

# Drill Pad Rehabilitation

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## 1. Introduction

### 1.1 Purpose Statement

This procedure is specific to the rehabilitation of surface drilling activities, ensuring environmental and regulatory compliance. Rehabilitation should commence as soon as possible following completion of a drilling program and must be completed within the timeframe specified in the relevant tenement's conditions unless a rehabilitation extension request is granted by Department of Mines, Petroleum and Exploration (DMPE) in writing.

### 1.2 Scope

Drilling activities have the potential to impact on the environment in many ways, including contamination of aquifers and surface water, loss of flora and fauna, soil contamination from hydrocarbons and drill fluids, and soil erosion. Open holes also pose a danger to people and wildlife in future exploration. This procedure will outline the process to ensure the consistent rehabilitation of drill pad areas after surface drilling.

Monitoring of rehabilitated areas is also beneficial to determine the success of rehabilitation to inform future works.

Rehabilitated areas should be revisited to demonstrate that rehabilitation is progressing successfully and complying with tenement conditions. It is particularly important to ensure that plugged drill holes, and large diameter drill holes have not subsided and rehabilitated hillside areas remain stable. In some instances, remedial actions may be required. It is important that any subsided drill holes are remediated and backfilled sufficiently to prevent further erosion.

Exploration and prospecting occurring in sensitive environments (e.g. Environmentally Sensitive Areas, Threatened Ecological Communities, DBCA managed land, etc.) or involving more extensive or higher risk activities (e.g. cut & fill, large diameter holes, large costeans, extensive exploration programs, etc.) may be required to conduct more detailed monitoring programs.

### 1.3 Roles and Responsibilities

**Exploration Manager:** Ensure rehabilitation is completed within designated time frame and complies with all regulatory and PoW requirements.

**Geologist:** Supervise field assistant or contractor completing rehabilitation required. Assist with rehabilitation requirements, ensure rehabilitation is completed safely, in a timely manner and documented.

**Heritage and Environment Advisor:** Audit rehabilitation to ensure compliance with regulatory requirements and responsible for the submission of rehabilitation reports to Department of DMPE. Organises rehabilitation monitoring in accordance with this procedure and approval conditions/external commitments.

**Land Access and Tenure Team:** Reviews and approves the Land Access Permit applications.

**Field Assistant/Contractor:** Undertake rehabilitation as directed by geologist or supervisor. Required to have a valid certification to operate a loader.

## 2. Legislation and Guidelines

### MINING ACT 1978

It is a requirement of the Mining Act 1978 (the Mining Act) that rehabilitation of exploration activities be completed within the timeframe specified in the applicable tenement conditions. In most cases, this timeframe is 12 months from the completion of ground-disturbing activities approved under a Programme of Works (PoW); however, individual tenement conditions may vary, and some may

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not yet reflect updated standard timeframes. Rehabilitation may also occur following an approved extension period. The Mining Act is administered by DMPE.

## **MINING REHABILITATION FUND ACT 2012**

The Mining Rehabilitation Fund (MRF) provides a pooled fund, levied according to the environmental disturbance existing on a tenement at the annual reporting date.

All tenement holders operating on Mining Act Tenure are required to report disturbance data and contribute annually to the fund. Tenements with a rehabilitation liability of \$50,000 or below will report disturbance but will not be required to pay into the fund.

All tenement holders are required to provide disturbance data prior to June 30 in each levy period.

## **ENVIRONMENTAL PROTECTION (CLEARING OF NATIVE VEGETATION) REGULATIONS 2004**

Clearing of Native Vegetation is regulated by the Department of Water and Environmental Regulation (DWER). Where rehabilitation requires clearing of vegetations to access work areas, or regrowth has occurred on pads, a clearing permit from DWER may be required. Clearing should therefore be assessed on a case-by-case basis using the Land Access Permit process.

## **DMPE'S EXPLORATION AND PROSPECTING REHABILITATION GUIDANCE**

Provides information to assist in environmental management and rehabilitation of mineral exploration and prospecting activities in Western Australia.

## **WORK HEALTH AND SAFETY ACT 2020 AND WORK HEALTH AND SAFETY (MINES) REGULATIONS 2022**

The WHS Act and Regulations require that all work is to be conducted in a manner that actively minimizes risks and hazards to workers and the environment. WesCEF as a person conducting a business or undertaking (PCBU) has a statutory duty of care to ensure all workers involved exploration and mining activities, including drillhole rehabilitation, are not exposed to risks to their health or safety arising from the conduct of the business.

All employees and contractors have a duty of care under Health and Safety Legislation to take reasonable care of themselves or others in the workplace, comply with all instructions and control measures regarding health and safety, and notify the company of any hazards and incidents as they arise.

## **3. Procedure**

### **3.1 Equipment**

- Person conducting rehabilitation using a loader or excavator must have valid certification to operate the machinery
- Job Hazard Analysis (JHA) form from contractors (or otherwise prepared) fit for proposed task
- PPE requirements include high-visibility long pants and shirt, safety glasses, gloves, helmet, hearing protection and steel capped boots
- P2 or higher dust masks are to be worn when removing drill bag contents
- Collar cutter
- Adequate supplies of water
- Radios (UHF and VHF) and satellite communication e.g. Sat Phone, InReach or SPOT device
- Camera
- LAP including map and checklist of drill pads to rehabilitate

## 3.2 Preparation

As soon as possible following drilling:

### Geology Team

1. Identify the holes that need rehabilitating (always check MTO for current rehabilitation conditions and timeframes for each tenement). The drill rehab tracking spreadsheet (WesCEF Exploration - Documents\General\02. Projects\PROJECT\05 Environment\4 Rehabilitation\\_MASTER) has a complete list of drill holes and progress of rehabilitation. Also review the Cintellate report for the next three months of upcoming actions.
2. Check whether any fibrous mineral or radioactive materials were encountered on the holes to be rehabilitated. If so, consult the relevant Principal Hazard Management Plans and notify the Exploration Manager. A Team Based Risk Assessment must be completed prior to proceeding.
3. Prepare Land Access Permit application for the rehabilitation and submit to the Land Access and Tenure Team for review (refer to [Land Access Permit Guidelines WCEF-PD-HSE-0072](#)) This is particularly important for rehabilitation older than six months as conditions may have changed. Waste disposal and heritage notices may also need to be considered.
4. Check that a photo has been taken of the pad prior to rehabilitation, if not, take a photo of the pad before commencing work. Photo should be date/time stamped.
5. Ensure flagging or any priority flora, heritage or historic mine shafts are still clearly visible before mobilising machinery to rehabilitation sites.
6. Organise rehabilitation contractor and ensure they are aware of Land Access Permit conditions, have completed a relevant induction and vehicle hygiene inspection forms have been completed for all equipment prior to mobilising.
7. Refer to Davyhurst Remote Work Procedure (WCEF-PD-HSE-0052) prior to visiting the rehabilitation site. Ensure that all requirements of the procedure are followed, such as the Buddy System and the use of InReach GPS devices.

### Land Access and Tenure Team

8. Review proposed Land Access Permit application to ensure no prohibited clearing is proposed (refer to [Land Access Permit Guidelines WCEF-PD-HSE-0072](#))

### General and Seasonal Considerations

9. Drill pad rehabilitation must comply with tenement conditions as stated on MTO. For example, removal of rubbish from area or correct hydrocarbon storage.
10. Rehabilitation timeframes commence the day clearing is commenced. If a number of pads/tracks are on one tenement, the due date applied to all is either 6 or 12 months (depending on the tenement) from the date clearing commenced for that programme.

To optimise success, rehabilitation should be completed during dry soil conditions, after the hottest months but before rainfall. Rehabilitation in the hottest months of the year should be avoided due to likelihood of topsoil erosion and dust generation. Additional safety concerns include likelihood of bushfire event from machinery interaction with vegetation or severe dehydration. Rehabilitation in the wettest months of the year should be avoided due to risk of soil compaction and spread of weeds/soil borne pathogens.

## 3.3 Procedure Steps

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**Note:** a JHA for each different task in the procedure must be in place prior to undertaking any work

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## 3.3.1 Collar

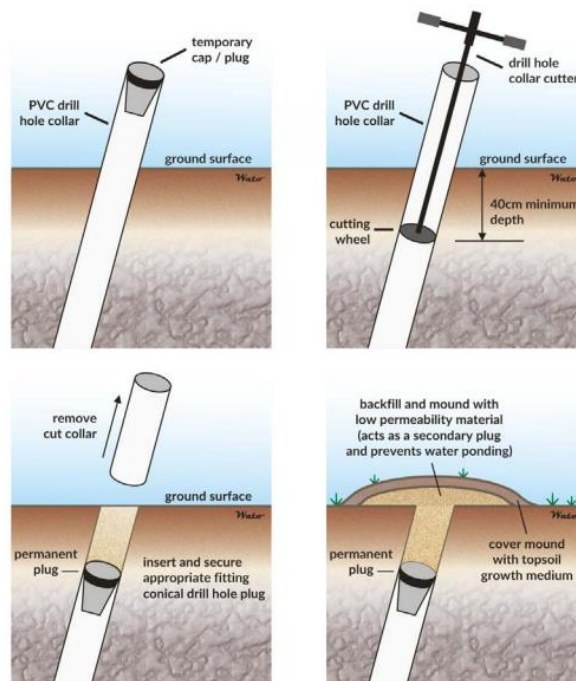
### Geologist or Field Assistant

1. Cut collar using collar cutter
  - a. Ensure safety glasses, hearing protection and gloves are worn and correctly fitted prior to commencing.
  - b. Remove the cap from the collar.
  - c. Check the collar for any foreign objects or fauna.
  - d. Lower the collar cutter blade into the hole before turning on the collar cutter.
  - e. Gripping firmly, turn on the collar cutter and begin cutting the collar.
  - f. The collar must be cut to a minimum of 0.4m below ground.
  - g. After cutting the collar, turn the collar cutter off while the blade is still in the hole. Ensure the blade rotations have come to a complete stop and remove the collar cutter from the hole.



**The collar cutter will heat up during use. Only handle the collar cutter with gloves and do not touch the blade after operating the collar cutter until it has completely cooled down.**

2. Remove the cut collar. This can be done using the bucket of the loader to eliminate manual handling. Spotter must stand at least 10 metres clear of the loader while operating.
3. Plug the hole and backfill with soil or drill cuttings and mound with a layer of topsoil.
  - a. The soil backfill should be compacted and mounded over the hole to allow for subsidence and to limit the pooling of surface water. See Figure 1.



**Figure 1: Cutting and capping of collared holes. Note a small amount of drill spoil remnants can be added to the mound.**

## 3.3.2 Drill Pad and Tracks

### Geologist or Field Assistant

1. Check for and remove any waste including survey pegs and flagging tape.
2. Remove sample bags
  - a. **All** sample bags must be removed from site at the end of the programme and disposed of in an appropriate manner (confirm disposal location with Heritage and Environment Advisor).
  - b. Check for any fauna hiding within or next to the bags prior to removing bags, including snakes and venomous insects.
  - c. Empty the contents of the bag onto the drill pad by cutting the bottom of the bag or tipping the bag.

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**Note:** A suitable risk assessment (Take 5, JHA, TBRA) should be undertaken prior to removing bags. Removal of all bags by hand requires that cut proof gloves, N95 P2 dust masks and safety glasses must be worn.

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### Operator

3. Backfill sump with excavated material and drill cuttings.
4. Scarify pad
  - a. If the pad was compacted during exploration activities, the pad can then be scarified (break up the surface with bucket teeth).
  - b. Scarifying should be done along contour, not down slope. This loosens compacted soil, promotes water infiltration, aid revegetation and minimise soil erosion.
5. Re-spread any stockpiled topsoil and vegetation over the site.
6. If topsoil was stripped during construction of the track it must be re-spread. Compacted areas should be contour ripped or scarified to relieve compaction and promote revegetation.

### Geologist or Field Assistant

7. Take photos of the rehabilitated pad. See Figure 2 for example of finished pad. Ensure that a photo is taken of the drill pad ID to be able to identify the pad later.
8. Close off access to the drill pads, this can be in the form of signage or a physical barrier such as a small bund or tree trunks.
9. Update the 'Master Rehabilitation Register' spreadsheet with rehabilitation date. The Register is saved in WesCEF Exploration - General\02. Projects\PROJECT\05. Environmental\5.4 Rehabilitation\\_MASTER.



Figure 2: Rehabilitated Pad.

## 4. Post-Rehabilitation

### 4.1 Complete Rehabilitation Report

A rehabilitation report of all drilling activities is required to be submitted after rehab, within six or 12 months of drilling being completed (refer to tenement conditions), or following an approved extension period.

#### Geology Team

1. Prepares Rehabilitation Completion Report. The report must include:
  - a. The completed Programme of Work Rehabilitation Report Form. Reports are available online via Resources Online at corresponding POW approval or blank proformas are available on DMPE website
  - b. A map of rehabilitated areas
  - c. Before and after photos of the project, with a brief description including location, date and photo content
  - d. Other supporting information if relevant

#### Heritage and Environment Advisor

2. Reviews Rehabilitation Completion Report
3. Submits report to DMPE via [Departmental Submissions - Department of Mines, Industry Regulation and Safety \(dmp.wa.gov.au\)](https://www.dmp.wa.gov.au)
4. Update the 'Master Rehabilitation Register' spreadsheet column 'Rehab Completion Report Submitted' with report submission date. The Register is saved in WesCEF Exploration - General\02. Projects\PROJECT05. Environmental\4 Rehabilitation\\_MASTER.

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5. Save final report and submission receipt in the relevant year's folder WesCEF Exploration - General\02. Projects\PROJECT\05. Environmental\4 Rehabilitation\1 WES Rehab\YYYY Drilling.
6. Coordinates rehabilitation completion inspections in accordance with relevant approved environmental management plan

## 4.2 Rehabilitation Monitoring

WesCEF monitors rehabilitation areas every 3-5 years or as required by approval conditions.

### Heritage and Environment Advisor

1. Reviews Cintellate actions and approval documents each autumn when planning flora surveys to determine any areas of rehabilitation which will require monitoring by an environmental specialist in spring, and adds these to the survey scope.

Annually, during the flowering season for the local flora:

2. Coordinates rehabilitation monitoring. A [Rehabilitation Monitoring Form](#) (WCEF-FORM-HSE-0019) should be completed for each pad.
3. Save completed monitoring form with the correspondence folder in WesCEF Exploration - General\02. Projects\PROJECT\05. Environmental\5.4 Rehabilitation\1 WES Rehab\YYYY Drilling. The document name should be YYMMDD [date of monitoring] Tenement\_POW\_HOLEID, for example '230901\_M771066\_POW54253\_WPLR001'.
4. Update 'Monitoring' column in 'Master Rehabilitation Register' with monitoring date.

## 5. Rehabilitation Extension Requests

Rehabilitation extension requests may be required under exceptional circumstances if rehabilitation cannot be completed within 6 or 12 months (tenement condition dependent) of clearing land for exploration.



**Rehabilitation extensions requests should be avoided where possible because leaving land open for longer periods of time can lead to poorer rehabilitation outcomes for various reasons including loss of topsoil due to erosion and decreased seed viability when topsoil is stored in stockpiles. Open sumps can also represent a hazard to fauna.**

### Geology Team

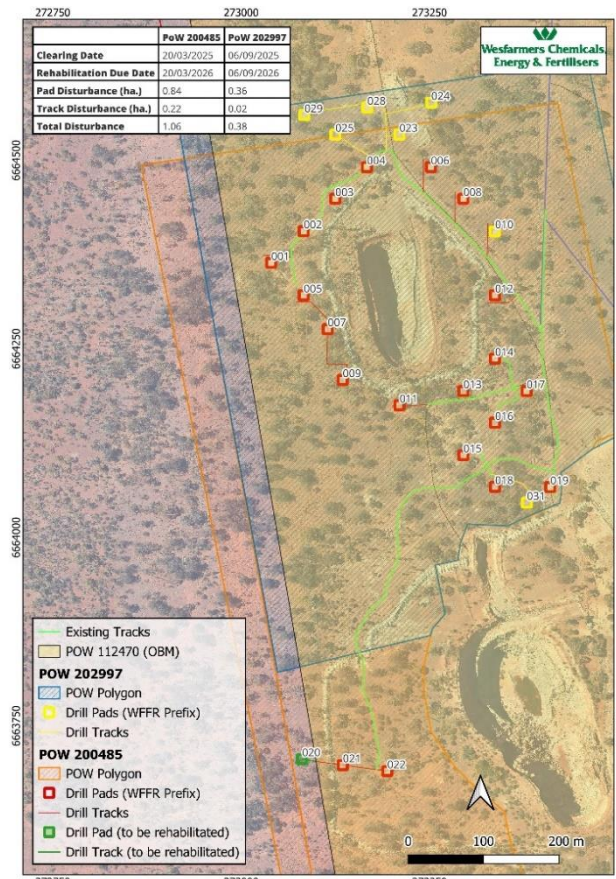
Where rehabilitation due date is less than 6 weeks away and rehabilitation is looking uncertain, commence extension request process.

1. Prepare rehabilitation extension request including:
  - a. Table with drill hole details as per below example.

Tenement	PoW REG ID	Drillhole ID	Easting	Northing	Date cleared	Extension Request Date
E77/2137	98010	WPLR001	754341	6413988	3/7/21	1/7/23
E77/2137	98010	WPLR002	754510	6414142	3/7/21	1/7/23

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- b. Disturbance remaining unrehabilitated (ha)
  - c. Date disturbance occurred
  - d. Reason for request
  - e. Proposed schedule for the completion of outstanding work
  - f. Map outlining disturbed area and proposed unrehabilitated areas (refer Figure 3)
  - g. Obtain written approval from the Exploration Manager for seeking extension.
2. Provide Heritage and Environment Advisor with information.



**Figure 3: Example of map required for rehabilitation extension requests**

## Heritage and Environment Advisor

- a. Seeks written approval from DMPE Environmental Officer for extension.
- b. Checks all other approvals for conditions relating to rehabilitation timeframe for example Clearing Permit (CP) and Conservation Management Plan (CMP). Amendments to CP conditions relating to rehabilitation timeframe may need to be sought from DMPE and approval sought from DBCA if a rehabilitation timeframe has been specified in the CMP.
- c. Files correspondence and approvals associated with the extension request in WesCEF WesCEF Exploration - General\02. Projects\PROJECT\01 Administration\01 External Correspondence\01 Incoming\YYYY YYYY
- d. Update Cintellate Legal Register with new rehabilitation due date if extension request approved with relevant comments.