

ARR0001058

NARRABRI COLLIERY ANNUAL REHABILITATION REPORT

Saturday 1 January 2022 to Saturday 31 December 2022

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Summary table

DETAIL

Mine	Narrabri Colliery
Reference	ARR0001058
Annual report period commencement date	Saturday 1 January 2022
Annual report period end date	Saturday 31 December 2022
Forward program	FWP0001096
Mining leases	ML 1609 (1992)
Lease holder(s)	Narrabri Coal Australia Pty Ltd, KORES NARRABRI PTY LIMITED, UPPER HORN INVESTMENTS (AUSTRALIA) PTY LTD, POSCO INTERNATIONAL NARRABRI INVESTMENT PTY LTD, NARRABRI COAL PTY LTD, J-POWER AUSTRALIA PTY LTD
Contact	Shane Rily

Date of submission

Important

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

Mine details

Project description

Narrabri Mine is located within the Narrabri Local Government Area (LGA), approximately 30 km south-southeast of Narrabri, and 10 km north-northwest of Baan Baa. Mining Lease (ML) 1609 was originally approved on the 18th of January 2008 and set to expire 18th January 2029, in accordance with the provisions of Mining Act 1992. The ML encompasses an area of 5,298ha for the predominate purpose of mining for coal.

The current PA 08_0144 Modification 7 will allow the undertaking of mining operations until the 26 July 2031. Modification 5 of PA 08_0144 allows NCO to produce up to 11 Mtpa of ROM coal. In accordance with the NSW Mining Amendment (Standard Conditions of Mining Leases – Rehabilitation) Regulation 2021, the Mining Operations Plan (MOP) no longer took effect from 1 August 2022. The MOP was replaced with a site Rehabilitation Management Plan (RMP).

Life of mine

8 years

Current development consents, leases and licences

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

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

ML 1609 (1992)

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

ML 1839
Environment Protection Licence (EPL) 12789

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

The Stage 3 Extension Project State Significant Development (SSD) was granted approval under section 4.38 of the EP&A Act on 1 April 2022, following the determination by the Independent Planning Commission (SSD-10269). However, due to an unexpected delay in receiving

Commonwealth approval for the Stage 3 Project, NCOPL will continue mining operations under the current Stage 2 Project Approval (PA 08_0144).

Changes to land ownership and land use

Lot 68 DP 757104 was purchased by the company in 2022. This property overlies panels 203 – 209 in the southern area of ML1609.

Surface disturbance and rehabilitation activities during the reporting period

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

Surface disturbance activities completed within the reporting period include:

- Commencement of Brine Dam construction;
- Commencement of the construction of the western ventilation pad;
- Continued earthworks on the Rejects Emplacement Area (REA);
- Gas drainage infrastructure.
- Drill pads and associated tracks.

These works were generally aligned with the proposed surface disturbance activities outlined in the 2022 Forward Program

Rehabilitation planning activities that were conducted, including any specialist studies

Rehabilitation planning activities conducted during the reporting year focussed on drill pads and roadway rehabilitation to ensure progressive rehabilitation of areas no longer required for operational purposes. Planning for this rehabilitation works is required due to the complex nature of the rehabilitation process. Stages of borehole rehabilitation include:

- Bore to be grouted (first plug).
- Bore to be grouted (second plug / fill to surface (FTS)).
- Bore grout to be cut below surface.
- Bore to have lightning protection.
- Bore lightning protection to be backfilled.
- Rehabilitation of surface disturbance around drill pad and associated roadways..

System development work has been undertaken to bring this process into the WebGIS systems to provide access to required workflows by the operational teams conducting these works. This new system will be deployed in the next forward program year.

Overview of subsidence repair and/or remediation works undertaken

Subsidence will be remediated in accordance with the approved Extraction Plans. Visual inspections are undertaken behind the longwall as it progresses and following significant rainfall events to identify subsidence impacts. These impacts are recorded into a spatial database. Remediation of these features are undertaken based on the Trigger Action Response Plan (TARP) in Section 10 of the RMP. Records of the remediation actions are captured in the spatial database for future reference. Follow up inspections of these subsidence features are undertaken to ensure that the rehabilitation has been successful, and no further impacts have developed.

Overview of rehabilitation management and maintenance activities

Weed management programs were implemented at NCO during 2022. Weed management consists of spot spraying programs periodically throughout the year when conditions are favourable. Locations requiring management are identified through:

- Weed Management Mapping supported by the ArcGIS software application Field Maps;
- ecological monitoring reports and locations of listed weed species.

Weed control in the pastoral areas is planned to be managed by landholder management and pasture improvement (or as recommended in subsequent monitoring reports). Weeds targeted in the reporting period include African boxthorn, Common Pear and Mother of Millions.

Feral Animals

A vertebrate animal control program was undertaken at NCO in Spring 2022, targeting both feral pigs and foxes producing the following results;

- Feral pigs
 - o 3 sites were setup across site;
 - o A total of 36 pigs were successfully baited.
- Foxes
 - o 44 baits were presented at 22 stations set up across site
 - o A total of 16 foxes were successfully baited.

Motion sensors were used to record the number of foxes eating the baits.

Appropriately qualified and experienced feral animal contractors (appropriate feral animal management qualifications and pesticide accreditation where relevant) were engaged to undertake feral animal control works for WHC.

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

No notices received

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

No rehabilitation areas achieving final land use during reporting period.

Key production milestones

MATERIAL	UNIT	FWP0001096 YEAR 1	THIS REPORT
Stripped topsoil (if applicable)	(m ³)	104,498	66,000
Rock/overburden	(m ³)	0	0
Ore	(Mt)	0	4.8
Reject material¹	(Mt)	0.19	0.36
Product	(Mt)	4.6	4.79

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

Disturbance and rehabilitation statistics

Current disturbance and rehabilitation progression

ELEMENT	UNIT	FWP0001096 YEAR 1	THIS REPORT
A Total surface disturbance footprint	(ha)	447.41	437.16
B Total active disturbance	(ha)	313.96	267.96
C Land prepared for rehabilitation	(ha)	0	27.71
D Ecosystem and land use establishment	(ha)	9.24	141.49
E Ecosystem and land use development	(ha)	N/A	0
F Rehabilitation completion	(ha)	N/A	0

Rehabilitation key performance indicators (KPIs)

ELEMENT	UNIT	FWP0001096 YEAR 1	THIS REPORT
G Total new active disturbance area	(ha)	41.75	0
H New rehabilitation commenced during annual reporting period	(ha)	9.24	0
J Annual rehabilitation to disturbance ratio	%	0.22	0
I Established rehabilitation	(ha)	N/A	0
K Rehabilitated land to total mine footprint	%	N/A	0

Progressive achievement of established rehabilitation

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

Variation to the rehabilitation schedule

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

No significant deviations from the planned disturbance and rehabilitation works, however not as much disturbance was undertaken as originally expected due to operational changes related to weather (rain).

Key factors that delayed progressive rehabilitation

Weather - high rainfall.

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

Rehabilitation planning is undertaken through the forward program to ensure any disturbance areas no longer required for operational reasons are progressively rehabilitated.

Rehabilitation monitoring and research findings

Rehabilitation monitoring

The rehabilitation monitoring carried out in the annual reporting period

LMP remote sensing monitoring

The majority of significant decreases in PAB throughout the site can be attributed to the clearing of vegetation for mining compounds, tracks, and infrastructure. However, significant decreases were identified along watercourses including Pine Creek above LW107, LW108 and LW110, which indicate a loss of PAB may be due to increased water levels, potentially related to subsidence ponding.

Continued analysis of NDVI is recommended consistent with the LMP. LiDAR analysis of the entire area is scheduled to be undertaken in 2023 which will also be applied to creek cross-sections to determine significant changes.

Further significant decreases to PAB were noted above LW107, potentially associated with land management activities on cleared areas, and a decline in canopy health for woodland areas (discussed below).

BMP woodland and riparian vegetation

A review of all years' monitoring data and the 2022 NDVI mapping indicated a decline in canopy health above LW107, both at the FBS plot locations and larger areas associated with a decline in PAB. FBS monitoring above LW108 showed a slight decline in canopy health to 2021, although this was not reflected in the 2022 NDVI analysis.

The BMP scope is to continue monitoring for a period of three years after the longwall is complete, which would have finished in 2021 for LW107 and LW108, however, it is recommended to continue FBS monitoring to confirm trends and until investigations completed.

Status of performance against rehabilitation objectives and rehabilitation completion criteria

The monitoring program that has been implemented

All monitoring conducted to date indicates a general trend of rehabilitation towards achieving rehabilitation objectives and completion criteria across rehabilitation areas with no significant performance issue identified based on the existing monitoring program. Rehabilitation monitoring to date has been completed based on performance criteria outlined in the relevant Longwall Extraction Plan (Landscape Management Plan and Biodiversity Management Plan). Monitoring undertaken is designed to identify where TARP exceedance have occurred.

As the Rehabilitation Objectives and Completion Criteria are being updated through consultation with the Resources Regulator the monitoring program at Narrabri Colliery will be revised over the next reporting period to align with the new Rehabilitation Objectives and Rehabilitation Completion Criteria.

Narrabri Colliery Rehabilitation Objectives and Rehabilitation Criteria have not been approved by NSW Resources Regulator (RR) at time of reporting.

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

NO

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

N/A

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

All monitoring conducted to date indicates a general trend of rehabilitation towards achieving rehabilitation and completion criteria across rehabilitation areas with no significant performance issue identified based on the existing monitoring program. Rehabilitation monitoring to date has been completed based on performance criteria outlined in the Biodiversity Management Plan with future changes to reflect the new objectives and completion criteria outlined in the Narrabri Colliery RMP.

Appraisal description

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

Rehabilitation monitoring program findings

Rehabilitation monitoring at Narrabri colliery includes the following:

- Remote sensing
 - o Multi-spectral image analysis
 - o Floristic monitoring within woodland and riparian vegetation
- Fauna monitoring including: Woodland bird surveys
 - o Baited infra-red cameras
 - o Baited hair tubes
 - o Bat surveys using ultrasonic detectors (Anabats)

Monitoring completed for the 2022 period included:

- Land monitoring

- o Visual inspections of subsidence impacts by NCOPL

- o Remote sensing using multi-spectral image analysis to assess biomass (vegetation) and compare to data and trends from previous year's monitoring.

- Biodiversity monitoring

- o Remote sensing to assess both pasture and native vegetation, again compared to data and trends from previous years

- o Pre-clearing and clearing survey data and mapping.

The following changes were made to the monitoring program in 2022:

- Creekline monitoring points were reviewed via remote sensing, rather than physical inspection.

- Floristic-based subsidence (FBS) were also reviewed via remote sensing

- Targeted surveys for *Pseudomys delicatulus* (Delicate Mouse) and *Hoplocephalus bitorquatus* (Pale-headed Snake) were not undertaken:

- o The high rainfall conditions experienced in the region in spring 2022 presented animal welfare limitations to fauna trapping.

- o Capture rates of Delicate Mouse have been low and no impacts from surface cracking have been identified to date for this species. Given the size and intensity of the survey effort required it was determined that detection of surface cracks and prompt remediation is an effective mechanism to mitigate potential impacts to this species.

- o Pale-headed Snake has not previously been recorded despite years of large and intensive survey. As for Delicate Mouse, prompt remediation of surface cracks is considered an effective mechanism to mitigate potential impacts to this species.

- The spring 2022 fieldwork schedule was heavily impacted by rainfall which prevented access both to and within the site. As such the following limitations are noted:

- o Geomorphic creekbank inspections were not completed.

- o Floristic-based subsidence (FBS) plots were not monitored.

During the reporting period a new WebGIS system was developed by Narrabri Colliery for tracking and recording rehabilitation actions and performance of subsidence impacts. This new system uses the TARP triggers to manage subsidence impacts. Inspections of rehabilitation performance and rehabilitation actions undertaken are captured within this system.

A new Weed Management system has been developed using the same ArcGIS WebGIS technology to help manage identified weed zones following rehabilitation monitoring and general s

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

A key finding in the specialist report indicated some vegetation decline was detected potentially related to subsidence ponding. This was likely exacerbated due to the high rainfall over the reporting period. A geomorphic investigation is underway to determine the risk and potential controls required.

Key risks to rehabilitation that require ongoing maintenance include presence of weeds and presence of erosion across the rehabilitated landforms. Using the new WebGIS systems developed to manage these risks, Narrabri Colliery is has sufficient capacity to ensure performance stays on track towards achieving the rehabilitation objectives and completion criteria.

Outcomes of rehabilitation research and trials

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	UPDATEDDATE OF COMPLETION	STATUS	ON TRACK?	ON TRACK UPDATE
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Outcomes of completed trials and research

N/A

Attachment 1 – Reporting Definitions

REPORTING CATEGORY		DEFINITION
A1	Total disturbance footprint – surface disturbance	<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>
A2	Underground Mining Area	Underground mining operations areas/subsidence management areas.
B	Total active disturbance	Includes on-lease exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, waste rock emplacements (active/unshaped/in or out-of-pit), tailings dams (active/unshaped/uncapped) and temporary stabilised areas (e.g. areas sown with temporary cover crops for dust mitigation and temporary rehabilitation).
C	Rehabilitation – land preparation	<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>

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

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

Attachment 2 – Definitions

WORD	DEFINITION
Active	In the context of rehabilitation, land associated with mining domains is considered ‘active’ for the period following disturbance until the commencement of rehabilitation.
Active mining phase of rehabilitation	In the context of rehabilitation, the active mining phase of rehabilitation constitutes the rehabilitation activities undertaken during mining operations such as salvaging and managing soil resources, salvaging habitat resources, and native seed collection. This phase also includes management actions taken during operations to manage risks to rehabilitation and enhance rehabilitation outcomes such as selective handling of waste rock and management of tailings emplacements.
Analogue site	In the context of rehabilitation, an analogue site is a ‘reference site’ that represents an example of the defining characteristics (such as vegetation composition and structure or agricultural productivity) of the final land use. Characteristics of analogue sites can be assessed to develop the rehabilitation objectives and completion criteria for final land use domains.
Annual rehabilitation report and forward program	As described in the Mining Regulation 2016.
Annual reporting period	As defined in the Mining Regulation 2016.
Closure	A whole-of-mine-life process, which typically culminates in the relinquishment of the mining lease. It includes decommissioning and rehabilitation to achieve the approved final land use(s).
Decommissioning	The process of removing mining infrastructure and removing contaminants and hazardous materials.
Decommissioning Phase of Rehabilitation	Activities associated with the removal of mining infrastructure and removal and/or remediation of contaminants and hazardous materials. In the context of the rehabilitation management plan this phase of rehabilitation may also include studies and assessments associated with decommissioning and demolition of infrastructure or works carried out to make safe or ‘fit for purpose’ built infrastructure to be retained for future use(s) following lease relinquishment.

WORD	DEFINITION
Department	The Department of Regional NSW.
Disturbance	See Surface Disturbance.
Disturbance area	<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>
Domain	<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>
Ecosystem and Land Use Development	<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>
Ecosystem and Land Use Establishment	<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>
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	<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>
Habitat	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).
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 <i>Mining Act 1992</i> .
Landform Establishment	<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>
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	<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"> ■ 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. <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>
Mining area	As defined in the <i>Mining Act 1992</i> .
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 <i>Mining Act 1992</i> .
Native vegetation	Has the same meaning as that term under section 60B of the <i>Local Land Services Act 2013</i> .
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	<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"> ■ active mining ■ decommissioning ■ landform Establishment ■ growth medium development ■ ecosystem and land use establishment ■ ecosystem and land use development.
Progressive rehabilitation	<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>
Rehabilitation Completion	<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>
Rehabilitation Completion criteria	<p>As defined in the Mining Regulation 2016.</p>
Rehabilitation cost estimate	<p>As defined in the Mining Regulation 2016.</p>
Rehabilitation management plan	<p>As defined in the Mining Regulation 2016.</p>
Rehabilitation objectives	<p>As defined in the Mining Regulation 2016.</p>
Rehabilitation risk assessment	<p>As defined in the Mining Regulation 2016.</p>
Rehabilitation schedule	<p>The defined timeframes for progressive rehabilitation set out in the forward program.</p>

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: <ul style="list-style-type: none"> ■ 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 <i>Protection of the Environment Operations Act 1997</i> .

² Commonwealth of Australia (DITR), 2007. *Tailings Management*.

Attachment 2 – Rehabilitation Complaints

DATE	COMPLAINANT	COMPLAINT DETAILS	RESPONSE DETAILS	STATUS OF RESPONSE	DATE RESPONSE COMPLETED (IF APPLICABLE)
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Attachment 3 – Stakeholder consultation

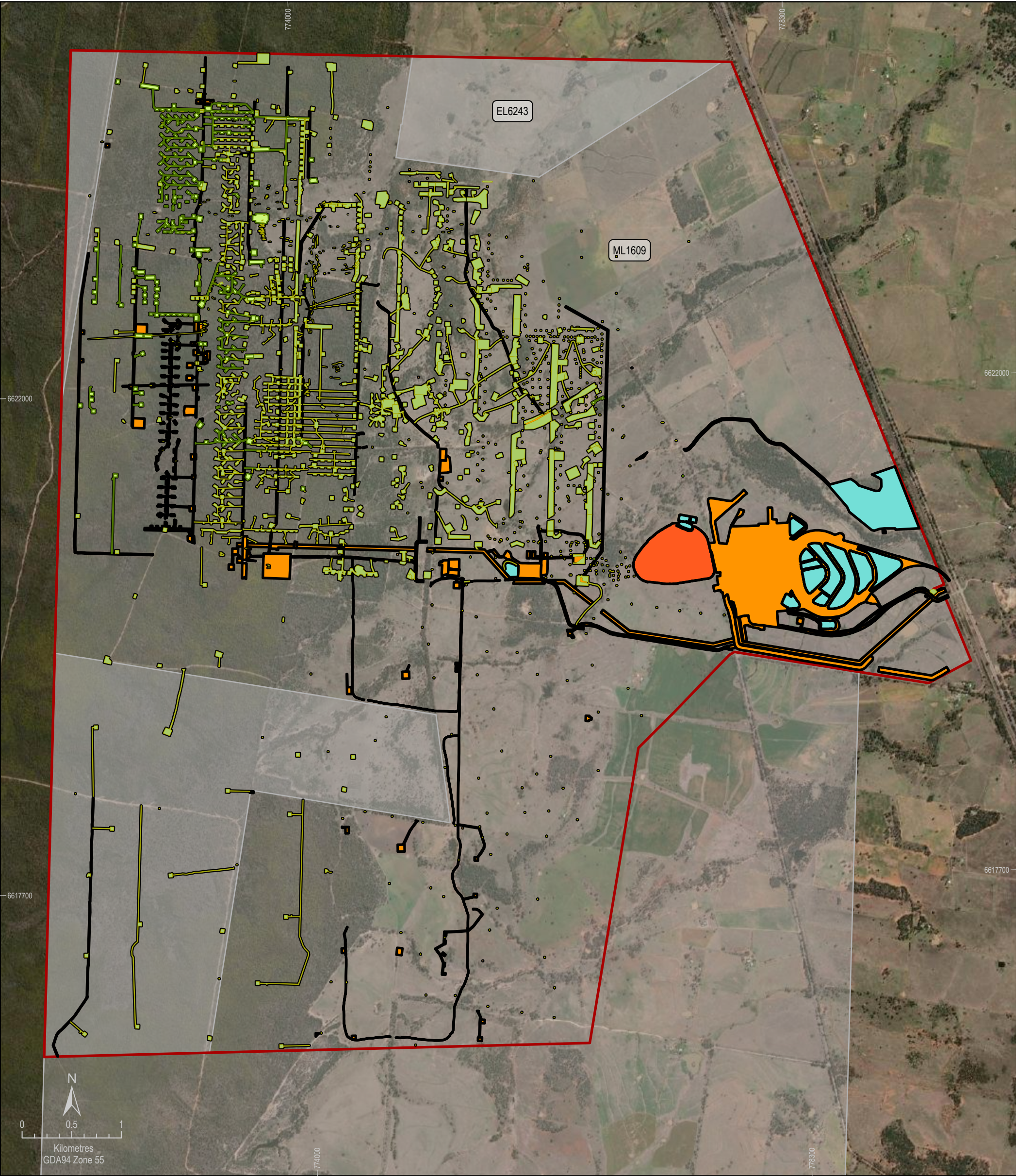
DATE	STAKEHOLDER	CONSULTATION ACTIVITIES AND FORMS	MATTERS SUBJECT TO CONSULTATION	ACTIONS TAKEN
7 Jul 2022	Resources Regulator	Meetings	Review 2022 Rehabilitation Management Plan	Rehabilitation Objectives and Completion Criteria have been updated following feedback and consultation with the NSW Resources Regulator. Once finalised and approved the 2022 RMP will be updated to reflect these changes
14 Sep 2022	Community Consultative Committee (CCC)	Meeting(s)	Rehabilitation Works	Commitment within the RMP to update the committee on rehabilitation activities
7 Jul 2022	Registered Aboriginal Parties (RAPs)	On-site supervision	Subsidence Rehabilitation within Aboriginal Cultural Heritage sites	Implemented in accordance with Subsidence Repair in ACH Sites procedure with RAP representatives onsite during rehabilitation activities
5 Nov 2022	NSW Department of Planning and Environment (DPE)	Consultation via NSW Major Projects Portal. Included consultation with the following agencies: NSW Environment Protection Authority (EPA), NSW Biodiversity, Conservation and Science Directorate (BCS), NSW Resources Regulator (RR), Narrabri Shire Council (NSC), NSW Independent Advisory Panel for Underground Mining (IAPUM)	Extraction Plan for Longwalls 203-206	The Extraction Plan for Longwalls 203 – 206 are under review.

Attachment 4 – Plans

Plan 1a - Rehabilitation and Disturbance to date Plan_v2.pdf

Plan 1b - Current landform contours 2022.pdf

Annual Report (LARGE MINE) v1.3



LEGEND

Project Approval Boundary

Coal - Current Titles

Rehabilitation preparation

Ecosystem and land use establishment

Growth media development

Mining domain type

Infrastructure Area

Other

Underground mining area (SMP)

Water Management Area



NARRABRI MINE

Figure 1a
Status of mining and rehabilitation at completion of annual reporting period



- LEGEND**
- Project Approval Boundary
 - Coal - Current Titles
 - Current landform contours (1m AHD)
 - Highway
 - Roads
 - State forest



NARRABRI MINE

Figure 1b
Status of Mining and Rehabilitation at Completion of Annual Reporting Period

Map created: 4 April 2023
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