



**NSW  
Resources  
Regulator**

FWP0001032

# **MOUNT PLEASANT COAL MINE FORWARD PROGRAM**

Saturday 17 December 2022 to Tuesday  
16 December 2025

# Contents

Summary.....	3
Important.....	3
Three-year forecast – surface disturbance activities.....	4
Project description.....	4
Description of surface disturbance activities.....	4
Three-year rehabilitation forecast.....	6
Rehabilitation planning schedule.....	6
Rehabilitation research and trials.....	11
Rehabilitation maintenance and corrective actions.....	8
Rehabilitation schedule.....	8
Subsidence remediation for underground operations.....	8
Progressive mining and rehabilitation statistics.....	9
Three-yearly forecast cumulative disturbance and rehabilitation progression.....	9
Rehabilitation key performance indicators (KPIs).....	9
Attachment 1 – Reporting Definitions.....	10
Attachment 2 – Definitions.....	12
Attachment 3 – Plans.....	18

## Summary

### DETAIL

<b>Mine</b>	Mount Pleasant Coal Mine
<b>Reference</b>	FWP0001032
<b>Forward program commencement date</b>	Saturday 17 December 2022
<b>Forward program end date</b>	Tuesday 16 December 2025
<b>Forward program revision (if applicable)</b>	
<b>Contact</b>	Andrew Reid
<b>Mining leases</b>	ML 1709 (1992), ML 1708 (1992), ML 1750 (1992), ML 1645 (1992), ML 1713 (1992), ML 1808 (1992)
<b>Project location</b>	MACH ENERGY AUSTRALIA PTY LTD
<b>Date of submission</b>	Monday 1 August 2022

## Important

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

# Three-year forecast – surface disturbance activities

## Project description

The MPO is located in the Upper Hunter Valley of NSW, approximately 3 km north west of Muswellbrook and approximately 50 km north west of Singleton.

Development is undertaken within Mining Lease (ML) 1645, ML 1713, ML 1708, ML 1808, ML 1709 and ML 1750 and is operated in accordance with the relevant Authorities and in accordance with NSW Development Consent DA 92/97 for the MPO.

Development Consent DA 92/97 (as modified) allows for the extraction of 197 million tonnes (Mt) of run of-mine (ROM) at a rate of up to 10.5 million tonnes per annum and allows for mining operations to be carried out until 22 December 2026.

The approved mine includes a rail loop and spur, load-out facility and conveyor, connecting the mine to the Muswellbrook–Ulan Rail Line. Major components of the mine include:

- Open cuts (North Pit and South Pit);
- Eastern, South-West and North-West Out-of-Pit Emplacements;
- water management infrastructure;
- CHPP and coal stockpiles; and
- Fines Emplacement Areas.

## Description of surface disturbance activities

### Exploration activities

Annual pre-production drilling programs have been undertaken since 2017. These annual programs are undertaken within ML 1645 and ML 1709 to increase geological confidence, 3 years in advance of production. The majority of boreholes will continue to be located within the open cut/overburden emplacement area footprint areas within ML 1645 and ML 1709 and will involve open hole and core drilling. Wireline core drilling is also proposed to be undertaken within the next 3 years north of ML 1709.

Hole locations are determined based on current mining face positions and the drill hole coverage required to close spacing to 125 meters (m) centres between the current highwall crest and the planned crest three years hence. Drilling is undertaken using the water injection method, which generates minimal dust and noise emissions.

All necessary approvals (e.g. a Review of Environmental Factors, if required) will be obtained prior to commencement of the drilling programs.

All completed exploration drill holes will be grouted (cemented) and decommissioned and drill pad disturbance areas rehabilitated, in accordance with the requirements of AUTH 459 and MPO's ML Authorities.

## Construction activities

Construction activities to be undertaken at MPO throughout the next 3 years include:

- final commissioning of the new Rail Loop and Train Load-Out;
- continuation of construction and relocation of the Hunter River Pump Station;
- decommissioning and removal of the existing rail spur and loop, and associated rail infrastructure;
- ongoing installation of visual bunding and vegetation screening as required, to provide screening of the MPO from sensitive viewpoints;
- continuation and completion of the Fines Emplacement Area (FEA) Stage 1 Lift Project to increase the capacity for fines deposition;
- CHPP feed chute replacement, primary and secondary sizer replacement;
- bathhouse facilities expansion at the Infrastructure Area;
- construction and commissioning of the new High Wall Dam (HWD2) including associated 22 kilovolt electrical works due to the open cut expansion to the west;
- decommissioning and removal of the current High Wall Dam (HWD1);
- workshop facilities upgrades including new maintenance bays for the supplementary mining fleet to be mobilised;
- commencement of the civil and drainage upgrades at the CHPP Area including works at the CHPP Sediment Dam;
- continuation of mining activities and establishment of the Eastern Out-of-Pit Overburden Emplacement Area; and

- establishment of minor access tracks where necessary, within the approved disturbance boundary.

## Mining schedule

Mining development method and sequencing and general mine features.

Mining will continue to utilise open pit surface mining methods, involving conventional truck and excavator/shovel excavation removing pre-strip and overburden sequences and coal seam interburden materials, hauling ex-pit and in-pit to overburden emplacements. Dozer push may also be utilised where practical.

Coal will be extracted by either an excavator/hydraulic shovel or loader, depending on seam thickness and equipment scheduling requirements. A small percentage of coal seams may require ripping by dozers, or may be blasted. Extracted coal will be loaded onto a fleet of mine haul trucks for transport to the CHPP.

ROM coal will be trucked to a ROM dump hopper and transferred to the sizing station and stacker by conveyors. ROM coal may be temporarily stockpiled in the active mining area prior to being trucked to the ROM dump hopper.

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

Overburden and interburden material will continue to be primarily placed in the Eastern Out-of-Pit Overburden Emplacement.

The emplacement landform would be developed in 10 m lifts to enable more rapid establishment of the final surface levels, as waste rock placement progresses more rapidly than the alternative of construction in 20 m emplacement lifts that takes significantly longer to develop, and also requires longer to reshape.

The spontaneous combustion management strategy for the MPO will provide that no zones of poorly blended, potentially acid forming material are exposed in the final surface of the Overburden Emplacement and back-filled open cuts. This will be achieved by excluding the material identified as potentially being acid forming (i.e. non-economic coal and identified coal seam roof and floor rock from the Wynn Seam) from the final face of the Overburden Emplacement with a minimum cover of 10 m of inert material overlying the potentially acid forming material.

Coarse rejects will be placed on the lower levels of the mined-out void and Out of-Pit Emplacements at a minimum of 5 m from the exposed face. As such, no additional capping of coarse reject is required. Reactive ground testing is also undertaken at the MPO to assist with identifying reactive materials. No co-disposal is undertaken at the MPO.

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

Deposition of fine rejects will continue within the Fines Emplacement Area which commenced in late 2019. MACH Energy operates the Fines Emplacement Area using sub-aerial deposition which involves an extended period of air drying that maximises in-situ tailings densities and in turn maximises the storage efficiency of the facility and it provides a more competent fines surface for future rehabilitation purposes.

Fine reject (tailings) will be thickened into a solids density of approximately 20 per cent (%) to 30% by weight and will predominantly be fine rock and clay with some coal and flocculant. The fine reject will be wet with moderate conductivity. Additional and/or alternate fine rejects processing technologies may also be undertaken during the Forward Program term, which may result in increased densities.

MACH Energy has commissioned a Fines Emplacement Area Rehabilitation Strategy to be conducted in 2022/23 which will include details of the proposed capping system for the facility. Once finalised, MACH Energy would communicate the proposed Strategy to the NSW Resources Regulator.

## Waste disposal and materials handling operations.

The approved MPO Waste Management Plan (WasteMP) describes the measures that will be implemented to avoid, minimise, reuse and recycle all waste streams generated during the construction and operation stages of the MPO.

Wastes generated on site will be segregated at source and stored and transported appropriately.

There will be no landfill developed on site, however, some inert waste material (e.g. wood, steel and wire from demolition) may be disposed of in the Overburden Emplacement. Larger quantities of waste will be stored in secure locations on site until they can be removed. The disposal of tyres in the backfilled open cuts would be undertaken in accordance with the WasteMP and Environment Protection Licence.

There are two sewage management facilities at the MPO. The ongoing operation of these facilities will continue to comply with the conditions of DA 92/97, the requirements of Muswellbrook Shire Council and any applicable legislation.

Hazardous substances will be managed through the MPO Environmental Management System procedures for site contamination prevention and control. Additionally, the MPO will register all chemicals used on site in a central database. The central database will contain all information in the Safety Data Sheets and an inventory of chemicals held on site. The information will be accessible at any computer terminal within the MPO, and will provide guidance on storage, use and disposal.

**Key production milestones**

MATERIAL	UNIT	YEAR 1	YEAR 2	YEAR 3
<b>Stripped topsoil</b> <small>(if applicable)</small>	(m <sup>3</sup> )	141,100	280,195	49,264
<b>Rock/overburden</b>	(m <sup>3</sup> )	41,000,000	41,000,000	41,000,000
<b>Ore</b>	(Mt)	10.5	10.5	10.5
<b>Reject material<sup>1</sup></b>	(Mt)	3.2	3.2	3.2
<b>Product</b>	(Mt)	7.4	7.4	7.4

<sup>1</sup> This includes coarse rejects, tailings and any other wastes resulting from beneficiation.

# Three-year rehabilitation forecast

## Rehabilitation planning schedule

### Rehabilitation planning schedule

MACH Energy prepares internal annual rehabilitation plans which provide a more detailed guide for how and where rehabilitation works are to be undertaken for the next year. The plans include (but are not limited to):

- Detailed rehabilitation specifications to be adhered to, including specifications for landform design; final landform surface profiling; drainage design; topsoil replacement; deep ripping on the contour, planting and seeding and habitat feature placement.
- Key rehabilitation stages when Inspection and Test Plan (ITP) checks must be undertaken (note, ITP checks are quality assurance checks which are undertaken to ensure the rehabilitation specifications have been met). MACH Energy implements ITPs for Landform Design, Landform Construction Profiling, Topsoil Placement, Drainage Construction and Ripping and Seeding. Each ITP is required to be signed off by relevant MACH Energy personnel.
- A rehabilitation schedule, including planned rehabilitation areas and species lists and densities for target Plant Community Types (PCTs).
- Inspection, maintenance and reporting requirements.

### Stakeholder consultation

Consultation is regularly undertaken with relevant stakeholders, including regular discussions with the community consultative committee (CCC), MSC, surrounding landowners, neighbouring mines, Registered Aboriginal Parties, and the NSW Resources Regulator, and detailed consultation as part of the State Significant Development process.

### Rehabilitation studies, risk assessments and/or design work

Over the MPO life of mine, MACH Energy proposes to build on industry research results and conduct various research studies and trials to inform the most suitable practices that will enable final land use development on final mine landforms and disturbed areas of the MPO. Details of the research may include:

- Potential variables impacting on rehabilitation programs and causes of localised rehabilitation failure.

- Assessing rehabilitation strategies that have successfully reinstated woodland communities (or rehabilitation with species typical of various communities) on other mine sites, including:
  - establishing appropriate soil substrate: direct application of topsoil; stockpiled native topsoil; raw overburden and interburden material plus addition of biosolids/organic growth medium; addition of other organic material; rehabilitation trials on fines material;
  - establishment of the grassy understorey: grass species suitable for mine rehabilitation; low and high photosynthetic pathway species; establishing native herbs and forbs;
  - establishing the shrubby understorey and overstorey;
  - seed distribution methods: hand-broadcasting; brush-matting; hydro-mulching; spreading seed-bearing hay; direct seeding; air seeding; and
  - progressive rehabilitation strategy: pre-stripping requirements; sequence of rehabilitation strategies.
- Rehabilitation irrigation trials subject to weather conditions and water availability for the trial.
- Tiger Orchid propagation trial.

## Rehabilitation research and trials

# MOUNT PLEASANT COAL MINE FORWARD PROGRAM

FWP0001032 | Saturday 17 December 2022 to Tuesday 16 December 2025

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS
RRT0001017	<b>Rehabilitated Landform Erosion Monitoring</b>	Monitoring to inform future rehabilitation monitoring and adaptive management of the geomorphic landform design.	Rehabilitation monitoring sites have been identified in representative rehabilitation and analogue locations. Each monitoring site will consist of a flume to measure surface water runoff and soil erosion rate and a weather station that records rainfall, air temperature, incoming and outgoing radiation as well as soil moisture. This allows both surface and subsurface hydrology to be quantified. Deeper soil moisture and temperature probes may be added depending on the depth of the soil material.	1 Aug 2023	Ongoing
RRT0001018	<b>Topsoil Stockpile Investigation</b>	Assess the effectiveness of the stockpile management and soil replacement, and allow site-specific inputs to be incorporated into the SIBERIA program that supports geomorphic landform design.	Soil sampling and microbial sampling and testing will be conducted, where possible, pre-inoculation, post-inoculation, every 12 months post-inoculation and at placement on rehabilitation areas.  Samples will be taken at 10 cm depths at each soil stockpile and rehabilitation area.  The investigation will also include:	1 Aug 2023	Ongoing

# MOUNT PLEASANT COAL MINE FORWARD PROGRAM

FWP0001032 | Saturday 17 December 2022 to Tuesday 16 December 2025

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS
			<ul style="list-style-type: none"> <li>photographs;</li> <li>microbial biomass analysis;</li> <li>collection and weighing of above ground biomass;</li> <li>germination counts post-soil emplacement; and</li> <li>recording of erosion.</li> </ul>		
RRT0001016	<b>ACARP Tailings to Topsoil Research Project</b>	The project aims to optimise existing tailings processes and technologies and provide a commercially viable system for tailings utilisation.	<p>The project methodology involves four major processes:</p> <ol style="list-style-type: none"> <li>Characterisation and pre-treatment of tailings;</li> <li>Delivery of tailings slurry to the trial site via a high-efficiency solids separation mobile tailings handling plant;</li> <li>De-watering of tailings via a mobile dewatering plant; and</li> <li>Integrating the upgraded tailings with the existing soil profile at the trial site to improve soil resources for crop production or native vegetation establishment.</li> </ol>	1 Aug 2023	Ongoing

# MOUNT PLEASANT COAL MINE FORWARD PROGRAM

FWP0001032 | Saturday 17 December 2022 to Tuesday 16 December 2025

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS
RRT0001020	<b>Cultural Heritage Cool Burn</b>	Assess an appropriate method to reduce fuel loads at MPO.	Opportunistically, a cultural cool burn may be undertaken in Spring each year, subject to weather and fire hazard conditions.	1 Aug 2023	Ongoing

## Rehabilitation maintenance and corrective actions

The Rehabilitation Monitoring Manual (RMM) guides rehabilitation monitoring at the MPO and describes the rehabilitation monitoring methodologies and monitoring parameters, MPO rehabilitation objectives, and performance indicators and completion criteria for the progressive rehabilitation phases. An Ecosystem Function Analysis (EFA) data collection form is included in the RMM to ensure accurate data collection.

The RMM will also include a TARP for actions required to be undertaken should rehabilitation monitoring results indicate that the rehabilitation area is not trending towards meeting the performance indicators and completion criteria.

A rehabilitation monitoring program has been implemented at MPO based on the performance indicators and approved completion criteria. Details of rehabilitation performance will be reported in the MPO Annual Review and updated in this report.

Where necessary, rehabilitation procedures will be amended based on the monitoring results, to continually improve rehabilitation standards.

A rehabilitation monitoring schedule is also included in the RMM, which will continually be updated to include the rehabilitation and analogue monitoring sites as they are added to the rehabilitation monitoring program.

The rehabilitation monitoring program includes:

- EFA monitoring;
- Visual Inspection Monitoring;
- low intensity agriculture monitoring programme;
- stream health monitoring; and
- ecosystem and rehabilitation assessment using drones.

## Rehabilitation schedule

Rehabilitation of the Eastern Out-of-Pit Emplacement area will continue to be undertaken progressively following mining operations over the Forward Program term.

MACH Energy targets reshaping of the Eastern Out-of-Pit Emplacement to final surface level and initial revegetation of all outer emplacement batter lifts within 6 months of each subsequent dump panel lift being completed.

The design concept, principles and construction methodology for the overburden emplacement includes reshaping the emplacement to include macro and micro relief and geomorphic features to develop a more natural looking and functional landform.

In general, the rehabilitation methodology will involve:

- Spreading topsoil that is mixed with gypsum at a standard application rate onto rehabilitation areas.
- Deep ripping the rehabilitation area along the contour. Where practicable, ripping will be undertaken immediately prior to seeding to assist root/vegetation establishment.
- Seeding the rehabilitation area with a native seed mix including native grass, shrub and tree species and temporary cover crop species.
- Installation of habitat features including habitat/stag trees, log piles and rock piles across the rehabilitation area.
- Planting of tubestock including ground, middle and upper stratum species of the relevant target PCTs.
- Installation of signage denoting rehabilitation area to restrict access and minimise potential for disturbance to the area if considered necessary.

## Subsidence remediation for underground operations

## Progressive mining and rehabilitation statistics

### Three-yearly forecast cumulative disturbance and rehabilitation progression

FORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
<b>A Total surface disturbance footprint</b>	(ha)	1,458.8	2,832.99	4,218.83
<b>B Total active disturbance</b>	(ha)	1,458.8	2,832.99	4,218.83
<b>C Land prepared for rehabilitation</b>	(ha)	0	0	0
<b>D Ecosystem and land use establishment</b>	(ha)	141.55	295.46	459.26

### Rehabilitation key performance indicators (KPIs)

FORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
<b>O Total new active disturbance area</b>	(ha)	1,458.8	1,374.19	1,385.84
<b>P Area proposed for active rehabilitation</b>	(ha)	141.55	153.91	163.8
<b>Q Annual rehabilitation to disturbance ratio</b>		0.1	0.11	0.12

# Attachment 1 – Reporting Definitions

REPORTING CATEGORY	DEFINITION
<p><b>A</b> Total disturbance footprint – surface disturbance</p>	<p>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.</p> <p>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).</p> <p>Underground mining operations should not include the footprint of underground mining areas/subsidence management areas in the total disturbance footprint.</p>
<p><b>B</b> Total active disturbance</p>	<p>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).</p>
<p><b>C</b> Rehabilitation – land preparation</p>	<p>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.</p> <p>Refer to the glossary of terms in this document for the definition of these phases of rehabilitation.</p>
<p><b>D</b> Ecosystem and land use establishment</p>	<p>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.</p> <p>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.</p>

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
<b>Active</b>	In the context of rehabilitation, land associated with mining domains is considered ‘active’ for the period following disturbance until the commencement of rehabilitation.
<b>Active mining phase of rehabilitation</b>	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.
<b>Analogue site</b>	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.
<b>Annual rehabilitation report and forward program</b>	As described in the Mining Regulation 2016.
<b>Annual reporting period</b>	As defined in the Mining Regulation 2016.
<b>Closure</b>	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).
<b>Decommissioning</b>	The process of removing mining infrastructure and removing contaminants and hazardous materials.
<b>Decommissioning Phase of Rehabilitation</b>	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.

<b>WORD</b>	<b>DEFINITION</b>
<b>Department</b>	The Department of Regional NSW.
<b>Disturbance</b>	See Surface Disturbance.
<b>Disturbance area</b>	<p>An area that has been disturbed and that requires rehabilitation.</p> <p>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).</p>
<b>Domain</b>	<p>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.</p>
<b>Ecosystem and Land Use Development</b>	<p>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.</p> <p>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.</p> <p>This phase of rehabilitation may include specific vegetation management strategies and maintenance such as tree thinning, supplementary plantings and weed management.</p>
<b>Ecosystem and Land Use Establishment</b>	<p>This phase of rehabilitation consists of the processes to establish the approved final land use following construction of the final landform.</p> <p>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.</p>
<b>Exploration</b>	Has the same meaning as that term under the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.

<b>WORD</b>	<b>DEFINITION</b>
<b>Final landform and rehabilitation plan</b>	As defined in the Mining Regulation 2016.
<b>Final land use</b>	As defined in the Mining Regulation 2016.
<b>Form and way</b>	Means the form and way approved by the Secretary. Approved form and way documents are available on the Department’s website.
<b>Growth Medium Development</b>	<p>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).</p> <p>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.</p>
<b>Habitat</b>	Has the same meaning as that term under the <i>Biodiversity Conservation Act 2016</i> and the <i>Fisheries Management Act 1994</i> (as relevant).
<b>Indicator</b>	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.
<b>Land</b>	As defined in the <i>Mining Act 1992</i> .
<b>Landform Establishment</b>	<p>This phase of rehabilitation consists of the processes and activities required to construct the final landform.</p> <p>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).</p>
<b>Large mine</b>	As defined in the Mining Regulation 2016.
<b>Lease holder</b>	The holder of a mining lease.

WORD	DEFINITION
<b>Life of mine</b>	The timeframe of how long a mine is approved to mine, from commencement to closure.
<b>Mine rehabilitation portal</b>	<p>Means the NSW Resources Regulator’s online portal that lease holders must use (via a registered account) to:</p> <ul style="list-style-type: none"> <li>■ upload rehabilitation geographical information system (GIS) spatial data</li> <li>■ develop rehabilitation GIS spatial data (using online tracing functions)</li> <li>■ generate rehabilitation plans and rehabilitation statistics using the map viewer and Rehabilitation Key Performance Indicator functionalities.</li> </ul> <p>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.</p>
<b>Mining area</b>	As defined in the <i>Mining Act 1992</i> .
<b>Mining domain</b>	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).
<b>Mining land</b>	As defined in the <i>Mining Act 1992</i> .
<b>Native vegetation</b>	Has the same meaning as that term under section 60B of the <i>Local Land Services Act 2013</i> .
<b>Overburden</b>	Material overlying coal or a mineral deposit.
<b>Performance indicator</b>	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.

<b>WORD</b>	<b>DEFINITION</b>
<b>Phases of rehabilitation</b>	<p>The stages and sequences of actions required to rehabilitate disturbed land to achieve the final land use. The phases of rehabilitation are:</p> <ul style="list-style-type: none"> <li>■ active mining</li> <li>■ decommissioning</li> <li>■ landform Establishment</li> <li>■ growth medium development</li> <li>■ ecosystem and land use establishment</li> <li>■ ecosystem and land use development.</li> </ul>
<b>Progressive rehabilitation</b>	<p>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.</p>
<b>Rehabilitation Completion</b>	<p>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 <i>Form ESF2 Rehabilitation completion and/or review of rehabilitation cost estimate</i> application by the lease holder.</p>
<b>Rehabilitation Completion criteria</b>	<p>As defined in the Mining Regulation 2016.</p>
<b>Rehabilitation cost estimate</b>	<p>As defined in the Mining Regulation 2016.</p>
<b>Rehabilitation management plan</b>	<p>As defined in the Mining Regulation 2016.</p>
<b>Rehabilitation objectives</b>	<p>As defined in the Mining Regulation 2016.</p>
<b>Rehabilitation risk assessment</b>	<p>As defined in the Mining Regulation 2016.</p>
<b>Rehabilitation schedule</b>	<p>The defined timeframes for progressive rehabilitation set out in the forward program.</p>

WORD	DEFINITION
<b>Relevant stakeholders</b>	<p>Means any persons or bodies who may be affected by the mining operations, including rehabilitation, carried out on the lease land, and includes:</p> <ul style="list-style-type: none"> <li>■ the relevant development consent authority</li> <li>■ the local council</li> <li>■ the relevant landholder(s)</li> <li>■ community consultative committee (if required under the development consent) or equivalent consultative group</li> <li>■ affected land holder(s)</li> <li>■ government agencies relevant to the final land use</li> <li>■ affected infrastructure authorities (electricity, telecommunications, water, pipeline, road, rail authorities)</li> <li>■ local Aboriginal communities, and</li> <li>■ any other person or body determined by the Minister to be a relevant stakeholder in relation to a mining lease.</li> </ul>
<b>Risk</b>	The effect of uncertainty on objectives. It is measured in terms of consequences and likelihood (AS/NZS ISO 31000:2009).
<b>Secretary</b>	The Secretary of the Department.
<b>Security deposit</b>	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).
<b>Surface disturbance</b>	Includes activities that disturb the surface of the mining area, including mining operations, ancillary mining activities and exploration.
<b>Tailings</b>	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 <sup>2</sup> .
<b>Waste</b>	Has the same meaning as that term under the <i>Protection of the Environment Operations Act 1997</i> .

<sup>2</sup> Commonwealth of Australia (DITR), 2007. *Tailings Management*.

## Attachment 3 – Plans

MPO\_FWP2022\_Plan 2A.pdf

MPO\_FWP2022\_Plan 2B.pdf

MPO\_FWP2022\_Plan 2C.pdf

Forward Program (LARGE MINE) v2.1