

# Rehabilitation Report Structure Guide for Exploration Operations

An application for a Certificate of Closure is required to be submitted when all exploration, rehabilitation and closure activities associated with an Authorisation have been successfully completed (Section 46 *Mining Management Act*).

A Rehabilitation Report must accompany an application for a Certificate of Closure.

This document provides general guidance for preparing a Rehabilitation Report to meet obligations under the [Mining Management Act](#) (MMA). This document can also be used as a template to prepare the Rehabilitation Report.

While this document attempts to provide a framework for the operator to capture the majority of information required for an acceptable Rehabilitation Report, an operator may be required to provide additional information to the department for the purposes of further assessing the performance of the rehabilitation and closure activities detailed in the Rehabilitation Report.

- A person must not knowingly provide information to the department that is false or misleading (Part 9, Section 72, MMA).
- All commitments must be specific and auditable with measurable outcomes and clear timeframes.
- Use the terms 'will' and 'must', rather than 'should' or 'may' when committing to carry out management actions.
- Do not use ambiguous terminology such as 'where possible', 'as required', 'to the greatest extent possible' without further explanation.
- Clearly explain any technical terms or acronyms used, and/or define them in a glossary.

The department may visit the project area to verify that the rehabilitation and closure activities have been successfully completed and the area is safe, stable and non-polluting.

Security held by the department against the Authorisation will be released when the Rehabilitation Report has been approved and/or a Certificate of Closure issued.

# Exploration Operations Rehabilitation Report

Include the following details on the title page:

- Operator Name
- Project Name
- Authorisation Number
- Date
- Document Distribution List

The Rehabilitation Report must be endorsed by a senior representative of the company who has the appropriate level of delegation.

	Author	Reviewed by	Approved by
Date			
Name			
Signature			

I ..... (*name of approving person*) ..... (*position title*) declare that to the best of my knowledge the information contained in this mining management plan is true and correct and commit to undertake the works detailed in this plan in accordance with all the relevant Local, Northern Territory and Commonwealth Government legislation.

**SIGNATURE:** .....

**DATE:**.....

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## 1 Operator Details

Provide operator details including:

- Name of operator or company (as per Australian Securities and Investment Commission (ASIC) if applicable)
- Key contacts (ie senior on site personnel, exploration manager)
- Postal and street address
- Phone/fax/email contact details

## 2 Project Details

Provide details of the exploration project including:

- Authorisation Number;
- Project name;
- Location in context of distance to nearest town/major features/roads;
- Mining interest/s (ie titles); and
- Title holder/s.
- Status of titles (ie ceased/surrendered)

Details of how to access the site must be provided. If track files exist, these should also be provided.

### 2.1 Location maps and site plans:

Legible and detailed maps and site diagrams must be provided which show the location and access to the proposed activities , eg drill holes and tracks, and must also include the following information:

- background imagery of 1:250K topography or satellite image
- labelled mining title boundaries and pastoral lease boundaries
- townships and communities
- major roads
- minor roads, tracks and grid lines (including proposed drill access tracks)
- Easements – above and below ground electrical cables, gas pipelines, water pipelines, telephone cables
- major and minor waterways
- existing topographic features
- prospects and target areas
- drill locations
- area of geophysical surveys
- site access
- environmentally sensitive areas (Sites of Conservation Significance)
- protected areas (National Parks and Reserves)
- cultural / heritage zones (AAPA restricted areas and No-Go zones)
- exploration camp sites
- other disturbances.

**NOTE:** All maps must include a scale, date of drawing, orientation (ie North point), contours and be able to be overlaid on the previous site plan.

### 2.2 Previous Activities

A summary of any historical mining or exploration carried out in the area should also be provided.

This section must outline the programs that were proposed and whether the program was fulfilled for each year the Authorisation was active.

This information may be included in the form of a table and must as a minimum include:

- type of drilling
- number of holes proposed
- number of holes actually drilled
- maximum depth of holes
- the title that exploration activities were conducted on
- actual size and number of drill pads (m<sup>2</sup>), sumps (m<sup>3</sup>), tracks (km), camp areas (ha) cleared
- actual size and number of costeans and bulk sample pits excavated (m<sup>3</sup>)
- actual size of any other disturbance.

This section must also outline any previous site activities that were not accounted for under the Mining Management Plan (MMP) (ie outstanding drill holes from historical exploration).

Also indicate if groundwater was intercepted during drilling and specify the depth it was encountered.

If any commitment were made in previous MMPs (ie monitoring for weeds and threatened species), information must be included on whether this commitment was met.

A register as an appendix or table must be included and contain coordinates of all drilling and any other site disturbances previously undertaken.

**NOTE:** A Rehabilitation Register is required to be provided in Section 3 *Exploration Rehabilitation* of this document. The Rehabilitation Register summarises the rehabilitation status of all drill sites and tracks while the Authorisation was active, the rehabilitation methods used and evidence of rehabilitation (before and after photos).

**NOTE:** The department will require these disturbance areas be provided in an appropriate spatial dataset (ie gpx, kmz or kml files, MapInfo tab files or ARC GIS files).

## 3.0 Exploration Rehabilitation

An example of a Rehabilitation Checklist is provided in **Attachment A**.

The information required in this section may be included in the form of a table. An example has been provided in **Attachment B**.

**NOTE:** The department's Advisory Notes are available online for general guidance however these are not statutory requirements and must be assessed for appropriateness to individual sites. Advisory Notes are reviewed regularly and may change from time to time. If using the Advisory Notes, the practices to be implemented should be summarised and the Advisory Note must be referenced.

### 3.1 Rehabilitation Methods

This section must detail the rehabilitation activities completed for each disturbance type including details of plugging, capping, infilling of drill holes, replacement of topsoil, revegetation techniques, infilling of sumps, recontouring drill pads, ripping/scarification of tracks etc.

This section must also detail the rehabilitation completed on camp areas (if applicable), including the removal of infrastructure such as water bores, hydrocarbon storage areas, septic tanks, land fill locations, etc.

It is expected that all sample and reject bags will be removed from site within six (6) months of completion of the hole. All drill collars will be temporarily capped immediately after drilling, then collars will be cut-off or removed and holes plugged.

The departments guidance for 'Construction and Rehabilitation of Exploration Drill Sites' can be found at: <https://nt.gov.au/minerals-energy>.

### 3.2 Objectives and Targets

What were your objectives and targets for rehabilitation and closure? Did they change throughout the operation? Have closure objectives/targets been met?

### 3.3 Post Closure Monitoring

Detail how rehabilitation success was measured and monitored, eg in terms of water, erosion, vegetation, stabilisation etc. Has post closure monitoring been conducted to determine rehabilitation success? What aspects were monitored? Did monitoring indicate successful rehabilitation? What corrective actions were undertaken as a result of failed rehabilitation? If any remedial works were required as identified during post closure monitoring, this should also be detailed here with supporting photographs.

### 3.4 Remaining Liability

Any remaining disturbances/liability should be outlined here. Supporting documentation needs to be provided as evidence of the underlying landowner's (or other relevant stakeholder's) request for retention of infrastructure, such as tracks.

If you have any outstanding/remaining liabilities, how have you minimised/reduced the risk of these becoming a burden on the underlying landowner?

**Note:** If the department consider the remaining liability to be high risk, the operator may be advised to stabilise or rehabilitate the liability. For instance, if tracks are located in highly erodible areas, the operator must ensure the tracks are stable and the appropriate controls are in place prior to hand over.

### 3.5 Exploration Rehabilitation

#### 3.5.1 Exploration Rehabilitation Register

A Rehabilitation Register summarising the rehabilitation status of all disturbances associated with exploration activities (eg exploration drill holes, costeans or bulk sample sites etc.) must be provided as an appendix to the MMP as supporting documentation. The register must include the site ID, the MMP reference for when the activity was proposed, disturbance and drill hole GPS coordinates and details of the rehabilitation undertaken, evidence of rehabilitation (before site disturbance and after rehabilitation photographs) and include any monitoring of the sites in subsequent years.

#### 3.5.2 Rehabilitation Photographs

Before site disturbance and after rehabilitation photographs are required and may be included as appendices to demonstrate that rehabilitation activities have been carried out. Photographs must:

- be labelled with drill hole identification name/number
- include the date when the photograph was taken
- be taken from the same point and be consistent in orientation (ie from the north east corner of the drill pas facing south west)
- include an identifying feature or reference point for comparison (ie a tree in the foreground or a hill in the background).

Photographs must be taken of all holes and a selection of these that represent the general standard of rehabilitation is to be included in the report to adequately demonstrate rehabilitation success. Photographs are not required to be submitted for every drill hole, as this is not always practical for larger exploration programs, but must be available on request from the department.

Photographs should also be provided of camps, hydrocarbon storage areas, costeans and tracks, particularly those occurring in high risk areas such as creek crossings, steep slopes or in proximity of known erosion area (ie bull dust areas, dispersive soils etc).

For example:



Figure 1. RC01 after rehabilitation (20 September 2011).

Ongoing monitoring and photographs of the sites must be undertaken after a significant rainfall event, at least one year (ie at least one wet season) and in subsequent years to ensure vegetation is regenerating successfully and to follow-up on any failed rehabilitation (eg hole plug failure, water seepage, vegetation regrowth or site erosion etc.).

**An example of a Rehabilitation Register is provided in Attachment C**

### **4.0 Radiation Monitoring**

For exploration programs that were targeting naturally occurring radioactive material (NORM) or sites that are located in known radioactive areas, radiation monitoring should have been conducted before the site was cleared for drilling and then after rehabilitation was completed. This can be presented in a table and should include the date the reading was taken, drill hole ID, dose rate before drilling ( $\mu\text{Sv/hr}$ ) and dose rate after rehabilitation.

Attachment A - Example of a Rehabilitation Checklist

Hole ID	Date Drilled	Drill hole Coordinates (GDA94 Lat\Long or GDA94 Zone # UTM)	Rehabilitation (✓ or date completed)									Post-closure Monitoring (1 Year after)						Sign off and Comments	
			Drill holes plugged/capped	Drill spoils buried/backfilled	Sample bags/core removed	Sumps backfilled	Topsoil/vegetation replaced	Drill pad ripped	Access track ripped	Rubbish removed	Is radiation within background levels?	Date of Monitoring	Is site nominated for ongoing monitoring?	Is the site revegetated?	Are there signs of erosion?	Are there weeds?	Is there subsidence?		Is radiation within background levels?
RC01	20/09/11	312345mE 8123456mN	✓	✓	✓	✓	✓	✓	✓	✓	✓	15/05/12	X	✓	X	X	X	✓	J Smith
RC02	02/09/12	312543mE 8123654mN	03/11/12	03/11/12	03/11/12	X	X	X	X	03/11/12	03/11/12								J Smith – Rehab waiting on earthwork machine availability ETA 25/11/12

**Attachment B: Example of the Description of Rehabilitation Methods (table format)**

<b>Disturbance</b>	<b>Rehabilitation Methods</b>	<b>Schedule (Timing)</b>	<b>Closure Objectives / Targets</b>	<b>Monitoring and Remediation</b>
<i>Drill holes</i>	eg Peg removed. Collar cut and hole plugged with plastic cone 400mm below ground level, backfilled, and mounded with soil. Uncollared holes to be plugged at least 1 m below ground level. Drill spoils returned to drill hole and remaining inert material respread on drill site or placed in bottom of the sump. Sample bags and all rubbish removed.	eg Collar temporary capped at the completion of each hole. Rehabilitation of the drill holes will be undertaken after downhole geophysics is completed and chemical assays returned and no longer than 6 months after drill hole completion.	eg all holes plugged/capped and stable/safe prior to end of program.	eg inspection of holes to be undertaken at end of wet season/within six months to ensure no hole plug failures and in subsequent years to monitor site stability. Remediation of any failures to be undertaken at inspection. Before, immediately after, and subsequent year photos to be taken.
<i>Drill pads</i>	eg Drill pads to re-contoured to blend with surrounding topography and ripped across slope. Cleared vegetation to be spread over the site.		eg Drill sites to be returned to original contour and to blend with surrounding environment.	eg inspection of drill sites to be undertaken at end of wet season or within six months to monitor site stability, erosion, weeds and natural vegetation regrowth. Ongoing monitoring to be undertaken in subsequent years to monitor rehabilitation success. Remediation of any unsuccessful objectives to be initiated at the inspection. Before, immediately after, and subsequent year photos to be taken.
<i>Sumps</i>	eg Sumps to be backfilled and separately stockpiled top soil to be respread on top.			
<i>Costeans</i>				
<i>Bulk sample pits</i>				

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Disturbance	Rehabilitation Methods	Schedule (Timing)	Closure Objectives / Targets	Monitoring and Remediation
<i>Tracks / Gridlines</i>	eg Windrows and cleared vegetation to be smoothed back over the track, bunds placed across the track to prevent erosion to and track to be cross-ripped or scarified. Creek crossings to be removed and natural drainages and waterways to be re-established and banks stabilised.			
<i>Sample bags</i>	Sample bags to be removed and drill cuttings to be backfilled in the drill hole, or buried in the sump; inert material may be respread over the drill site. Radioactive or acidic drill cuttings to be backfilled in the drill hole or buried in the sump beneath a minimum of 1 m clean fill.			
<i>Camp</i>				

**NOTE:** Rows can be added/deleted where necessary.

Attachment C – Example of a Rehabilitation Register

Rehabilitation Status

Summarise the rehabilitation status of all exploration sites.

Exploration Activities Rehabilitation Summary (Cumulative)											
Reporting period	Tenement	MMP Reference	Drill Holes /Pads (No.)	Drill Holes/ Pads under Rehab (No.)	Drill Line/ Access Track Length (km)	Drill line/access track under Rehab (km)	Camp (ha)	Camp under Rehab (ha)	Costeans /Bulk Samples (No.)	Costeans /Bulk Samples Under Rehab (No.)	Comments

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Provide details (where applicable) of the rehabilitation activities that were conducted during the past 12 months and from previous reporting periods.

Drill Hole/Pad Rehabilitation Status												
Tenement	Drill Hole ID	Easting (GDA 94 Zone #)	Northing (GDA 94 Zone #)	MMP Reference	Date Drilled	Drilling Method*	Size of Drill Pad (m <sup>2</sup> )	No. of sumps	Status <sup>†</sup>	Rehab Date	Planned Rehab Date	Comments
EL1234	RC01	312345	8123456	2010	20/09/2011	RC	750	1	C	25/11/2011		
EL1234	RC02	312543	8123654	2010	02/09/2012	RC	800		PR		25/11/2012	03/11/2012 - Drill pad and sump requires earthworks

\* AC = aircore/vacuum, RM = rotary mud, RC = reverse circulation, RAB = rotary air blast, D = diamond, P = percussion, V = vibracore or sonic, O = other.  
 † C = drillsite completely rehabilitated (hole collar removed plugged and backfilled, drill spoils buried and sample bags removed, sumps backfilled, drill pads re-contoured and ripped, photograph taken), N = no rehabilitation completed, PR = partial rehabilitation (specify remaining rehabilitation to be completed within the comments section).

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Access Track/Drill Line Rehabilitation Status							
Tenement	Track ID	Tracks/lines Created (km)	Tracks/lines under Rehab (km)	Status <sup>†</sup>	Rehab Date	Planned Rehab Date	Comments
EL1234	RC01	2.2	2.2	C	25/11/2011		
EL1234	RC02	1.5		N		25/11/2012	
EL1234	RC Access	3.4		N			Main access track to RC to remain open pending further planned works. Wet season close-out planned for 26/11/2012.

*† C = rehabilitation completed, N = no rehabilitation completed, PR = partial rehabilitation (specify remaining rehabilitation to be completed within the comments section).*

**NOTE:** Existing and proposed tracks and drill access lines must be shown on the site layout maps included in Section 2.0

Campsite Rehabilitation Status										
Tenement	Camp Name	Date Est.	Easting (GDA 94 Zone 51)	Northing (GDA 94 Zone 51)	Camp Size (ha)	Status <sup>†</sup>	Waste Removed	Camp Rehab Date	Planned Rehab Date	Comments
EL1234	Camp 01	12/07/2009	304345	8126543	0.5	C	Y	30/11/2010		
EL1234	Camp 02	24/05/2011	310987	8124567	0.5	N	Y		2014	Campsite planned to remain the same until minimum 2014

*† C = rehabilitation completed, N = no rehabilitation completed, PR = partial rehabilitation (specify remaining rehabilitation to be completed within the comments section).*

**NOTE:** Existing and proposed campsites must be shown on the maps included in Section 2.0

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Costean and Bulk Sample Rehabilitation Status									
Tenement	Costean/ Bulk Sample ID	Date Excavated	Dimensions (L x W x D)	Easting (GDA 94 Zone X)	Northing (GDA 94 Zone X)	Status <sup>†</sup>	Costean Rehab Date	Planned Rehab Date	Comments

*† C = rehabilitation completed, N = no rehabilitation completed, PR = partial rehabilitation (specify remaining rehabilitation to be completed within the comments section).*

**NOTE:** Costean and bulk sample sites must be shown on the maps included in Section 2.0

Bulk Sample Disposal Status										
Tenement	Reason for bulk sample disposal site	Date Buried	Clean Cover Depth	Dimensions (L x W x D)	Easting (GDA 94 Zone X)	Northing GDA 94 Zone X)	Status <sup>†</sup>	Rehab date	Planned rehab date	Comments

*† C = rehabilitation completed, N = no rehabilitation completed, PR = partial rehabilitation (specify remaining rehabilitation to be completed within the comments section).*

**NOTE:** Bulk sample disposal sites must be shown on the maps included in Section 2.0.