Rehabilitation monitoring

The rehabilitation monitoring carried out in the annual reporting period

The annual ecological development monitoring program, consisting of vegetation community assessment and fauna surveys, was undertaken in November and December 2023 by independent consultants. The REMP monitoring schedule identified a total of 5 monitoring sites scheduled to be monitored in FY24. Due to character limits in this ARR refer to the FY24 Annual Review for complete results.

Status of performance against rehabilitation objectives and rehabilitation completion criteria

The monitoring program that has been implemented

Updating ROBJs and completion criteria continued in FY24: • ROBJs were submitted to Resources Regulator August 2022 and were rejected in October 2023. ROBJs were revised and resubmitted in February 2024 and rejected in April 2024. ROBJs were resubmitted with minor updates in May 2024 and approved by the Resources Regulator at the end of May 2024. • Updating of the RMP with the approved ROBJs. The annual ecological development monitoring program consists of vegetation community assessment and fauna surveys by independent consultants. The FY24 program highlighted high priority areas, identified invasive species and supported native populations establishing within the mining lease perimeter. The works were in line with initially proposed management procedures and surveyed populations in almost every area of the mine site. The biggest achievement of FY24 by the land management team was the control of exotic grasses and plantings in the VD4/5 to establish Box Gum Woodland. The two pest management programs completed were successful in attracting and controlling target species. Follow up programs will allow trends to be established and confirmation of declining populations onsite.

Are all rehabilitation areas in Landform Establishment phase or higher represented in the monitoring program to assess performance against the rehabilitation objectives and approved or, if not yet approved rehabilitation completion criteria and final landform and rehabilitation plan?

Yes

Year rehabilitation areas will be included as part of the monitoring program

An appraisal of whether rehabilitation is moving towards achieving the proposed rehabilitation objectives, approved or, if not yet approved, rehabilitation completion criteria and final landform and rehabilitation plan as soon as reasonably practicable.

Rehabilitation monitoring undertaken in FY24 compared monitoring results against the draft completion criteria to assess progress. The approved FLRP and Rehabilitation Objectives were included in the June 2024 update of the RMP. The approved FLRP has realigned areas of high standard to reduce re-work. Similarly, the approved ROBJs and completion criteria are aligned with woodland corridor indicators. A review of the RMP TARP is required against the draft rehabilitation objective and rehabilitation completion criteria is required as well as development of QA/QC processes that reflect these is required. In addition to these the announcement of the 2030 cessation of mining at MAC requires a detailed review of the final landform and how that impacts the proposed final landform and rehabilitation plan.

Appraisal description

Rehabilitation is moving towards achieving the final land use as soon as reasonably practicable.

Rehabilitation monitoring program findings

Mt Arthur Coal undertakes annual flora and fauna monitoring to track progress against the BioMP and RMP objectives. The monitoring program tracks the condition of habitat areas over time and ensures that the BioMP's established performance indicators and project approval requirements are being met. The program includes monitoring sites throughout site woodland rehabilitation areas and remnant vegetation areas onsite and within offset areas. Remnant vegetation monitoring sites are used to assess mine impact and natural regeneration, as well providing reference data for comparative assessment of rehabilitation monitoring sites.
The annual ecological development monitoring program results: The following sites were compared to native woodland rehabilitation criteria in FY24: • SDS1: one criterion was 'compliant', one criterion was 'partially compliant' and four criterion were 'not compliant'. Note, SDS1 is no longer in the woodland corridor an will not be assessed against this criteria moving forward. • CD1: three Native Woodland criteria were 'compliant', two criteria were 'partially compliant' and one criterion was 'not compliant'. • VB2: three Box Gum Woodland criteria were 'compliant', two criteria were 'partially compliant' and one criterion was 'not compliant'. VB2 is no longer in the Box Gum Woodland Establishment area and will be assessed against the Native Woodland criteria in future • VB3: three criteria were 'compliant', one criterion was 'partially compliant' and five criteria were 'not compliant'. VB3 is no longer in the Box Gum Woodland Establishment area and will be assessed against the Native Woodland criteria in future • MD1: two criteria were 'compliant', three criteria were 'partially compliant' and one criterion was 'not compliant'. Note, MD1 is no longer in the woodland corridor an will not be assessed against this criteria moving forward. • Dump 11: two criteria were 'compliant', one criterion was 'partially compliant' and three criteria were 'not compliant'. Note, Dump 11 is no longer in the woodland corridor an will not be assessed against this criteria moving forward. Mt Arthur Coal conducted an annual weed assessment in FY24. A site weed action plan was used to inform weed treatment works.

Biodiversity monitoring weed assessment work completed by independent consultants as part of the Rehabilitation and Ecological Monitoring Program and Conservation Agreement monitoring. A whole of site weed survey was also undertaken. Feral animal presence is continually monitored through scheduled inspections and workforce feedback. Information from these sources is used to plan the feral animal control programs across the mine site and all biodiversity offset and conservation areas. The vertebrate pest management program continued during the reporting period, with the annual campaign utilising 1080 baiting to target wild dogs and Pindone baiting for rabbits. Lastly, ongoing monitoring and survey of bulk shape works continued.

Performance issues and their causes including identification of any knowledge gaps that must be addressed

Overall rehabilitation performance issues and their causes preventing rehabilitation from moving towards achieving the final land use at Mt Arthur Coal may be due to: • Historic lack of consistent effort due to campaign based work, contractor performance and availability. Note this has been rectified in FY23 with the commencement of a master rehabilitation contract that includes a dedicated maintenance team; and • Announcement of 2023 cessation of mining reducing life of mine requiring further studies into how this impacts achieving objectives and criteria and FLRPs. MAC improved the quality control and assurance of rehabilitation with the update of the Inspection Test Plans in the MAC-STE-STD-214 Mine Rehabilitation Standard.

Outcomes of rehabilitation research and trials

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS	ON TRACK?
RRT0001004	Growth Medium Trials	Develop standard growth media alternatives to topsoil to: Reduce risk of topsoil deficit; Eleminate the weed seed bank risk in topsoil out competing the native species; and Closing the erosion window	Area 1 Following shaping and gypsum application create a friable seed bed and incorporate gypsum Seed directly to shaped spoil Area 2 Following shaping and gypsum application: Padfoot roller or similar to create a friable seed bed and incorporate gypsum Spread hay to depth of ~3cm Seed directly Area 3 Following shaping and gypsum application: Padfoot roller or similar to create a friable seed bed and incorporate gypsum Application of 50m3/ha of rehab grade compost Spread seed directly	1 Jul 2025	Ongoing	Yes
RRT0001005	Weather Forecasting and Inclusion in Rehabilitation Planning	Mt Arthur Coal are planning to investigate the use of weather modelling to assist in rehabilitation planning.	TBD	1 Jul 2025	Superseded	Yes
RRT0001006	Temporary stabilisation	Trials in the use of surface stabilisation (hay mulch) to reduce short term erosion risks;	Testing various spreading methodologies: - Hay directly to spreader - Hay broken up with excavator pincers then spreader - Trialling other equipment	1 Jul 2025	Superseded	No

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS	ON TRACK?
RRT0001104	Erosion modelling	Determine appropriate erosion limits and monitoring processes.	Engage consultant to produce: - Erosion monitoring results based on remote sensing - Predict erosion risk of rehab surfaces to determine hard limits for rehab	1 Jul 2024	Complete	Yes
RRT0001105	Temporary Stabilisation	Use of hay mulch for surface stabilisation to reduce short term erosion risks (between seed spreading and cover crop germinating).	Refer FY23 Annual Review	1 Jul 2025	Superseded	Yes
RRT0001129	Shallow ripping	Compare shallow ripping of pasture areas to a depth of 200mm compared to 500mm in woodland areas on erosion potential.	An agriplough was utilised in woodland areas where slopes did not extend the operating capacity of the tractor. The steeper woodland areas were dozer ripped. Refer FY24 Annual Review for further details.	1 Jul 2025	Ongoing	Yes

Outcomes of completed trials and research

The results of the completed erosion modelling have been used to establish routine monitoring methodology and works with independent consultants continue to refine the methodology

Attachment 1 – Reporting Definitions

REPORTING CATEGORY		DEFINITION
A1	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.
A2	Underground Mining Area	Underground mining operations areas/subsidence management areas.
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.

REPORTING CATEGORY		DEFINITION
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.
E	Ecosystem and Land Use Development	Rehabilitation has matured to a level where target revegetation outcomes are on a trajectory towards meeting the final rehabilitation objectives and rehabilitation completion criteria (as verified by monitoring). This phase includes infrastructure areas that are to be retained for an approved post mining land use, following completion of all necessary measures to render the infrastructure fit for this purpose (for example structural integrity).
F	Rehabilitation Completion	The NSW Resources Regulator has determined in writing that the mining area has achieved the approved rehabilitation objectives and approved rehabilitation completion criteria and final landform and rehabilitation plan following the submission of *Form: ESF2 Rehabilitation completion and/or review of rehabilitation cost estimate and/or notification of mine or petroleum site closure.*
G	New active disturbance area	The area of any new active disturbance that has been created during the annual reporting period (definition A1 in Table 5).
H	New rehabilitation commenced during annual reporting period	The sum of any new rehabilitation commenced in the annual reporting period. These areas may be in the rehabilitation land preparation phase or the ecosystem & land use establishment phase (definitions C and D in Table 5).
I	Established rehabilitation (hectares)	The total area of land that is verified to be within either the ecosystem and land use development phase or the rehabilitation completion phase (definitions E & F in Table 5).

REPORTING CATEGORY		DEFINITION
J	Annual rehabilitation to disturbance ratio	The rehabilitation to disturbance ratio (H/G) indicates how many hectares of new rehabilitation are undertaken for each hectare of land disturbed during the year. A ratio of 1/1 indicates that the area of new rehabilitation and disturbance in that year are the same.
K	% Rehabilitated land to total mine footprint	The proportion of the total mine footprint (area of land that has been disturbed by past or present surface disturbance activities) that has established rehabilitation (I/A1 x 100). For open cut mining, the proportion of the total mine footprint verified to be "established rehabilitation" should substantially increase as an operation progresses towards mine closure.
L	Established rehabilitation for agricultural final land uses (hectares)	The percentage of total area of land that is verified to be within either the ecosystem and land use development phase or the rehabilitation completion phase (definitions E & F in Table 5) that have been returned to an agricultural final land use.
M	Established rehabilitation for native ecosystem final land uses (hectares)	The percentage of total area of land that is verified to be within either the ecosystem and land use development phase or rehabilitation completion phase (definitions E & F in Table 5) that have been returned to native ecosystem final land use.
N	Established rehabilitation for other/non-vegetated final land uses (hectares)	The percentage of total area of land that is verified to be within either the ecosystem and land use development phase or the rehabilitation completion phase (definitions E & F in Table 5) that have been returned to other/non-vegetated final land use.

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 – Rehabilitation Complaints

DATE	COMPLAINANT	COMPLAINT DETAILS	RESPONSE DETAILS	STATUS OF RESPONSE	DATE RESPONSE COMPLETED (IF APPLICABLE)

Attachment 4 – Stakeholder consultation

DATE	STAKEHOLDER	CONSULTATION ACTIVITIES AND FORMS	MATTERS SUBJECT TO CONSULTATION	ACTIONS TAKEN
23 May 2024	NSW Resources Regulator	Site inspection.	Targeted Assessment Program – Revegetation.	RR's Recommendations outlined in Letter LETT0009133 from Matthew Newton dated 24 June 2024.
9 Aug 2023	Community Consultative Committee	Meeting	Mt Arthur provided operational (land and rehabilitation) updates to CCC members. Updates are documented in the pre-read, and Minutes available on website.	No actions during the reporting period relating to rehabilitation management plan or forward program.
14 Sep 2023	DPE Water	RMP Consultation	RMP feedback.	Feedback addressed in RMP Version 4.0 September 2023.
18 Nov 2023	Community Consultative Committee	Meeting	Mt Arthur provided operational (land and rehabilitation) updates to CCC members. Updates are documented in the pre-read, and Minutes available on website.	No actions during the reporting period relating to rehabilitation management plan or forward program.
22 Nov 2023	Muswellbrook Shire Council	RMP Consultation	RMP feedback.	Feedback addressed in revised versions of the RMP.
8 Feb 2024	Community Consultative Committee	Meeting	Mt Arthur provided operational (land and rehabilitation) updates to CCC members. Updates are documented in the pre-read, and Minutes available on website.	No actions during the reporting period relating to rehabilitation management plan or forward program.

Attachment 5 – Plans

MAC_AnnualReview_RehabPlan.pdf

MAC_Plan1B_CurrentLandformContours.pdf