



*Code of Practice:
Annual
Rehabilitation
Report and
Forward Program
for Small Mines*

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More information

This document forms part of a suite of documents which may assist holders of mining leases granted under the *Mining Act 1992*:

- Code of Practice: Rehabilitation Management Plan for Large Mines, XXX 2018 (also the subject of consultation)
- Code of Practice: Rehabilitation Management Plan for Small Mines, XXX 2018 (also the subject of consultation)
- Code of Practice: Annual Rehabilitation Report and Forward Program for Large Mines, XXX 2018 (also the subject of consultation)
- Guideline 1: Rehabilitation Risk Assessment (also the subject of consultation)
- Guideline 2: Rehabilitation Records (also the subject of consultation)
- Guideline 3: Rehabilitation Controls (also the subject of consultation)
- Guideline 4: Rehabilitation GIS Portal – Overview and Access (also the subject of consultation)
- Guideline 5: Rehabilitation GIS Portal – Spatial Data (GIS) Guidelines, XXX 2018 (also the subject of consultation)
- ESP1: Rehabilitation Security Deposits, June 2017
- ESG1: Rehabilitation Cost Estimate Guidelines, June 2017
- Rehabilitation Cost Estimation Tool, June 2017
- Rehabilitation Cost Estimation Tool Handbook, June 2017
- Form ESF2: Rehabilitation Completion and/or Review of Rehabilitation Cost Estimate
- ESB28: Environmental Incident Reporting Guidelines, 22 October 2007

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Amendment schedule

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Preamble

Regulatory framework

Rehabilitation is a critical element of mining operations in NSW and is principally regulated under *the Environmental Planning and Assessment Act 1979* and the *Mining Act 1992*.

Before commencing mining operations, development consent is required from the relevant consent authority¹ under the *Environmental Planning and Assessment Act 1979*. The Final Land Use, which includes the final landforms and rehabilitation requirements, is assessed and approved as part of the development consent. These requirements of the development consent are regulated by either the local council (for non-State significant development) or the Planning Services Division within the Department of Planning and Environment (for State significant development).

Following the grant of development consent, a mining lease, which provides the right to mine, may be granted under the *Mining Act 1992*. Rehabilitation conditions, which are consistent with the development consent, are attached to all mining leases. The Resources Regulator within the Department of Planning and Environment is responsible for the regulation of mining operations (including rehabilitation) carried out under a mining lease granted under the *Mining Act 1992*.

Regulatory objectives

The overall regulatory objective for mine rehabilitation is to achieve best practice progressive rehabilitation that will sustain final land use outcomes. The regulatory framework also aims to ensure that the financial burden for rehabilitation is borne by a lease holder in order to minimise the potential for liability being transferred to the State.

Rehabilitation is essential to ensure that areas disturbed by mining and associated activities are returned to a condition that is safe, stable and capable of supporting the Final Land Use. To achieve this outcome, rehabilitation planning and practices must be integrated throughout all phases of mining. This includes monitoring rehabilitation and managing risk to continuously improve rehabilitation performance during the term of a mining lease.

Progressive rehabilitation is key to the rehabilitation regulatory framework and ensures that the lease holder is on the correct trajectory to achieving the Final Land Use. Progressive rehabilitation provides an effective means to:

- reduce the overall liability for rehabilitation works;
- provide stability for disturbed areas and reduce the exposure of sources of dust generation;
- sequentially establish key species associated with multi-storey plant community types;
- increase the likelihood of delivering successful rehabilitation;
- test and improve rehabilitation practices; and
- improve visual amenity.

¹ The consent authority varies depending upon how a mining development is characterised under the *Environmental Planning and Assessment Act 1979*.

Progressive rehabilitation can also assist in reducing the timeframe required to return land disturbed by mining and associated activities to a condition that is capable of supporting the Final Land Use on a sustainable basis.

Purpose of this Code

The purpose of this Code is to set out the mandatory requirements for the preparation of an Annual Rehabilitation Report and Forward Program for Small Mines, when required by a condition of a mining lease.

Purpose of the Annual Rehabilitation Report and Forward Program

The Annual Rehabilitation Report and Forward Program consists of two components: the Annual Rehabilitation Report; and a Forward Program, which details proposed future rehabilitation.

The purpose of the Annual Rehabilitation Report component is to:

- report on the rehabilitation (both quantity and quality) undertaken over the previous 12-months to demonstrate adequate progress through the phases of rehabilitation; and
- establish whether this rehabilitation is on a trajectory towards meeting the Rehabilitation Objectives and Completion Criteria.

The purpose of the Forward Program component is to provide:

- the mining and rehabilitation schedule for the next 3-year term;
- a summary of the spatial progression of rehabilitation (rehabilitation phase) in the next 3-year term; and
- the basis for calculation of the required rehabilitation cost estimate to be submitted by a lease holder as a means for the Department to assess the required security deposit amount.

The Annual Rehabilitation Report and Forward Program must be prepared in accordance with the mandatory requirements of this Code to the satisfaction of the Minister. In addition, the Forward Program requires the Minister's approval.

When this Code applies

This Code applies as specified in the conditions of mining leases granted under the *Mining Act 1992*.

Consistency with a development consent

The Annual Rehabilitation Report and Forward Program must be consistent with the relevant development consent granted under the *Environmental Planning and Assessment Act 1979*.

Development consents for mining operations often contain specific conditions related to rehabilitation, such as rehabilitation objectives, completion criteria, landform design and other related requirements.

To ensure consistency, the Annual Rehabilitation Report and Forward Program must specifically reference and incorporate the rehabilitation objectives and completion criteria required to meet **all** rehabilitation requirements set in the development consent.

Where the Resources Regulator identifies an inconsistency between the Annual Rehabilitation Report and Forward Program and the development consent, the Resources Regulator will advise the lease holder and request that the Annual Rehabilitation Report and Forward Program be modified to reflect the requirements of the development consent and resubmitted.

Should the lease holder wish to modify an aspect of the relevant development consent, the lease holder must approach the consent authority with this request. Any modification to the development consent will require assessment and approval under the *Environmental Planning and Assessment Act 1979*.

Relationship with other annual reporting

Where an annual report is required to be submitted to the consent authority as a condition of a development consent granted under the *Environmental Planning and Assessment Act 1979*, an application can be made to the Department to align the reporting dates.

The Annual Rehabilitation Report and Forward Program has been designed so that it can form an appendix to an annual report.

Lease holders should be aware that the approval of the Forward Program by the Minister pursuant to the requirements of a mining lease does not negate any separate regulatory requirements, including other reporting requirements required under the development consent or other relevant legislation. Consequently, lease holders must consult with all relevant regulators when seeking to align reporting obligations.

Interaction with other regulations and approvals

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;
- an Aboriginal heritage impact permit under the *National Parks and Wildlife Act 1974*;
- licences or approvals under the *Water Management Act 2000* or the *Water Act 1912*, for activities or works that take, divert or use water;
- approvals under the *Heritage Act 1977* for the management of heritage items associated with an operation; 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.

Compliance requirements

The Minister and the Resources Regulator within the Department are responsible for regulating compliance for all matters relating to mining leases under the *Mining Act 1992*. The Resources Regulator's approach to compliance and enforcement is set out in its Compliance and Enforcement Approach 2017.

Lease holders must comply with the conditions of any mining lease(s) granted to them under the *Mining Act 1992*.

If the conditions of a mining lease require you to comply with any mandatory requirements of this Code, then a breach of those mandatory requirements will be a breach of the condition of the mining lease. If a condition of a mining lease is breached by any person, each holder of the mining lease will be guilty of an offence under section 378D of the *Mining Act 1992*. If there is any inconsistency between the mining lease conditions and this Code, the mining lease conditions prevail.

Approval Process

Following submission of an Annual Rehabilitation Report and Forward Program, the Department has a target of 30 business days to review and process the application.

The Department may suspend processing an application (i.e. "Stop the clock") if the Annual Rehabilitation Report and Forward Program does not address the conditions of mining lease or the mandatory requirements of this Code and additional information is required from the applicant to assist in the assessment of the application. The Department will recommence processing the application once all relevant information has been received.

Where a "stop-the-clock" is applied or the application is refused, the Minister will notify the applicant of the date by which further information or a revised application is required to be submitted.

Under the mining lease conditions, the lease holder must have the following components of the Annual Rehabilitation Report and Forward Program approved by the Minister: the Forward Program (Part 4 of the Mandatory Requirements). The remaining components of the Annual Rehabilitation Report and Forward Program do not require approval but must still be provided as they comprise essential context for assessing compliance and the progress towards meeting the Rehabilitation Objectives and Completion Criteria. The remaining components must be prepared to the satisfaction of the Minister.

The Annual Rehabilitation Report and Forward Program will be rejected if any component of it does not meet the requirements of the mining lease conditions and the mandatory requirements of this Code or if any component is inconsistent with the relevant development consent.

The Department will provide written notification of its decision, including the reasons for any rejection of the Annual Rehabilitation Report and Forward Program.

Lease holders should be aware that the approval of the Forward Program by the Minister does not negate any separate regulatory requirements, including other reporting requirements required under

the development consent or other relevant legislation. Consequently, lease holders must consult with all relevant regulators when seeking to align reporting obligations.

Triggers for an Annual Rehabilitation Report and Forward Program

The mining lease conditions require that an Annual Rehabilitation Report and Forward Program must be prepared and submitted to the Department at the following times, unless otherwise approved by the Minister in writing:

- before commencing initial surface disturbance;
- annually within 60 days from the end of the 12 month reporting period, established by the submission of the lease holder's first Annual Rehabilitation Report and Forward Program;
- within 30 days of the date mining operations are suspended in accordance with a written consent from the Minister for that suspension (clause 7A of Schedule 1B of the *Mining Act 1992*), and
- at all other times as directed by the Minister.

Amendment of an Annual Rehabilitation Report and Forward Program – Requests by lease holder

The lease holder must undertake mining operations and progressive rehabilitation in accordance with the approved Forward Program component of the Annual Rehabilitation Report and Forward Program. Where the leaseholder proposes an activity that is not in accordance with the approved Forward Program, the lease holder must submit an amended Annual Rehabilitation Report and Forward Program.

The Department will refuse an Annual Rehabilitation Report and Forward Program Amendment if it is considered the proposed activities are not consistent with the approved Rehabilitation Management Plan or do not comply with the development consent.

The lease holder should consult with the Department regarding the proposed changes prior to submitting the Annual Rehabilitation Report and Forward Program Amendment. Where the Department considers that the proposed amendments are minor in nature, the Department may advise that it is appropriate to report the amended activities in the next Annual Rehabilitation Report and Forward Program submission.

Departmental Review of Rehabilitation Performance

Throughout the life of the mine, the Department will regularly evaluate the adequacy of rehabilitation undertaken by a lease holder and review whether rehabilitation is trending towards achieving the Final Land Use. The Department's review of the Annual Rehabilitation Report and Forward Program and the following mechanisms are key to reviewing performance:

1. Department's inspection and audit program;
2. Review of the Rehabilitation Management Plan (specifically the Rehabilitation Objectives and Completion Criteria);

3. Review of monitoring data;
4. Review of any specialist advice and research studies;
5. Review of quality assurance records;
6. Review of the rehabilitation risk assessment;
7. Review of other relevant management plans; and
8. Review on-ground rehabilitation performance.

Privacy considerations

Where personal information is supplied to the Department as part of an Annual Rehabilitation Report and Forward Program submission and/or associated documentation, the *Privacy and Personal Information Protection Act 1998* requires that a person must be made aware that the information is being collected for that purpose and that the information may be made aware to the public. It is the responsibility of the lease holder to fulfil these requirements.

Further Information

For further information regarding the application of this Code please contact the Resources Regulator:

Phone: 02 4063 6688

Email: rehabilitation.projects@planning.nsw.gov.au

Website: <https://www.resourcesandenergy.nsw.gov.au/miners-and-explorers>

Further Reading

References to other externally published guidance material that may assist lease holders to comply with mining lease conditions are provided in **Appendix 1**.

Mandatory Requirements

Explanatory note 1: Mandatory Requirements

The following 4 parts set out the mandatory requirements of this Code. In preparing the Annual Rehabilitation Report and Forward Program, the lease holder must address the structure, form and content requirements in each part.

Under the mining lease conditions, the lease holder must have the Forward Program component of the Annual Rehabilitation Report and Forward Program approved by the Minister (refer to Part 4). The Annual Rehabilitation Report component does not require approval but must still be prepared to the satisfaction of the Minister as it provides essential context for assessing compliance against the lease holder's obligations.

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1. Part 1 – General

1.1 Structure of Annual Rehabilitation Report and Forward Program

The Annual Rehabilitation Report and Forward Program must have the parts, sections and sub-sections identified in the Mandatory Requirements Table of Contents and set out in Parts 2 to 4 (inclusive) of this Code.

Each part, section and sub-section of the Annual Rehabilitation Report and Forward Program must be identified by its name.

Each part, section and sub-section of the Annual Rehabilitation Report and Forward Program must contain the information specified for that part, section or sub-section (as set out in this Code).

1.2 Document format and submission requirements

The Annual Rehabilitation Report and Forward Program must be in PDF format and submitted to: minres.environment@planning.nsw.gov.au

1.3 Interpretation and glossary

In this Code:

1. a reference to a document is a reference to the most recent version of that document, as amended or replaced from time to time.
2. terms in this Code have the same meaning given to them in the *Mining Act 1992* and the conditions of the mining lease.

A glossary of terms used in this Code is provided at the end of this Code.

2. Part 2 – Lease Block

This part must have a Lease Block containing the following:

- a. Name of Mine
- b. Annual Rehabilitation Report Commencement Date
- c. Annual Rehabilitation Report Completion Date
- d. Forward Program Commencement Date
- e. Forward Program Completion Date
- f. Mining Leases (Lease No.)
- g. Name of lease holder(s)
- h. Name of Operator (if different)
- i. Name and Contact Details of the Manager (or equivalent)
- j. Name and Contact Details of Environmental Representative
- k. Name of Representative(s) of the Lease holder(s)
- l. Title of Representative(s) of the Lease holder(s)
- m. Signature of Representative(s) of the Lease holder(s)
- n. Date
- o. Version

The Lease Block must be on the first or second page of the Annual Rehabilitation Report and Forward Program.

The Lease Block must contain a certification made by or on behalf of the lease holder that the information provided is true and correct.

3. Part 3 - Annual Rehabilitation Report

3.1 Responsibilities for Mining and Rehabilitation Activities

This section must provide a list (in tabular form) of the key personnel, including their position titles and contact details, who are responsible for the operational, environmental and rehabilitation management of the mine site.

3.2 Current Development Consents, Leases and Licences

This section must show (in tabular form) the date of grant and duration of the following current approvals:

- a. project approval/s or development consent/s granted under the *Environmental Planning and Assessment Act 1979*;
- b. mining leases (and other mining authorities) granted under the *Mining Act 1992*;
- c. exploration licences and assessment leases granted under the *Mining Act 1992*; and
- d. all other relevant approvals and licences issued by Government agencies in respect of the mining operations.

Information must be included where there have been changes to the status of these approvals during the report period, including a summary of any new applications or modifications to existing approvals.

3.3 Land Ownership and Land Use

This section must provide details of any changes to the tenure of the mining lease area, including land ownership and occupancy, that has occurred during the report period.

3.4 Stakeholder Consultation

This section must summarise (in tabular form) any engagement activities that were undertaken with relevant stakeholders (as identified in the Rehabilitation Management Plan) during the report period in relation to rehabilitation.

This summary must identify each relevant stakeholder (e.g. the Department, other Government agencies, landholders etc.), the method of how they have been consulted and any resultant expectations and agreements in relation to the refinement of the Final Land Use and Rehabilitation Objectives and Completion Criteria.

3.5 Mining and Rehabilitation Activities during the Report Period

This section must provide a brief overview of mining operations including rehabilitation activities that were undertaken over the previous 12 months (during the report period). This must include a description of the activities undertaken on areas depicted in **Plan 1 – Status of mining and rehabilitation at completion of reporting period** (refer to section 3.6).

Information **must** include, but is not limited to, the following:

- a. a description of the mining and rehabilitation activities that were conducted, and, an analysis of the progress against the predicted schedule presented in the previous Annual Rehabilitation Report and Forward Program, as well as any relevant development consent;
- b. a description of any rehabilitation planning activities that were conducted including any specialist studies (e.g. contamination; heritage; landform design; demolition);
- c. an overview of any subsidence repair/remediation works undertaken;
- d. an overview of rehabilitation care and maintenance activities (e.g. re-seeding; weed and feral animal control; erosion control works etc.);
- e. details of any actions taken as required by any letters, notices or directions issued by Government agencies, including the Department;
- f. details of any rehabilitation areas that have met the approved Rehabilitation Objectives and Completion Criteria (that is, the Department has determined that the relevant rehabilitation obligations have been fulfilled following an application by the lease holder);
- g. a material production schedule by completing **Table 1**.

Table 1. Material production during previous report period

Material	Unit	Report Period
Stripped topsoil	m ³	
Rock/Overburden	m ³	
Ore or ROM Coal	Mt	
Reject material ²	Mt	
Product	Mt	

² This includes coarse rejects, tailings and any other wastes resulting from beneficiation.

If the rehabilitation schedule undertaken during the report period is not consistent with the predicted schedule presented in the approved Forward Program (e.g. within the previous Annual Rehabilitation Report and Forward Program), this section must:

- a. identify the components of the approved Forward Program that were not achieved;
- b. identify the key factors that have delayed the progressive rehabilitation schedule and the timing for any corrective actions; and
- c. include steps taken to minimise disturbance and undertake progressive rehabilitation as far as reasonably practical.

3.6 Plan 1 – Status of mining and rehabilitation at completion of report period

An Annual Rehabilitation Report must include a pdf version of **Plan 1 – Status of mining and rehabilitation at completion of report period (Plan 1)**. **Plan 1** shows the status of mining and rehabilitation areas at the end of the reporting period. As a minimum, the plan should include the following information:

- mining lease and exploration licence boundaries;
- development consent or project approval boundary;
- Mining and Rehabilitation domains, including the following:
 - total active disturbance (includes: 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 temporary stabilised areas (e.g. temporary rehabilitation));
 - land being prepared for rehabilitation (includes the sum of mine disturbed land that are under the following rehabilitation phases – Decommissioning, Landform Establishment and Growth Medium Development);
 - Ecosystem and Land Use Establishment;
 - Ecosystem and Land Use Development; and
 - Rehabilitation Completion.

3.7 Mining and Rehabilitation Statistics

Explanatory note 2: Disturbance and rehabilitation reporting categories

Rehabilitation areas often progress through the initial phases of rehabilitation (Decommissioning, Landform Establishment and Growth Media Development) in a short period of time. For the purposes of rehabilitation reporting, a modified classification of rehabilitation categories is to be adopted in the Annual Rehabilitation Report and Forward Program.

Specifically, Decommissioning, Landform Establishment and Growth Media Development are referred to as Rehabilitation – Land Preparation.

A description of each disturbance and rehabilitation reporting category is provided in **Table 3**.

3.7.1. Current Disturbance and Rehabilitation Progression

This section must provide a summary of the current disturbance and rehabilitation status at the end of the report period by completing **Table 2**. Table 2 must be included in the Annual Rehabilitation Report and Forward Program. The disturbance and reporting information provided in Table 2 must be consistent with the definitions of these reporting categories set out in **Table 3**.

All values reported in **Table 2** must be consistent with **Plan 1**.

Table 2. Status of disturbance and rehabilitation at end of reporting period

Year	Total Disturbance Footprint – surface disturbance	Underground Mining Area	Total Active Disturbance	Rehabilitation – Land Preparation	Ecosystem & Land Use Establishment	Ecosystem & Land Use Development	Rehabilitation Completion
	(A1) *	(A2) *	(B)*	(C)*	(D)*	(E)*	(F)*
Status (hectares)							

***Note:** Definitions for each disturbance and rehabilitation reporting category are provided in **Table 3**

Table 3. Disturbance and rehabilitation reporting categories

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 mining and associated activities.</p> <p>As such the Total Disturbance Footprint is the sum of Total Active Disturbance, Decommissioning, Landform Establishment, Growth Medium Development, Ecosystem and Land Use Establishment, Ecosystem and Land Use Development and Rehabilitation Completion.</p> <p>Please note: underground mining operations are to exclude the footprint of Underground Mining Areas / subsidence management areas.</p>

Reporting Category	Definition
A2 Underground mining area	Includes all underground mining operations areas/ subsidence management areas.
B Total Active Disturbance	Includes: on-lease exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, waste rock emplacements (active/unshaped/in or out-of-pit), tailings dams (active/unshaped/uncapped) and temporary stabilised areas (e.g. areas sown with temporary cover crops for dust mitigation and temporary rehabilitation).
C Rehabilitation – Land Preparation	Includes the sum of all disturbed land within a mining lease that have commenced any or all of the following rehabilitation phases – Decommissioning, Landform Establishment and Growth Medium Development. Refer to the Glossary for the definition of these rehabilitation phases.
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 may be in this phase in the order of 2 or more years before rehabilitation can be classified as being in the Ecosystem and Land Use Development phase. This phase does not apply to infrastructure areas that are being retained as part of Final Land Use for the site.
E Ecosystem and Land Use Development	Rehabilitation has matured to a level where target revegetation outcomes are on a trajectory towards meeting the final Rehabilitation Objectives and Completion Criteria (as verified by monitoring). This phase includes infrastructure areas that are to be retained for an approved post mining land use, following completion of all necessary measures to render the infrastructure fit for this purpose (e.g. structural integrity).
F Rehabilitation Completion	Formal sign-off has been received from the Department that the area has successfully met the Rehabilitation Objectives and Completion Criteria.

3.7.2. Rehabilitation Key Performance Indicators

Explanatory note 3: Rehabilitation reporting statistics

Lease holders must provide rehabilitation statistics in the Annual Rehabilitation Report. Rehabilitation statistics provide context and transparency with respect to rehabilitation performance by reporting:

- cumulative disturbance and rehabilitation since the commencement of mining;
- annual changes in disturbance and rehabilitation area; and
- progression of rehabilitation areas to established rehabilitation.

The information in **Table 2** provides a summary for the status of disturbance and rehabilitation since the commencement of mining up until the end of the report period. The status summary may assist the lease holder to:

- calculate cumulative disturbance and rehabilitation totals;
- compare actual areas to predictions in the approved Forward Program (e.g. within the previous Annual Rehabilitation Report and Forward Program) for the report period; and
- calculate rehabilitation cost estimates.

The information in **Table 4** includes the key performance indicators associated with disturbance and rehabilitation areas in the previous 12 months (the reporting period). This information provides context for the Department’s assessment of the progressive rehabilitation performance.

Based on the current mining and rehabilitation schedules, this section must identify the rehabilitation key performance indicators by completing **Table 4**.

Table 4. Rehabilitation key performance indicators at end of report period

Year	New Active Disturbance Area (hectares)	New rehabilitation commenced during report period (hectares)	Established rehabilitation (hectares)	Annual rehabilitation to disturbance ratio	% Rehabilitated land to total mine footprint
	(G)*	(H) *	(I) *	(J) *	(K) *

Insert date

***Notes:**

G The area of any new active disturbance that has been created during the report period, as defined under definition A1.

H The sum of any **new** rehabilitation commenced in the report period. These areas may be in the phases “Rehabilitation - Land Preparation” or the “Ecosystem & Land Use Establishment” (definitions C & D in Table 3).

- I The total area of land that is verified to be within either the “Ecosystem & Land Use Development” or “Rehabilitation Completion” phases (definitions E & F in Table 3).
- J 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 indicates that the area of new rehabilitation and disturbance in that year are the same.
- K The proportion of the total mine footprint (area of land that has been disturbed by past or present mining activities) that has established rehabilitation ($I / A1 \times 100$). This is a lead indicator for the extent of progressive rehabilitation. 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.

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4. Part 4 – Forward Program

4.1 Three Year Mining Activities Forecast

4.1.1. Project Description

This section must summarise the mining project, including the expected mine life. This section must also outline the sequence and staging of mining operations over the next 3-year term, consistent with the development consent.

4.1.2. Description of Activities

This section must detail the operations that specifically relate to the next 3-year term³.

The following sections must be included.

a. Exploration Activities

Identify and describe scheduled exploration activities that may be conducted in association with the operation, including on areas within the mining leases.

b. Construction Activities

Identify and describe any construction activities scheduled for the next 3-year term.

c. Mining Schedule

Outline the general sequence and staging of mining operations over the next 3 years, which is to be consistent with the relevant development consent(s). This must include the following:

- a description of the method of mining development and sequencing and general mine features. This should identify and discuss any plans for disturbing previously rehabilitated areas and discuss how and where they may be offset.
- a description of the areas identified for emplacements, the sequencing of emplacements, construction and management.
- the identification of processing infrastructure activities and the location of tailings facilities and schedule for emplacement.
- a description of waste disposal and materials handling operations over the next 3-year period. This should include a discussion of disposal of putrescible waste, hydrocarbons, and management of contaminated soils.

This section must provide an outline of the key production milestones that underpins the proposed rehabilitation schedule (as outlined in **section 4.2** and **section 4.3**).

Table 5 must be completed.

³ The Department will assess the mining operations and rehabilitation schedule proposed in the next 3-year term. As the subsequent Annual Rehabilitation Report and Forward Program will annually update the 3 year forward program, years 2 and 3 of each forward program will be considered as indicative and will be used by the Department to understand the likely rehabilitation liability when assessing rehabilitation security deposits.

Note: It is recognised that the progress of mining operations may affect the progressive rehabilitation schedule.

Table 5. Material production schedule during the next 3 years

Material	Unit	Year 1	Year 2	Year 3
Stripped topsoil	m ³			
Rock/Overburden	m ³			
Ore or ROM Coal	Mt			
Reject material ⁴	Mt			
Product	Mt			

4.2 Three Year Rehabilitation Forecast

a. Rehabilitation Planning Activities

This section must provide an overview of the rehabilitation planning activities that are scheduled to take place over the next 3-year term⁵, including:

- corrective action measures to address performance issues and/or knowledge gaps identified in the Annual Rehabilitation Report;
- studies required to address potential knowledge gaps to inform the scope of rehabilitation activities (e.g. Final Land Use options, contamination, building demolition, heritage, geotechnical, surface and groundwater hydrology, geochemical, structural assessments and dilapidation surveys on infrastructure etc.);
- relevant stakeholder consultation (as defined in RMP), specifically regarding the refinement of the Final Land Use and associated Rehabilitation Objectives and Completion Criteria; and
- rehabilitation design work including final landform, surface water management, final void management, tailings dam decommissioning etc.

b. Rehabilitation Schedule

This section must describe the mining and rehabilitation schedule over the next 3-year term.

This section must describe how the lease holder will implement progressive rehabilitation to minimise the disturbance area as far as reasonably practical.

The rehabilitation schedule must be used as the basis to complete the rehabilitation statistics required in **section 3.7** above.

⁴ Where relevant this includes coarse rejects, tailings and any other wastes resulting from beneficiation.

⁵ The Department will assess the mining operations and rehabilitation schedule proposed in the next 3-year term. As the subsequent Annual Rehabilitation Report and Forward Program will annually update the 3 year forward program, years 2 and 3 of each forward program will be considered as indicative and will be used by the Department to understand the likely rehabilitation liability when assessing rehabilitation security deposits.

Note: An effective and efficient means to achieve sustainable rehabilitation outcomes is to implement a Forward Program which facilitates rehabilitation throughout the life cycle of a mining project.

Guideline 3: Rehabilitation Controls has been developed to assist lease holders to identify and evaluate the rehabilitation processes, controls and techniques that should be considered and used by lease holders as part of a Forward Program.

c. Subsidence Remediation for Underground Operations

This section must provide an overview of the nature and scope of any subsidence monitoring and expected remediation works proposed to be conducted over the next 3 years.

For underground coal mining operations, reference can be made to any relevant extraction plans/subsidence management plans that have been submitted to the Department.

d. Temporary Stabilisation

This section must identify the location of, and reasons for, undertaking temporary stabilisation works. This must include information on proposed landforms, stabilisation methods and time frames for the temporary rehabilitation (where applicable).

4.3 Progressive Mining and Rehabilitation Statistics

4.3.1. Three Yearly Forecast Cumulative Disturbance and Rehabilitation Progression

Based on the information presented in **Plan 2**, this section must provide a summary of the forecast cumulative disturbance and rehabilitation progression during the next 3-year term in **Table 6**.

Predictions for “Ecosystem and Land Use Development” and “Rehabilitation Completion” will be lead indicators. Predictions for “Ecosystem and Land Use Development” and “Rehabilitation Completion” will be lead indicators. For rehabilitation to be classified within either of these phases, site verification (by the Department) and records must be included as part of the ongoing rehabilitation monitoring program to provide evidence of rehabilitation classification.

Table 6. Predicted cumulative disturbance and rehabilitation progression during the next 3-year term (hectares)

Year	Total Disturbance Footprint – Surface Disturbance	Underground Mining Area	Total Active Disturbance	Rehabilitation - Land Preparation	Ecosystem & Land Use Establishment
	(A1)*	(A2) *	(B)*	(C)*	(D)*
1					
2					
3					

***Note:** Definitions for each mining and rehabilitation phase are outlined in Table 3.

Explanatory note 4: Disturbance and rehabilitation progress

The purpose of the information in **Table 6** is to provide a detailed break-down of disturbance and rehabilitation progress on an annual basis. This is a transparent way of:

- calculating cumulative disturbance and rehabilitation totals;
- developing rehabilitation targets and key performance indicators (refer to **Table 7**);
- comparing actual areas and reasons for change as per the Annual Rehabilitation Report and Program; and calculating rehabilitation cost estimates.

4.3.2. Rehabilitation Key Performance Indicators

Based on the proposed mining and rehabilitation schedules included in **Tables 5** and **6**, this section must identify progressive rehabilitation key performance indicators in **Table 7**. **Table 7** must be completed.

Table 7. Progressive rehabilitation key performance indicators during the next 3-year term

Year	Total New Active Disturbance Area (hectares)	Area of land proposed for active rehabilitation during period (hectares)	Annual rehabilitation to disturbance ratio
	(O) *	(P) *	(Q) *
1			
2			
3			

*Key

- O The area of any new active disturbance that will be created during the next 3 year term, as defined under definition A1.
- P The sum of any **new** rehabilitation to be commenced in the next 3 year term. These areas may be in the phases “Rehabilitation - Land Preparation” or the “Ecosystem & Land Use Establishment” (definitions C & D in Table 3).
- Q The rehabilitation to disturbance ratio (P / O) indicates how many hectares of new rehabilitation are undertaken for each hectare of land disturbed during the 3 year term. A ratio of 1 indicates that the area of new rehabilitation and disturbance in that period are the same.

Glossary

Term	Definition
Access track	All unsealed routes that will be traversed multiple times, but does not include single pass (ingress and egress) routes or seismic survey shot and receiver lines.
Active	In the context of rehabilitation, land associated with mining domains is considered 'active' for the period following disturbance until the commencement of rehabilitation.
Annual Rehabilitation Report	A report that sets out the rehabilitation carried out for the Land in the previous 12-month period and is prepared in accordance with the <i>Annual Rehabilitation Report and Forward Program Code</i> .
Biodiversity offset	Land secured and managed for the protection and enhancement of biodiversity values. The biodiversity offsets scheme is set out in Section 6.2 of the <i>Biodiversity Conservation Act 2016</i> .
Biological resources	<p>In biology and ecology, a substance that is required by an organism for normal growth, maintenance or reproduction.</p> <p>In the context of rehabilitation, biological resources are those materials salvaged from the land, or sourced externally, that are used to enhance the biological and ecological functioning of a rehabilitated site.</p> <p>Includes topsoil and subsoils, woody or vegetative materials, rocks and nesting structures.</p>
Borehole	<p>A hole made by drilling or boring but excluding:</p> <ul style="list-style-type: none">• sampling and coring using hand held equipment; and• petroleum wells.
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).
Completion criteria	Defined in the mining lease conditions. Objective target levels, or values, or standards contained in the Rehabilitation Management

Term	Definition
	<p>Plan that are measured to quantitatively demonstrate the progress and ultimate success of rehabilitation.</p> <p>For further description, these are the attributes (indicators) and target values (typically numerical) that must be achieved to demonstrate that rehabilitation objectives have been met prior to the relinquishment of a mining lease. They may include an element based on time.</p>
Conservation Agreement	An agreement made under section 305 of the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth).
Conservation Area	A defined area on a mining lease that is set aside for conservation and is not disturbed by the mining process.
Decommissioning	The process of removing mining infrastructure and removing contaminants and hazardous materials.
Department	The NSW Department of Planning and Environment.
Disturbance	See Surface Disturbance
Disturbance area	<p>An area that has been disturbed for mining related activities, requiring rehabilitation to be suitable for approved Final Land Use.</p> <p>Includes 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 temporary stabilised areas (e.g. temporary rehabilitation).</p>
Domain	A land management unit usually with similar geophysical characteristics.
Drilling	The perforation of the earth's surface crust by mechanical means, whether the hole caused by the perforation is vertical, inclined or horizontal, and includes all operations for preventing collapse of the sides of any such hole or for preventing it from being filled with extraneous materials including water.
Ecosystem and Land Use Establishment	The process of establishing the Final Land Use following construction of the final landform. For vegetated land uses this rehabilitation phase includes establishing the desired vegetation

Term	Definition
	community and implementing land management activities such as weed control.
Ecosystem and Land Use Development	The process of managing maturing rehabilitation areas on a trajectory toward meeting the approved Rehabilitation Objectives and Completion Criteria.
Environment Protection Licence (EPL)	Has the same meaning as that term under the <i>Protection of the Environment Operations Act 1997</i> .
Exploration	Has the same meaning as that term under the <i>State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007</i> .
Fauna	Has the same meaning as that term under the <i>National Parks and Wildlife Act 1974</i> .
Final Land Use	Refer to mining lease conditions. In simple terms, it is the final land form/s and land use/s following completion of all rehabilitation.
Final Land Use Domains	<p>Land management units characterised by a discrete or specific Final Land Use.</p> <p>Examples of Final Land Use Domain(s) include, but are not limited to:</p> <ul style="list-style-type: none"> • Native Ecosystem; • Agricultural – Grazing; • Agricultural – Cropping; • Biophysical Strategic Agricultural Land (BSAL) • Rehabilitation area as a Biodiversity Offset; • Industrial; • Water Management Areas; • Water Storage (Excluding Final Void); • Heritage Area; • Infrastructure; and • Final Void.
Forward Program	Means a program that specifies all rehabilitation, monitoring and related activities to be carried out on, in, under or over the Land for the next 3 years that is prepared in accordance with the <i>Annual Rehabilitation Report and Forward Program Code</i> .

Term	Definition
Growth Medium Development	The establishment of the physical, chemical and biological components of the substrate required to establish the desired vegetation community (including short lived pioneer species). (For example, development of a productive, self-sustaining soil profile).
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).
Land	Refer to the mining lease conditions. In simple terms, it is the area of land to which a mining lease applies.
Landform Establishment	The process of constructing the final landform surface profile.
Large mine	A mine which requires an Environment Protection Licence under the <i>Protection of the Environment Operations Act 1997</i> .
Mining Domain	Defined in the mining lease conditions as 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).
Minister	The Minister administering 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 (e.g. pH, slope, 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.
Phase of rehabilitation	Defined in the mining lease conditions. By way of further description, a phase of rehabilitation is a logical step in the process of achieving the Final Land Use. Phases are successive and generally require demonstrated completion of an earlier phase before the next stage can be commenced. Phases of

Term	Definition
	mining include active mining, decommissioning, landform establishment, growth medium development, ecosystem and land use establishment, ecosystem and land use development and relinquished lands.
Progress	A description of where mining and rehabilitation are in relation to meeting completion criteria. This may be described in terms of domains, phases, performance indicators and completion criteria.
Progressive rehabilitation	Defined in the mining lease conditions. Means that the rehabilitation of the Land is carried out as soon as practicable following surface disturbance, so that that part of the Land progresses through the phases of rehabilitation in a timely manner to achieve the Final Land Use.
Rehabilitation Completion	The final phase of rehabilitation where all approved Rehabilitation Objectives and Completion Criteria for the intended Final Land Use are met (verified by records).
Rehabilitation cost estimate	The estimate of the cost to rehabilitate all liabilities and obligations associated with a mining lease, and other relevant legislative requirements, at a nominated point in time.
Rehabilitation Management Plan	The plan that sets out the overarching framework for rehabilitation planning and implementation for the Land that is prepared in accordance with the <i>Rehabilitation Management Plan Code</i> .
Rehabilitation Management Plan Code	means: <ul style="list-style-type: none"> • for a Small Mine – the <i>Code of Practice: Rehabilitation Management Plan for Small Mines</i>, or • for a Large Mine – the <i>Code of Practice: Rehabilitation Management Plan for Large Mines</i>.
Rehabilitation Objectives	<p>Defined in the mining lease conditions as objectives contained in the Rehabilitation Management Plan that describe the qualities or features of the Final Land Use Domains that must be demonstrated through the rehabilitation process to achieve the Final Land Use.</p> <p>For further description, these may include environmental, social and economic outcomes. They may be described in terms of Final Land Use, biodiversity values, conservation values, health and safety outcomes, aesthetics or social outcomes or combinations of these. The Rehabilitation Objectives must be consistent with any rehabilitation objectives approved in the development consent.</p>

Term	Definition
Rehabilitation Phases	Refer to Phase of Rehabilitation
Rehabilitation Schedule	The defined timeframes for progressive rehabilitation set out in the Forward Program.
Relevant stakeholders	<p>Means persons or bodies who may be affected by the activities carried out on the land, and includes:</p> <ol style="list-style-type: none"> a. the relevant development consent authority; b. the local council; c. community consultative committee (if required under the development consent) or equivalent consultative group; d. affected land holder(s); e. government agencies relevant to the Final Land Use; f. affected infrastructure authorities (electricity, telecommunications, water, pipeline, road, rail authorities); g. local Aboriginal communities; and <p>any other person or body determined by the Minister to be a relevant stakeholder in relation to a mining lease.</p>
Risk	The chance of something happening that will have an impact upon objectives. It is measured in terms of consequences and likelihood (AS/NZS ISO 31000:2009).
(risk) control	A measure (process, device practice or action) that modifies a risk.
River	Has the same meaning as that term under the <i>Water Management Act 2000</i> .
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 under that may arise in the future).
Small mine	A mine which does not require an Environment Protection Licence under the <i>Protection of the Environment Operations Act 1997</i> .
State significant development (SSD)	<p>Has the same meaning as that term under the <i>Environmental Planning and Assessment Act 1979</i>.</p> <p>Note: Schedules 1 and 2 of <i>State Environmental Planning Policy (State and Regional Development) 2011</i> provide a full list of SSD</p>

Term	Definition
	types and identified sites. Large mining and extraction operations (including all coal mines) are identified as SSD.
Surface Disturbance	<p>Defined in the mining lease conditions as any disturbance of any part of the Land arising from activities under this lease.</p> <p>Examples of surface disturbance include:</p> <ul style="list-style-type: none"> disturbance, exposure, or covering of the surface of the land in any manner for any mining related purpose or as a result of any activities carried out under the lease; and the degradation or deterioration in any manner of the physical surface of the land caused by any activities carried out under the lease.
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 ⁶ .
Temporary stabilisation	The short-term stabilisation and vegetation of an area that is intended to be utilised in the future as an active mine site. It is to be treated as an active mine site for reporting purposes.
Lease holder	The holder of a mining lease.
Waste	Has the same meaning as that term under the <i>Protection of the Environment Operations Act 1997</i> .
Watercourse	A river, estuary or lake, as those terms are defined under the <i>Water Management Act 2000</i> .
Wetland	Has the same meaning as that term under clause 38 of the <i>Environmental Planning and Assessment Regulation 2000</i> .

⁶ Commonwealth of Australia (DITR), 2007. *Tailings Management*.

Appendix 1. Further Reading

- Australian Government, Department of Industry, Innovation and Science 2016: Leading Practice Sustainable Development Program for the Mining Industry – Mine Rehabilitation
- Australian Government, Department of Industry, Innovation and Science 2016: Leading Practice Sustainable Development Program for the Mining Industry – Mine Closure and Completion
- Australian Government, Department of Industry, Innovation and Science 2016: Leading Practice Sustainable Development Program for the Mining Industry – Hazardous Materials Management
- Australian Government, Department of Industry, Innovation and Science 2016: Leading Practice Sustainable Development Program for the Mining Industry – Biodiversity Management
- Australian Government, Department of Industry, Innovation and Science 2016: Leading Practice Sustainable Development Program for the Mining Industry – Managing Acid and Metalliferous Drainage
- Australian Government, Department of Industry, Innovation and Science 2016: Leading Practice Sustainable Development Program for the Mining Industry – Tailings Management
- Australian Government, Department of Industry, Innovation and Science 2016: Leading Practice Sustainable Development Program for the Mining Industry – Cyanide Management Australian Government, Department of Industry, Innovation and Science 2016: Leading Practice Sustainable Development Program for the Mining Industry – Evaluating Performance: Monitoring and Auditing
- Australian National Committee on Large Dams Incorporated (ANCOLD) 2012: Guidelines on Tailings Dams – Planning, Design, Construction, Operation and Closure
- Gullison, R.E, J. Hardner, S. Anstee, M. Meyer. 2015: Good Practices for the Collection of Biodiversity Baseline Data. Prepared for the Multilateral Financing Institutions Biodiversity Working Group & Cross-Sector Biodiversity Initiative
- Ian D. Rutherford, Kathryn Jerie and Nicholas Marsh (2000). A Rehabilitation Manual for Australian Steams. Cooperative Research Centre for Catchment Hydrology. Land and Water Resources Research and Development Corporation 2000.
- International Council on Mining and Metals January 2011: Planning for Integrated Mine Closure: Tool Kit
- Landcom 2004a: Managing Urban Stormwater: Soils and Construction
- Landcom 2004b: Managing Urban Stormwater: Soils and Construction Volume 2E, Mines and Quarries
- P. Cottingham, N. Bond, P.S. Lake, A. Arthington & D. Outhet (2005) Recent Lessons on Riverine Rehabilitation in Eastern Australia. Cooperative Research Centre for Freshwater Ecology, Canberra