NSW GOVERNMENT

NSW Resources Regulator

FWP0001464

MT ARTHUR COAL FORWARD PROGRAM

Monday 1 July 2024 to Wednesday 30 June 2027

Summary

DETAIL	
Mine	Mt Arthur Coal
Reference	FWP0001464
Forward program commencement date	Monday 1 July 2024
Forward program end date	Wednesday 30 June 2027
Forward program revision (if applicable)	
Contact	Jonathon Deacon
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)
Project location	HUNTER VALLEY ENERGY COAL PTY LTD
Date of submission	Tuesday 3 September 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

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).

Description of surface disturbance activities

Exploration activities

Exploration activities may be undertaken on Mining Act Authorities covered by this plan. These activities may include techniques allowed by these authorities. An exploration drilling program may be undertaken on a campaign basis and subject to operational requirements throughout this AFP period. All exploration boreholes on Mining Leases will be drilled following ecological and cultural heritage (Aboriginal and European) due diligence inspections, with any other relevant approvals obtained prior to commencement of drilling works. Activities on Exploration licences will be undertaken as required by the Licence conditions.

Construction activities

Construction of infrastructure to support the open cut development will continue during this period. The major activities proposed during this period include: • Ongoing construction of temporary and permanent erosion sediment control structures will be constructed in this AFP period associated with works relating to Hunter River Discharge Improvements, expansion of the overburden emplacement area (OP1N), relevant haul roads. • Additional mine infrastructure as part of ongoing upgrades consistent with existing approvals including fill stands, crib huts, maintenance pads and light vehicle roads and tracks. • The installation of additional/ or upgraded mine infrastructure - to improve tailings deposition and TSF future rehabilitation works, for noise, dust and water monitoring and telecommunications will occur on-lease and off-lease. • Study commencing on Stage 2 Phase C and Stage 3 – Tailings lift to

raise the southwest valley TSF wall and the West Cut void TSF wall to sustain tailings capacity for 2030 end-of life. • The construction, relocation, and/or removal of substations and power lines. Approximately 13.6 million tonnes of reject material will be produced from the CHPP during this AFP period. Coarse reject material will continue to be co-disposed within overburden emplacement areas or utilised in the construction of stockpile pads, roads or other infrastructure

Mining schedule

Mining development method and sequencing and general mine features.

Mining will occur within the extended pit shell of Mt Arthur including Windmill, Calool, Roxburgh and Ayredale pits. During this two-year term, approximately 45 million tonnes of ROM coal is planned to be mined using truck and shovel and/or excavator methods for an equivalent 31 million tonnes of product coal. This method is consistent with current and previous site open cut operations. Prior to excavation of a new open cut strip, pre-stripping operations ensure that natural resources such as vegetation and topsoil are cleared and, where appropriate, recovered for subsequent use in post-mining rehabilitation. Rock strata overlying coal resources (overburden) is drilled and blasted to fracture the rock and facilitate overburden excavation. Hydraulic excavators and electric rope shovels then excavate and load blasted overburden into large haul trucks. These trucks transport the overburden material to designated emplacement areas. After removing the overburden, the exposed coal seam is mined using hydraulic excavators and loaders. The ROM coal extracted is delivered by haul trucks to either the hopper bins that feed into the CHPP or to the ROM coal stockpiles. After crushing to size and processing to remove impurities, coal is stockpiled prior to transport from site by rail.

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

Overburden emplacement areas that will be utilised during this period include: •Visual Dump 5 (VD5) • Contingency Dumps 1 – 5 (CD1-5) • Saddlers Dump 1-3 (SD1-3) • Belmont Void • Out of Pit Dumps (OOPD) (Previously known as southwest Overburden emplacement area) • Tailings Emplacement Expansion walls • Conveyor Corridor Overburden Emplacement Area • Ayredale Pit With the exception of the tailings emplacement expansion walls, these emplacement areas are designed by mine planning engineers. The extended tailings emplacement walls were designed by an external consultant. Survey control during emplacement is undertaken by the surveyor teams, under the direction of mine planners. Operational management of the emplacements is undertaken by mine Open Cut Examiners (OCE), who supervise overburden placement. Overburden emplacement design incorporates considerations such as capacity, access, shape, and lift height, as well as safety and environmental constraints. Emplacement areas are constructed with positive drainage to ensure emplacements shed water away from the active pit. North Pit emplacements (VD5 and CD1-5) approximate level of RL 360m to create visual relief.

Emplacement design and construction also incorporates hostile material management considerations. Temporary stabilisation activities include the aerial seeding of long-term overburden emplacement areas for dust-suppression purposes.

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

Coal handling and processing is undertaken within the centralised coal handling and preparation plant (CHPP) located within Mining Lease ML1487. ROM coal extracted by the approved open cut operations is delivered by truck to either the ROM coal bins or the CHPP ROM coal stockpile. Following processing at the CHPP, coal is loaded onto trains via the rail loading facility for delivery to the export market. Approximately 13.6 million tonnes of reject material will be produced from the CHPP during this period. Coarse reject material will continue to be co-disposed within overburden emplacement areas or utilised in the construction of stockpile pads, roads or other infrastructure. Fine reject (tailings) will continue to be pumped from the CHPP to the existing approved Tailings Storage Facility (TSF). MAC is planning to commence the implementation of actions to prepare for the future capping of the TSF's as soon as practically possible.

Waste disposal and materials handling operations.

MAC's waste management system has been designed to minimise the generation of waste, maximise reuse and recycling, and meet regulatory requirements. This system consolidates the disposal, tracking and reporting of all waste generated on site. Waste generated as part of MAC's mining activities is sent off site for management. Recycled waste represents approximately 85 per cent of total waste generated. All hydrocarbon handling and storage areas (i.e., diesel storage areas and fill points) are appropriately designed and constructed, incorporating sealed concrete surfaces, bunding and oily water separators, where required. The Contaminated Land Management procedure also outlines the requirements for investigating, reporting, handling, and treating contaminated land. Small volumes of hydrocarbon contaminated material are recovered and disposed of via the regulated waste management system or remediated at the onsite bioremediation facility.

Key production milestones

MATERIAL	UNIT	YEAR 1	YEAR 2	YEAR 3
Stripped topsoil (if applicable)	(m^3)	275	1	0
Rock/overburden	(m^3)	133,000	128,000	0
Ore	(Mt)	21.4	23.2	0
Reject material[1]	(Mt)	6.4	7	0
Product	(Mt)	15	16.2	0

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

Three-year rehabilitation forecast

Rehabilitation planning schedule

Rehabilitation planning schedule

Over the next two years Rehabilitation activities will focus on the Out Of Pit Dump areas, Visual dumps, Saddlers and Drayton. The estimated schedule for existing rehabilitation maintenance and ongoing improvement works are detailed and tracked in the Mt Arthur Annual Review. Although all these activities are planned to be completed, they are dependent on weather and completion of emplacements to be ready for rehabilitation and therefore should be used as a guide. Actual rehabilitation is provided in the Annual Review. The final landform approved by the Project Approval is necessarily high level and conceptual. HVEC has identified the potential for future changes to final landform, arising from mining to date and the proposed modification of the Project Approval to extend mining operations until 30 June 2030.

Stakeholder consultation

MAC continues to undertake consultation for MP09_0062 MOD 2. MAC regularly engages with local stakeholders regarding proposed operations, including community engagement programs and opportunities. This engagement includes: The operation of a 24-hour free call community response line to allow the community to contact the operation directly; Access to information including approvals, environmental management and monitoring reports on a publicly accessible website; Regular CCC meetings to provide an interface between the community, mine management and the relevant government departments. The community representatives on the CCC are able to share information from CCC meetings with the wider community and to report back on community issues at CCC meetings; Regular community contact with local Aboriginal stakeholders and stakeholder groups in relation to Aboriginal archaeology and cultural heritage; The MAC Investment Fund which provides financial and in-kind support to local not-for-profit organisations and partners with community development programs; Regular attendance at monthly meetings of Muswellbrook Chamber of Commerce and Industry Inc, of which Mt Arthur Coal is an active member, to support local business houses and industry; and Participation in the UHMD, coordinated by the NSW Minerals Council to address cumulative impacts from mining in the Upper Hunter and identify opportunities for improved management and innovation.

Rehabilitation studies, risk assessments and/or design work

Acid Mine Drainage Standard - BHP's Mine Materials Standard is an internal BHP standard that aims to develop a consistent simple, and sustainable global AMD management approach. Species list - MAC continually reviews and updates the applied seed mix listed in the RMP to increase success of rehabilitation. Weather Forecasting and Inclusion in Rehabilitation

Planning - Undertaking rehabilitation in favourable weather conditions could lead to improved success rate of vegetation establishment and development. Landscape Evolution Model - A review of the legacy rehabilitation areas is proposed by Mt Arthur Coal to determine any risks associated with long-term stability. Should any legacy rehabilitation areas be identified as a risk, they will be included in the development of a Landscape Evolution Model. Topsoil Balance and Growth Medium Trials - A review of the legacy rehabilitation areas is proposed by Mt Arthur Coal to determine any risks associated with long-term stability. Should any legacy rehabilitation areas be identified as a risk, they will be included in the development of a Landscape Evolution Model. Temporary stabilisation - Mulch will be trialled as a temporary erosion control measure while in the ecosystem establishment phase. Erosion methodologies and modelling - erosion quantification methodology using high-density LiDAR data and hydrological modelling to quantify the length and depth of rilling.

NSW Resources Regulator

Rehabilitation research and trials

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS
FWP0001464					

Rehabilitation maintenance and corrective actions

MAC will continue to implement vertebrate pest management programs on site. Improvements in the management of additional pest animal species will be a particular focus, with expanded shooting, trapping and baiting programs to be completed to include rabbits, goats and pigs. Refer to the Annual Review for a detailed description of all TARP responses.

Rehabilitation schedule

During this three year period, MAC will continue to undertake progressive rehabilitation of the site and perform routine monitoring and maintenance. General rehabilitation, land management and biodiversity enhancement activities will also continue over previously rehabilitated areas including: - Rehabilitation and ecological monitoring; -Detailed soil assessments to track the development growth media development/of soil profiles and feed into understanding what rehabilitation has been successful; -Weed assessments to enable more targeted weed control; and -Areas targeted for maintenance and improvement works. Detailed mine closure planning will continue. MAC also continue to apply for Modification 2 for MP09_0062.

Subsidence remediation for underground operations

Although MAC is located within the Muswellbrook Mine Subsidence district, there is no recent history of mine subsidence within MAC mine leases. As a result, subsidence is not predicted to impact on mining or rehabilitation activities.

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)	6,033.26	6,033.34	6,061.88
B	**Total active disturbance**	(ha)	4,692.1	4,551.34	4,442.72
P	**Total new area of land proposed for active rehabilitation**	(ha)	99.25	240.09	377.25

Rehabilitation key performance indicators (KPIs)

	FORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
O	**Total new active disturbance area**	(ha)	150.51	0.08	28.54
P	**Total new area of land proposed for active rehabilitation during the reporting period**	(ha)	99.25	140.85	137.16
Q	**Annual rehabilitation to disturbance ratio**		0.66	1,795.25	4.81

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

MAC_ForwardPlan_Plan2A_FY25.pdf

MAC_ForwardPlan_Plan2B_FY26.pdf

RE_ AREQ0057327 _ Mt Arthur Coal - ARRFP forecast year FY27 From_ Jonathon.Deacon@bhp.com.pdf

ML1757
DENMAN ROAD
EDINGLASSIE
BALMORAL CORNER
BLACK HILL
TRESCO PARK
WHITES CREEK
QUARRY CREEK
ML1487
ML1655
EL5965
ML1548
MPL263
CCL744
CL396
ML1739
ML1739
ML1739
ML1739
ML1548
EDDERTON ROAD
MOUNT ARTHUR
ML1358
ML1593S
EL5965
ML1593
EL5965
EL5965
EL5965
Saddlers Creek

LEGEND

- Mining Lease

Disturbance

- Active Mining Area (Open cut void)
- Overburden Emplacement Area
- Rehabilitation
- Infrastructure Area
- Topsoil Stockpile
- Water Management Area
- Tailings Storage Facility
- Undisturbed
- FY25 Changes

BHP
Mapping Services Brisbane

0 500 1,000 1,500 2,000 m
Transverse Mercator Projection.
MGA Zone 56. GDA2020 Datum.

MOUNT ARTHUR COAL

YEAR 1 (FY25) MINING AND REHABILITATION FORECAST

Submission ID Number: 1320 (Mt Arthur Coal, Forecast Data Year 1)

Drawn: B. Kleinschmidt | Checked: K. Hargrave | Date: 8/08/2024 | Version: 3

Plan 2A

Document Path: C:\Users\kleib93\OneDrive - BHP\Documents\ArcGIS\Projects\MAC_ForwardProgram_2024\MAC_ForwardProgram_2024.aprx

ML1757
ML1487
ML1655
ML1548
MPL263
CCL744
CL396
ML1739
ML1739
ML1739
ML1739
ML1548
ML1358
ML1593S
ML1593
EL5965
EL5965
EL5965
EL5965
EL5965
DENMAN ROAD
EDDINGTON ROAD
EDINGLASSIE
BALMORAL
BLACK HILL
MOUNT ARTHUR
TRESCO PARK
Saddlers Creek

LEGEND

- Mining Lease

Disturbance

- Active Mining Area (Open cut void)
- Overburden Emplacement Area
- Rehabilitation
- Infrastructure Area
- Topsoil Stockpile
- Water Management Area
- Tailings Storage Facility
- Undisturbed
- FY26 Changes

0 500 1,000 1,500 2,000 m

Transverse Mercator Projection.
MGA Zone 56. GDA2020 Datum.

BHP
Mapping Services Brisbane

MOUNT ARTHUR COAL

YEAR 2 (FY26) MINING AND REHABILITATION FORECAST

Submission ID Number: 1320 (Mt Arthur Coal, Forecast Data Year 2)

Drawn: B. Kleinschmidt | Checked: K. Hargrave | Date: 8/08/2024 | Version: 3

Plan 2B

Document Path: C:\Users\kleib93\OneDrive - BHP\Documents\ArcGIS\Projects\MAC_ForwardProgram_2024\MAC_ForwardProgram_2024.aprx

MAC-ENC-MTP-052

Mt Arthur Coal: Forward Program

Mt Arthur Coal Mining Operations Plan Lease Block	
Name of Mine:	Mt Arthur Coal
Commencement Date:	1 August 2024
Completion Date:	30 June 2026
Mining Authorisations (Lease/License No.):	CCL 744, CL 396, ML 1358, ML 1487, ML 1548, ML 1593, ML 1655, MPL 263, A 437, EL 5965, Sublease CL 229, ML 1757, ML 1739, Sublease CL 395
Name of Authorisation / Lease Holder:	Hunter Valley Energy Coal Pty Ltd Mt Arthur Coal Pty Limited
Name of Mine Operator:	Mt Arthur Coal Pty Limited
Name and Contact Details of the Mine Manager (or equivalent):	Grant Clouten, General Manager Mt Arthur Coal Thomas Mitchell Drive Muswellbrook NSW 2333 Ph: 02 6544 5980 Email: grant.clouten@bhp.com
Version 7.0 – August 2024	Mt Arthur Coal - Forward Program FY25 – FY26

MAC-ENC-MTP-052

Mt Arthur Coal: Forward Program

Key contacts

Action	Person	Title
Rehabilitation Planning	William Ringland	Manager Technical Services
Rehabilitation Governance	Sarah Bailey	Manager Approvals Land Access, Heritage & Environment
Document Owner	Karlee Hargrave	Superintendent Midterm Planning
Document Approver	Grant Clouten	General Manager

MAC-ENC-MTP-052

Mt Arthur Coal: Forward Program

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Mt Arthur Coal: Forward Program

Intent

The intent of this Annual Forward Program (AFP) is to allow continued mining operations at Mt Arthur Coal, for the Mt Arthur Coal Modification Project PA 09_0062 MOD 1. This AFP provides information pertaining to operating philosophy, mining method, and rehabilitation management and reporting, water management and environmental management associated with current operations.

Other consents, approvals or permissions may be required depending on the nature and scale of the activities, the location and the associated environmental risks. These may include, but are not limited to:

- an environment protection licence under the Protection of the Environment Operations Act 1997 regulating noise, air, water and waste;
- licences or approvals under the Water Management Act 2000 or the Water Act 1912, for activities or works that take, divert or use water; and
- approvals for actions likely to have a significant impact on a matter of national environmental significance under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999.

The lease holder remains responsible for ensuring that all operations, including the rehabilitation of the land, are completed in compliance with the conditions of the mining lease, as well as the conditions of other relevant approvals such as the development consent.

Mining, overburden emplacement and infrastructure areas may be brought forward from any year during the Forward Program period, dependent on mine schedule requirements. Extraction to date has been occurring at a lesser intensity than the maximum rate of extraction authorised by the Project Approval. As a result, the progress of mining shows a different edge of footprint and rehabilitation progression. Actual disturbance and rehabilitation are reported annually in the Annual Review and Annual Rehabilitation Report.

While this AFP relates the mining operations as currently approved by the Project Approval, HVEC has applied to modify the Project Approval so as to extend the period of mining operations until 30 June 2030, and to make necessary amendments including to the final landform reflective of mining to date and the proposed extension to 2030.

Application

This Plan applies to the following Mt Arthur Coal representatives:

- All BHP employees and contract staff
- All Partnering contractor company representatives
- All Subcontractor company representatives.

Abbreviations

AFP	Annual Forward Program
BCM	Bank cubic metres
BMP	Biodiversity Management Plan
CCL	Consolidated coal lease
CHPP	Coal handling preparation plant
CL	Coal lease

EL	Exploration licence
EPA	NSW Environment Protection Authority
EP&A Act	Environmental Planning and Assessment Act 1979
EPBC	Environment Protection and Biodiversity Conservation
EPL	Environment Protection Licence
EMS	Environmental Management System
ESCP	Erosion and Sediment Control Plan
FY	Financial year
HA	Hectares
HSE	Health, Safety and Environment
HVEC	Hunter valley Energy Coal (MT Arthur Coal)
ISO	International Standards Organisation
LGA	Local government area
MAC	Mt Arthur Coal
ML	Mining lease
MOP	Mining Operations Plan
MPL	Mining purpose lease
MSC	Muswellbrook Shire Council
Mtpa	Million tonnes per annum
NGO	Non-government organisation
NSW	New South Wales
PA	Project Approval
RAP	Remedial Action Plan
RCE	Rehabilitation Cost Estimate
RMP	Rehabilitation Management Plan
ROM	Run of Mine

Definitions

- **Hunter Valley Energy Coal Pty Ltd -** operates the Mt Arthur Coal Complex which consists of the approved open cut mining operations, a rail loop and associated rail loading facilities (PA 09_0062) and the Mt Arthur Underground Project (PA 06_0091),
- **The Project Approval -** Project Approval (PA 09_0062) MOD 1 Mt Arthur Coal Mine – Open Cut Modification Project dated 26 September 2014.
- **Mine Operations Plan –** The combination of the Annual Forward Program and the Rehabilitation Management Plan
- **The Annual Forward Program -** a program that specifies all rehabilitation, monitoring and related activities on, in, under or over the Land for the next 2 years.
- **Rehabilitation Management Plan (RMP) -** The Rehabilitation Management Plan approved under Condition 44 of the Mt Arthur Coal Modification Project PA 09_0062 MOD 1 under Section 75W of the Environmental Planning and Assessment Act 1979 (EP&A Act). Condition 44 requires the project proponent to prepare and implement a Rehabilitation Management Plan for the Project.

1 Two-year mining activities forecast

1.1 Project Description

Hunter Valley Energy Coal Pty Ltd (HVEC) operates Mt Arthur Coal (MAC), which consists of an approved open cut and underground mining operation, a rail loop and associated rail loading facilities. The MAC Mine is located approximately 5 kilometres southwest of Muswellbrook within the Muswellbrook Shire Local Government Area (LGA) in the Upper Hunter Valley of NSW. The location of MAC is shown in Plan 1A.

MAC is an open cut coal mine operating with trucks and shovels to extract up to 32Mtpa of ROM coal. The majority of coal is crushed and washed, prior to export markets. MAC has development consent approval to operate until 30 June 2026. An application to modify MAC Project Approval (MOD 2) to continue operations for an additional four years until 2030 has been submitted and is currently in assessment phase. The general sequence and staging of mining operations over the life of the operation will be consistent with the methods described in Section 1.2.3.

MAC operates under a modified Project Approval (PA 09-0062 MOD 1). The Project Approval can be found at the following website https://www.bhp.com/sustainability/environment/regulatory-information. The Project Approval currently authorises mining operations at MAC until 30 June 2026. HVEC is seeking approval to continue mining operations at MAC until 30 June 2030, by modifying the Project Approval.

1.2 Description of Activities

1.2.1 Exploration

Exploration activities may be undertaken on Mining Act Authorities cover by this plan. These activities may include techniques allowed by these authorities.

An exploration drilling program may be undertaken on a campaign basis and subject to operational requirements throughout this AFP period. All exploration boreholes on Mining Leases will be drilled following ecological and cultural heritage (Aboriginal and European) due diligence inspections, with any other relevant approvals obtained prior to commencement of drilling works. Activities on Exploration licences will be undertaken as required by the Licence conditions.

1.2.2 Construction

Construction of infrastructure to support the open cut development will continue during this AFP period. The major activities proposed during this AFP period include:

- Ongoing construction of temporary and permanent erosion sediment control structures will be constructed in this AFP period associated with works relating to Hunter River Discharge Improvements, expansion of the overburden emplacement area (OP1N), relevant haul roads.
- Additional mine infrastructure as part of ongoing upgrades consistent with existing approvals including fill stands, crib huts, maintenance pads and light vehicle roads and tracks.
- The installation of additional/ or upgraded mine infrastructure - to improve tailings deposition and TSF future rehabilitation works, for noise, dust and water monitoring and telecommunications will occur on-lease and off-lease.
- Study commencing on Stage 2 Phase C and Stage 3 – Tailings lift to raise the southwest valley TSF wall and the West Cut void TSF wall to sustain tailings capacity for 2030 end-of life.
- The construction, relocation, and/or removal of substations and power lines.

- Final capping works and ongoing rehabilitation of the North cut tailings dam combined with improvement works for Main dam and decommissioning of Dam 4 will continue in the AFP period.
- Drilling program to characterise material within site tailing storage facilities.

1.2.3 Mining Operations

During this AFP period, mining will occur in the Windmill, Calool, Roxburgh and Ayredale pits. Mining has occurred at a lesser intensity than the maximum rate of extraction approved by the Project Approval. Overburden was placed on the Conveyor Corridor, CD areas, VD areas, Saddlers North and Out Of Pit Dumps area.

During this two-year term, approximately 45 million tonnes of ROM coal is planned to be mined using truck and shovel and/or excavator methods for an equivalent 31 million tonnes of product coal. This method is consistent with current and previous site open cut operations.

During this AFP period, mining is proposed to continue within the extended pit shell of Mt Arthur, consisting of:

- Windmill Pit;
- Calool Pit;
- Roxburgh Pit;
- Ayredale Pit;

Prior to excavation of a new open cut strip, pre-stripping operations ensure that natural resources such as vegetation and topsoil are cleared and, where appropriate, recovered for subsequent use in post-mining rehabilitation. Rock strata overlying coal resources (overburden) is drilled and blasted to fracture the rock and facilitate overburden excavation. Hydraulic excavators and electric rope shovels then excavate and load blasted overburden into large haul trucks. These trucks transport the overburden material to designated emplacement areas.

After removing the overburden, the exposed coal seam is mined using hydraulic excavators and loaders. The ROM coal extracted is delivered by haul trucks to either the hopper bins that feed into the CHPP or to the ROM coal stockpiles. After crushing to size and processing to remove impurities, coal is stockpiled prior to transport from site by rail.

The general sequence of mining used at MAC is shown in Figure 1.

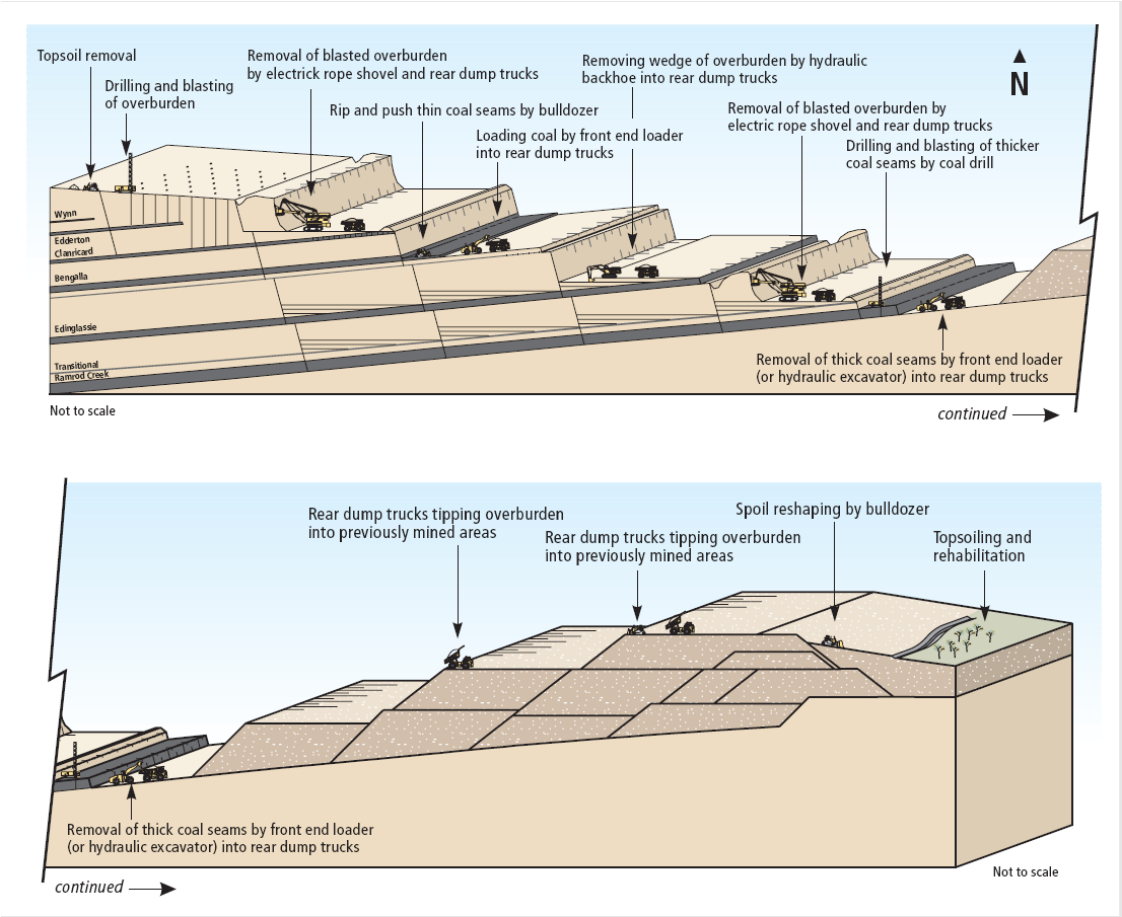

Figure 1: Mining sequence from topsoil removal to rehabilitation

1.2.4 Overburden Emplacement

During this two-year term approximately 166 million bank cubic metres of overburden has been identified for transportation and placement by dump trucks. Emplacement areas are generally located within the open cut pit shell on the low wall side of the active pit. However, there will be movement to HW (Belmont, OP1N and SD) dumps. Overburden emplacement areas that will be utilised during this AFP period include:

- Visual Dump 5 (VD5)
- Contingency Dumps 1 – 5 (CD1-5)
- Saddlers Dump 1-3 (SD1-3)
- Belmont Void
- Out of Pit Dumps (OOPD) (Previously known as southwest Overburden emplacement area)
- Tailings Emplacement Expansion walls
- Conveyor Corridor Overburden Emplacement Area
- Ayredale Pit

With the exception of the tailings emplacement expansion walls, these emplacement areas are designed by mine planning engineers. The extended tailings emplacement walls were designed by an external consultant. Survey control during emplacement is undertaken by the surveyor teams, under the direction of mine planners. Operational management of the emplacements is undertaken by mine Open Cut Examiners (OCE), who supervise overburden placement.

Overburden emplacement design incorporates considerations such as capacity, access, shape, and lift height, as well as safety and environmental constraints. Emplacement areas are constructed with positive drainage to ensure emplacements shed water away from the active pit. North Pit emplacements (VD5 and CD1-5) approximate level of RL 360m to create visual relief. Emplacement design and construction also incorporates hostile material management considerations.

1.2.5 Processing Residues and Tailings

Coal handling and processing is undertaken within the centralised coal handling and preparation plant (CHPP) located within Mining Lease ML1487. ROM coal extracted by the approved open cut operations is delivered by truck to either the ROM coal bins or the CHPP ROM coal stockpile. Following processing at the CHPP, coal is loaded onto trains via the rail loading facility for delivery to the export market.

Approximately 13.6 million tonnes of reject material will be produced from the CHPP during this AFP period. Coarse reject material will continue to be co-disposed within overburden emplacement areas or utilised in the construction of stockpile pads, roads or other infrastructure. Fine reject (tailings) will continue to be pumped from the CHPP to the existing approved Tailings Storage Facility (TSF).

MAC will continue the flocculation we of the MAC TSF during this Forward Program period.

1.2.6 Waste Management

MAC's waste management system has been designed to minimise the generation of waste, maximise reuse and recycling, and meet regulatory requirements. This system consolidates the disposal, tracking and reporting of all waste generated on site. Waste generated as part of MAC's mining activities is sent off site for management.

All hydrocarbon handling and storage areas (i.e., diesel storage areas and fill points) are appropriately designed and constructed, incorporating sealed concrete surfaces, bunding and oily water separators, where required. The Contaminated Land Management procedure also outlines the requirements for investigating, reporting, handling, and treating contaminated land. Small volumes of hydrocarbon contaminated material are recovered and disposed of via the regulated waste management system or remediated at the onsite bioremediation facility.

1.2.7 Material Production Schedule during Forward Program Term

The indicative material production schedule during this Forward Program period is presented in Table 1. Material movement can vary depending on efficiency of mining and production constraints.

Table 1: Material production schedule during the AFP term

Material	Unit	Past FY24 (July 2023 – June 2024)	Year 1 FY25 (July 2024 – June 2025)	Year 2 FY26 (July 2025– June 2026)
Topsoil Stripping	kBCM	TBD	275	<1
Prime Rock / Overburden	kBCM	136,000	133,000	128,000
ROM Coal	Mt	22.2	21.4	23.2
Reject Material	Mt	6.8	6.4	7
Product	Mt	15.4	15.0	16.2

1.2.8 Water Management

Existing structures will be maintained to support the segregation and diversion of clean water, and control sediment-laden run-off prior to release. Existing sediment control structures may also require modification or upgrade, and the installation of additional sediment control structures may also be required as open cut mining and dump development progresses within the AFP disturbance boundary in accordance with the Mt Arthur Erosion and Sediment Control Plan (ESCP). As a result of a risk evaluation improvement works have been undertaken at Main Dam works have included upgrading pumping systems to increasing the dewatering capacity.

The Drayton Void, MacDonalds and Saddler's pits, along with temporary storages in active pits, would also be used as mine water storages to provide a flexible water network system for to ensure site water security and flood storage capacity. As a result of risk evaluation, a pipeline de-risking project has been completed during the previous AFP period. This work included a minor diversion of the upper section and Whites creek diversion into the Dirty Water Dam, installation of new pipelines, diversion and containment drains and re-routing of existing lines.

1.2.9 Decommissioning and Demolition Activities

With proposed cessation of tailing dams, the deposition in the tailings dam will be expanded in line with the 2030 mine closure. The North Cut Tailings Dam and Dam 4 have been decommissioned, capping is complete and rehabilitation underway. Proposed demolition of the dragline present on site will occur during the AFP period.

2 Two Year Rehabilitation Forecast

2.1 Rehabilitation Planning Activities

During this two-year period, MAC will continue to undertake progressive rehabilitation of the site including supplementary planting of targeted rehabilitated areas with native woodland species, to expand the area of woodland rehabilitation. The supplementary woodland areas will focus on steep areas less suitable for grazing. General rehabilitation, land management and biodiversity enhancement activities will also continue over previously rehabilitated areas as shown in Figures 2 and 3, including:

- Rehabilitation and ecological monitoring;
- Detailed soil assessments of existing rehabilitation to track the development growth media development/of soil profiles and feed into understanding what rehabilitation has been successful;
- Weed assessments to enable more targeted weed control;
- Pest animal control programs;
- Supplementary tube stock planting during suitable weather;
- Habitat enhancement through placement of stag trees and piling of thinned timber;
- Trials in the use of surface stabilisation (mulch) to reduce short term erosion risks; and
- Trials in the use of alternative growth media.

Areas targeted for maintenance and improvement works will focus on externally facing dump areas across site as well as improvements to the VD1 dump which faces Muswellbrook

2.2 Rehabilitation Schedule

Over the next two years Rehabilitation activities will focus on the Out Of Pit Dump areas, Visual dumps, Saddlers and Drayton. The estimated schedule for existing rehabilitation maintenance and ongoing improvement works are detailed and tracked in the Mt Arthur Annual Review. Although all these activities are planned to be completed, they are dependent on weather and completion of emplacements to be ready for rehabilitation and therefore should be used as a guide. Actual rehabilitation completed is provided in the Annual Review.

The final landform approved by the Project Approval is necessarily high level and conceptual. HVEC has identified the potential for future changes to final landform, arising from mining to date the proposed modification of the Project Approval to extend mining operations until 30 June 2030.

2.3 Subsidence Remediation for Underground Operations

Although MAC is located within the Muswellbrook Mine Subsidence district, there is no recent history of mine subsidence within MAC mine leases. As a result, subsidence is not predicted to impact on mining or rehabilitation activities.

2.4 Temporary Stabilisation

Temporary stabilisation activities include the aerial seeding of long-term overburden emplacement areas for dust-suppression purposes as required. Emplacement surfaces targeted as part of the aerial seeding program are those most susceptible to prevailing winds, and not available for final rehabilitation in the short to medium term. A pasture seed and fertiliser mix is aerially applied to the targeted emplacement surfaces. Dump faces that are planned to be exposed for greater than 12 months are eligible to be seeded. Areas previously seeded will be inspected to determine if additional cover is required.

An alternative temporary stabilisation option is being investigated for new rehabilitation.

3 Plan 2 – Mining and Rehabilitation 2 Yearly Forecast

The following figures show the progression of mining and rehabilitation for MAC for the period FY25 and FY26. Mining, overburden emplacement and infrastructure areas may be brought forward from any year during the Forward Program period, dependent on mine schedule requirements. Extraction to date has been occurring at a lesser intensity than the maximum rate of extraction authorised by the Project Approval. Actual disturbance and rehabilitation are reported annually in the Annual Environmental Management Review.

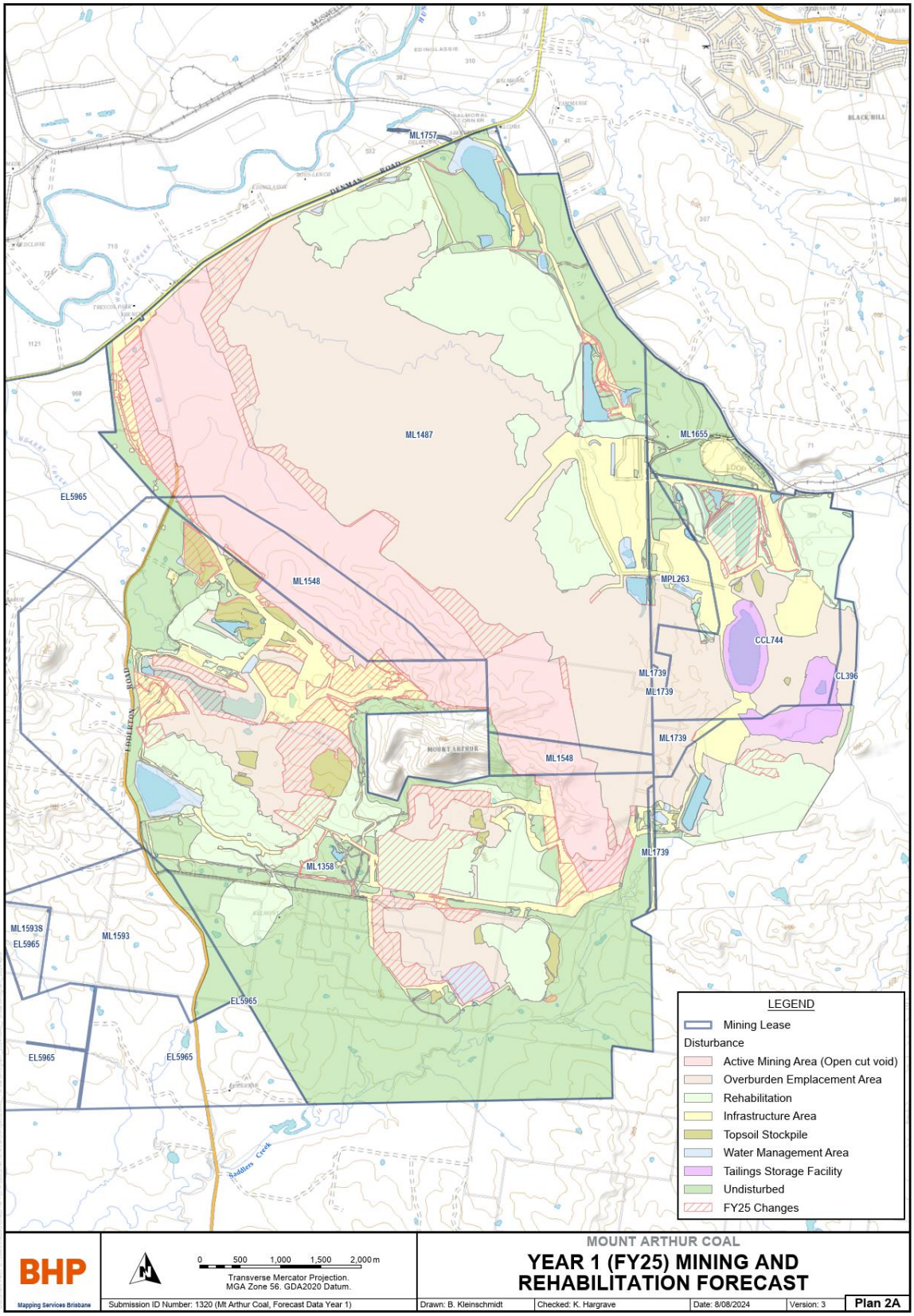

Figure 2. Plan 2A – Indicative FY25 Mining and Rehabilitation

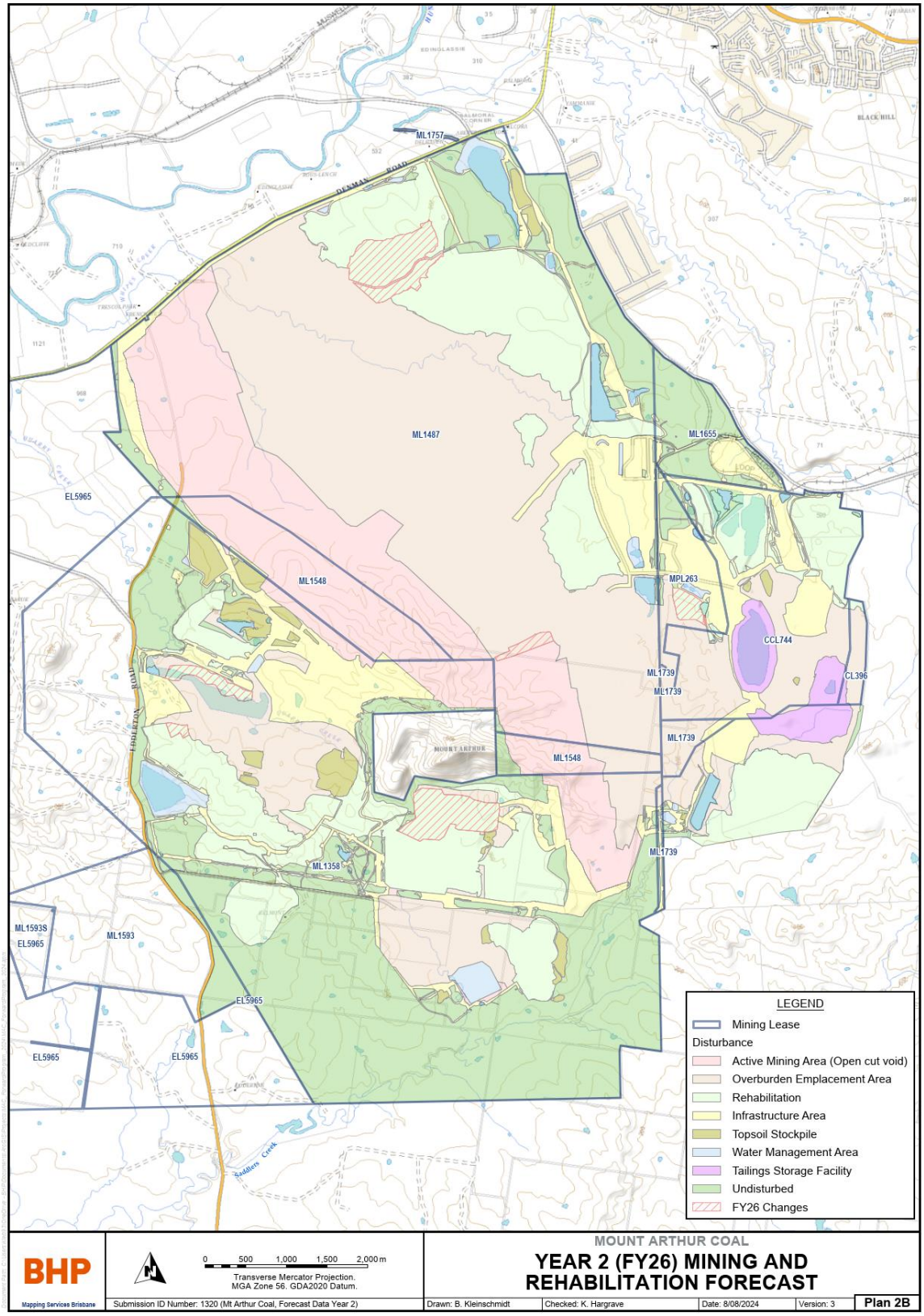

Figure 3. Plan 2B – Indicative FY26 Mining and Rehabilitation

4 Progressive Mining and Rehabilitation Statistics

4.1 Two Yearly Forecast Cumulative Disturbance and Rehabilitation Progression

During this AFP period, MAC will continue to undertake progressive rehabilitation of the site. This will include the reshaping and seeding of 295 ha. Disturbance and rehabilitation progression during the two-year term is presented in Table 2. Mining, overburden emplacement and infrastructure areas may be brought forward from any year during the Forward Program period, dependent on mine schedule requirements. Extraction to date has been occurring at a lesser intensity than the maximum rate of extraction authorised by the Project Approval. Actual disturbance and rehabilitation is reported annually in the Annual Environmental Management Review.

Table 2: Predicted cumulative disturbance and rehabilitation progression during the next 2-year term

Year	Total Disturbance Footprint - Surface Disturbance (ha)	Underground mining area (ha)	Total Active Disturbance (ha)	Rehabilitation Land Preparation (ha)	Ecosystem & Land Use Establishment (ha)
End FY25 (30 Jun 2025)	6019	0	4717	145	145
End FY26 (30 Jun 2026)	6019	0	4567	150	150

4.2 Rehabilitation Key Performance Indicators

The rehabilitation to disturbance ratio is presented in Table 3. Rehabilitation over the Forward Program period will be focused on The Out Of Pit Dumps, the Visual Dumps, Drayton and Saddlers.

Table 3: Progressive rehabilitation key performance indicators during the two-year term

Year	Total New Active Disturbance Area (annual)	Area of Land Proposed for Active Rehabilitation (annual)	Rehabilitation to Disturbance Ratio (annual)
End FY25 (30 Jun 2025)	181	145	0.8
End FY26 (30 Jun 2026)	0.08	150	1877

Appendix 1: Document Control

Amendment History			
Date	**Version**	**Page**	**Details**
May 2017	1.0	All	New two year MOP for FY18 and FY19
November 2017	1.1	13, 17, 43, 49, 108	Amendment to include Conveyor corridor dump, Saddlers Mining and Ayredale infrastructure. MOP Plans 3A – E and Plan 4 have been updated.
August 2018	1.2	1, 8, 9, 18, 44, 46, 50, 109	Amendment to include dump area at Saddlers, conveyor corridor and sublease. Also to include mining in Saddlers, Ayredale and Roxburgh
June 2019	2.0	All	Format change following Annual Forward Program Guideline FY 20-22
December 2019	2.1		Dewatering of tailings trial addition
May 2020	3.0	All	Update to mine plans. Minor text additions. Tailings information added in response to Targeted Tailings Assessment by the resources regulator.
June 2021	4.0	All	Update to mine plans. Minor text changes.
July 2022	5.0	All	Update to mine plans. Minor text changes.
June 2023	6.0	All	Update to mine plans. Minor text changes.
Aug 2024	7.0	All	Update to mine plans. Minor text changes. Changed from 3 year plan to 2 year in line with current approvals.

Appendix 2: References

Reference	Publication
Grigg et al	Grigg, A., Emmerton, B.R. and McCallum, N.J. ACARP Project C8038: Completion Criteria for Pasture Based Rehabilitation in the Bowen Basin. CMLR, University of Queensland. August 2001.
Rawlings et al	Rawlings, K.; Freudenberger, D.; and Carr, D.; A Guide to Managing Box Gum Grassy Woodlands. Department of the Environment, Water, Heritage and the Arts, 2010.
2009 EA	Hansen Bailey (2009) Mt Arthur Coal Consolidation Project Environmental Assessment
2013 EA	Resource Strategies (2013) Mt Arthur Coal Open Cut Modification Environmental Assessment
Blue Book Vol 2E	Managing Urban Stormwater Guidelines: Volume 2E Mines and Quarries. NSW EPA, 2008.
PA 09_0062 MOD 1	Project Approval 09_0062 MOD 1. Mt Arthur Coal Mine – Open Cut Modification Project, NSW Department of Planning and Environment, September 2014.
EPBC	Environmental Protection and Biodiversity Conservation Act Approval 2011/5866. Department of Sustainability, Environment, Water, Population and Communities, April 2012.
BMP/OMP	Biodiversity Management Plan and Offset Management Program for Onsite and Near site Offset Areas. In prep. Umwelt, 2013.
Closure Plan	Mt Arthur Coal Mine, Hunter Valley, NSW. Development of a Conceptual Mine Closure Plan and Outline of the Methodology behind the Closure Cost Provision and Valuation. GSSE, July 2011.
EMS	Mt Arthur Coal Environmental Management System
EPL	Environment Protection Licence No. 11457
DSC	NSW Dam Safety Committee approval conditions
SWMP	Surface Water Management Plan
Dump Standard	Standard for Design, Construction and Maintenance of Dump Areas
Agronomist	Report prepared by consulting agronomist on grazing potential on Mt Arthur Coal pasture rehabilitation. In preparation.
Elliot & Veness	After Elliot, G.L. and Veness, R.A. Selection of Topdressing Material for Rehabilitation of Disturbed Areas in the Hunter Valley. J.Soil Cons, NSW 37 37-40, 1981.
Hazelton & Murphy	Hazelton, P.A. & Murphy, B.W. Interpreting Soil Test Results: What do all the numbers mean? (2nd ed.). CSIRO, 2007.