GOVERNMENT OF WESTERN AUSTRALIA

Department of **Energy, Mines, Industry Regulation and Safety**

Guidelines

Mining Rehabilitation Fund Reporting

Guidance on reporting of exploration and mining operations, including definitions of mine activity types.

Version 4.0
February 2025

Contents

Purpose 3

Objectives 3

Scope 3

Legislation 3

Note 3

Guidelines 4

1. Reporting mining-related disturbances 4

1.1 Overview 4

1.2 Mining activities 4

1.3 Land under rehabilitation and rehabilitated land 8

1.4 Classes of activity 12

Appendix 1 16

Mine activity types and other definitions 16

Document hierarchy for Mining Rehabilitation Fund reports

Legislation	*Mining Rehabilitation Fund Act 2012*
Statutory Documents	Mining Rehabilitation Fund Regulations 2013
Guidelines	This document

Version history

Version	Date	Changes
1.0	July 2013	Initial Publication
2.0	March 2017	Minor Revisions
3.0	September 2021	Revised consistent with amendments to Mining Rehabilitation Fund Regulations 2013
4.0	February 2025	Revised consistent with amendments to Mining Rehabilitation Fund Regulations 2013; revision of reporting for exploration/prospecting operations.

Purpose

The Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) is responsible for administering the *Mining Rehabilitation Fund Act 2012* (MRF Act). This document provides guidance on the reporting of exploration and mining operations for the Mining Rehabilitation Fund.

Objectives

The objective of this Guideline is to achieve a high level of consistency and accuracy for the identification and reporting of mining activities under the MRF Act; and ensure appropriate and equitable levy assessments are calculated.

Scope

This Guideline applies to reporting assessment information under section 15(2) of the MRF Act.

Legislation

The MRF Act establishes a pooled fund based on annual levy contributions. Tenement holders under the *Mining Act 1978* (Mining Act) are required to provide assessment information (disturbance data) by the prescribed date (30 June) each year. Based on this information, an assessment notice is issued to the tenement holder(s) with details of the levy payable. Tenements with a rehabilitation liability estimate below the threshold (currently $50,000) are not required to make a levy payment.

The Guidelines provide guidance on the interpretation of certain terms ("Descriptions of Infrastructure or Land") found in Schedule 1 of the Mining Rehabilitation Fund Regulations 2013. These terms are used for identifying the appropriate rehabilitation liability category and mine activity type when reporting assessment information under section 15(2) of the MRF Act.

Note

References to Eligible Mining Activities, EMA Notices, notices of completion and Mining Development and Closure Proposals (MDCPs) are predicated on the enactment of the enabling amendments to the Mining Act and MRF Act and to their associated regulations.

Guidelines

1. Reporting mining-related disturbances

1.1 Overview

It is the responsibility of each tenement holder to ensure that the reported assessment information is true and correct. This includes correctly identifying each disturbance, making sure that it is allocated to the appropriate rehabilitation liability category (through the "Mine Activity Type" in the online report) and ensuring that the area occupied by the disturbance (its footprint) is accurately measured.

DEMIRS does not check the information for accuracy at the time of lodgement but may conduct a review, for compliance purposes, at a later date. It is therefore important that the assessment information that a holder provides is fully supported by evidence and that the evidence can be made available to DEMIRS in the event of an audit. This supporting evidence should be retained for at least two years after a levy has been assessed.

In addition to active, open' or in use areas of disturbance, the MRF Act recognises two other states for land that has been the subject of a mining activity – land under rehabilitation and rehabilitated land. Both have quite strict definitions under the Mining Rehabilitation Fund Act and the MRF Regulations, so it is important to understand what they mean before using them. As every mining-related disturbance on a tenement corresponds with an activity that has been approved under a Programme of Work (PoW), Eligible Mining Activity (EMA) Notice, mining proposal or Mining Development and Closure Proposal (MDCP), these definitions are tied closely to approved closure obligations.

1.2 Mining activities

For the purposes of completing the online MRF report, there are two broad types of mining activity:

- exploration and prospecting operations; and
- mining operations.

1.2.1 Exploration and prospecting operations

Under the MRF Act and MRF Regulations, exploration operations refers to activity on a tenement that is:

- directly related to exploration and prospecting for minerals; and
- subject to a PoW or EMA Notice.

Exploration includes prospecting activity and covers any exploration-related activity that has been carried out under a PoW or EMA Notice, whether on a prospecting licence, an exploration licence, a mining lease, a miscellaneous licence or a retention licence. This type of disturbance (including installation of supporting infrastructure, such as campsites) is expected to be temporary and most ground disturbances are required to be rehabilitated within 12 months of their creation.

As shown in Table 1, all exploration activity falls within Category D – "Land (other than land under rehabilitation or rehabilitated land) that has been disturbed by exploration operations".
For convenience, this is identified as "Exploration/Prospecting Operations" in the online report.

Under a PoW, disturbances (including installation of any supporting infrastructure, such as campsites) are expected to be temporary and most ground disturbances are required to be rehabilitated within 12 months of their creation. Unlike activity under a mining proposal, completion of rehabilitation under a PoW can be assessed by the operator; the PoW approval requests that operators send in a PoW Rehabilitation Report at the end of the PoW to confirm that activity has ended and that all rehabilitation work has been completed. Similarly, the Mining Regulations 1981 require ground disturbance under an EMA Notice to be rehabilitated within 12 months of completion of work and documented by submission of a notice of completion.

Historically, rehabilitation of work under a PoW has not been accounted for in the online MRF Report until an operator has reached the stage where all activity has ceased and the operator has submitted a PoW Rehabilitation Report, at which point the PoW ceased to be reported. In the meantime, the holder of the tenement would report the cumulative disturbance (that is, the total disturbance from the time work started under the PoW until the assessment date for the period being reported) without taking rehabilitated areas into account. Commencing with the 2024–25 reporting period, however, reporting of exploration operations aligns more closely with mining operations and can be split into disturbed ("open") areas and areas under rehabilitation ("closed") until completion is confirmed by submitting the PoW Rehabilitation Report or the EMA notice of completion.

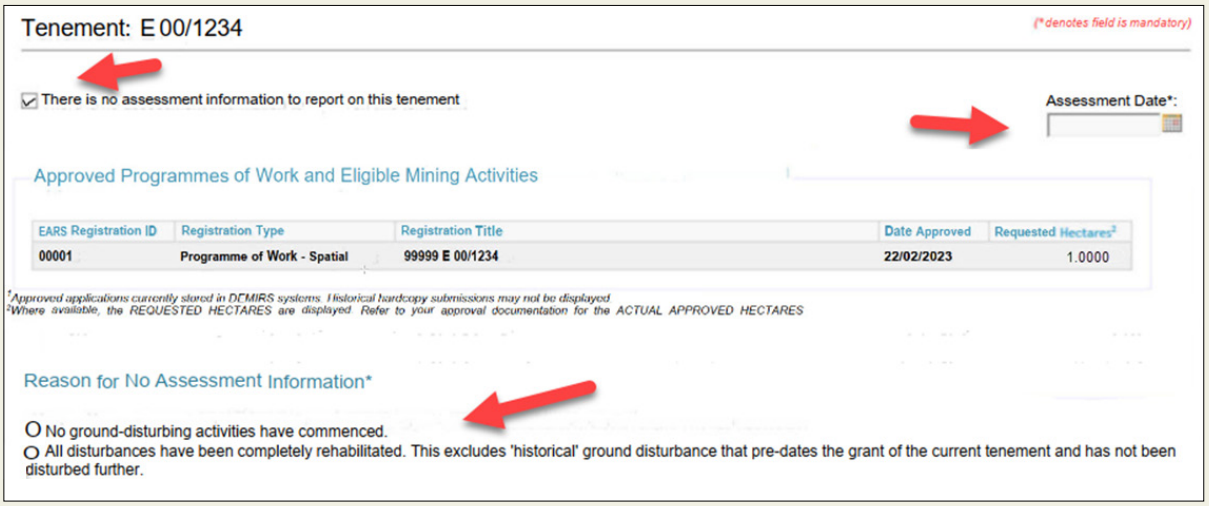
For example, consider the following scenarios:

1. A PoW is approved (or an EMA Notice lodged) that allows an explorer to undertake a drilling programme that will disturb one hectare (ha). Drilling starts on 1 May and ends on 31 August.

   The MRF report is submitted with disturbance assessed at 15 June, by which time the total disturbance is 0.5ha. At this point, no rehabilitation work has been completed, so the 0.5ha is still "open".

Mine Activity Type	Mine Activity Reference	Disturbance			Land Under Rehabilitation			Total Area of Activity (ha)	RLE ($)
		Category	Previous (ha)	Total (ha)	Category	Previous (ha)	Total (ha)		
Exploration/Prospecting Operations - Land (other than land under rehabilitation or rehabilitated land) that has been disturbed by exploration operations	Drilling	D		0.5000	E		0.0000	0.5000	1,000.00
		Total:	0.0000	0.5000	Total:	0.0000	0.0000	0.5000	1,000.00

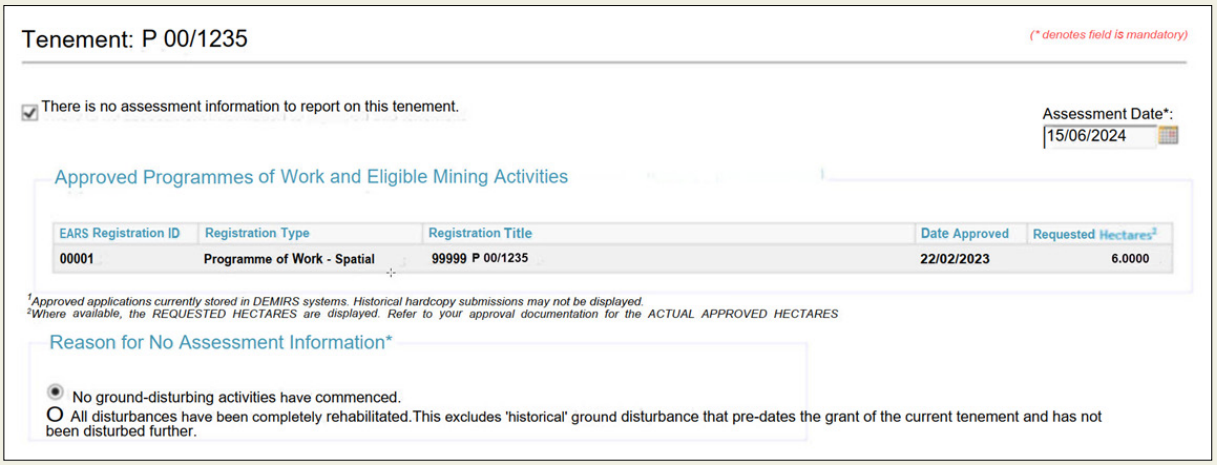
   By the time a report is submitted for the next year, work under the PoW (or EMA Notice) has been completed and the PoW Rehabilitation Report (or notice of completion for an EMA) has been submitted and no further approvals have been granted. On that basis, the holder can report that there is no assessment information to report.



2. A PoW is approved for a prospector that allows scraping and detecting over a total area of 6ha (subject to the usual maximum of 2ha open at any one time).

The PoW is approved in May of Year 1 and work starts in August of Year 2.

Because no work had started yet, Year 1 would be reported as follows:



Tenement: P 00/1235

(* denotes field is mandatory)

☑ There is no assessment information to report on this tenement.

Assessment Date*: 15/06/2024

Approved Programmes of Work and Eligible Mining Activities

EARS Registration ID	Registration Type	Registration Title	Date Approved	Requested Hectares[2]
00001	Programme of Work - Spatial	99999 P 00/1235	22/02/2023	6.0000

[1]Approved applications currently stored in DEMIRS systems. Historical hardcopy submissions may not be displayed.
[2]Where available, the REQUESTED HECTARES are displayed. Refer to your approval documentation for the ACTUAL APPROVED HECTARES

Reason for No Assessment Information*

◉ No ground-disturbing activities have commenced.
○ All disturbances have been completely rehabilitated.This excludes 'historical' ground disturbance that pre-dates the grant of the current tenement and has not been disturbed further.

A year later (Year 2), a total of 1.25ha had been scraped and rehabilitated since work began the year before, while 0.4ha still remained open. This meant that, as at the assessment date in Year 2, the total area disturbed to date was 1.65ha, which is reflected in the Total Area of Activity column (the sum of the open and rehabilitated areas).

Mine Activity Type	Mine Activity Reference	Disturbance			Land Under Rehabilitation			Total Area of Activity (ha)	RLE ($)
		Category	Previous (ha)	Total (ha)	Category	Previous (ha)	Total (ha)		
Exploration/Prospecting Operations - Land (other than land under rehabilitation or rehabilitated land) that has been disturbed by exploration operations	Scraping and detecting	D	0.0	0.4000	E	0.0	1.2500	1.6500	3,300.00
		Total:	0.0000	0.4000	Total:	0.0000	1.2500	1.6500	3,300.00

By June of Year 3, a further 2ha had been scraped and rehabilitated, making 3.25ha since work started. The total that remained to be rehabilitated and still open was 0.25ha.

The Year 3 report would look like this:

Mine Activity Type	Mine Activity Reference	Disturbance			Land Under Rehabilitation			Total Area of Activity (ha)	RLE ($)
		Category	Previous (ha)	Total (ha)	Category	Previous (ha)	Total (ha)		
Exploration/Prospecting Operations - Land (other than land under rehabilitation or rehabilitated land) that has been disturbed by exploration operations	Scraping and detecting	D	0.4	0.2500	E	1.25	3.2500	3.500	7,000.00
		Total:	0.4000	0.4000	Total:	1.2500	3.2500	3.500	7,000.00

During Year 4, a further 1ha was worked and rehabilitated and it was then decided that no further activity would be undertaken. By the time the report for Year 4 was submitted, the PoW Rehabilitation Report had also been submitted to account for completion of all rehabilitation. It was therefore possible to report, once again, that there is no assessment information to report on this tenement, this time because all disturbances have been completely rehabilitated.

3. If, in the above example, there had been two concurrent PoWs or EMA Notices in Year 3, reporting might look like this in Year 3 – with an additional activity added to represent the second activity:

Mine Activity Type	Mine Activity Reference	Disturbance			Land Under Rehabilitation			Total Area of Activity (ha)	RLE ($)
		Category	Previous (ha)	Total (ha)	Category	Previous (ha)	Total (ha)		
Exploration/Prospecting Operations - Land (other than land under rehabilitation or rehabilitated land) that has been disturbed by exploration operations	Scraping and detecting	D	0.4	0.2500	E	1.25	3.2500	3.500	7,000.00
Exploration/Prospecting Operations - Land (other than land under rehabilitation or rehabilitated land) that has been disturbed by exploration operations	Drilling	D	0.0	0.1500	E	0.0	0.2000	0.3500	700.00
		Total:	0.0000	0.4000	Total:	0.0000	3.4500	3.8500	7,700.00

In Year 4, after the Rehabilitation Report or notice of completion had been submitted, the first would simply be removed and the second one updated.

1.2.2 Mining operations

Mining operations are activities that are carried out (or infrastructure that is installed) under approved Mining Proposals or MDCPs. MDCPs and Mine Closure Plans set out the closure obligations associated with approved activities.

As shown in Table 1, each of these activities would fall within one of categories A, B, C, E, F or G. It is quite likely that the ground-disturbing activity on a tenement is comprised of several different mine activity types and categories.

Reporting of ground disturbances by mining operations is similar to exploration and prospecting operations in that the area reported is a snapshot of the total ground disturbance as at the assessment date. This means that it is not the area disturbed only during the current period or since work started, but each activity's footprint (or just its surface expression if it extends below the surface).

Unlike exploration and prospecting operations, however, satisfactory completion of rehabilitation work can only be confirmed by officers of DEMIRS. This means that an area cannot be accounted for as rehabilitated land until it has been accepted by DEMIRS. If work has reached the stage where it can be recorded as land under rehabilitation, it remains as land under rehabilitation until DEMIRS confirms that it is fully rehabilitated.

For this reason, areas of disturbances may still need to be reported when there has been no mining activity during the period (or when a mine is on care-and-maintenance) if the disturbed areas are still there and occupying the same footprint.

Activities that share the same rehabilitation liability category (A, B, C, D, E, F or G) but are identifiably distinct from each other (e.g. ROM pads and laydown areas, both of which are category C) should not be combined into a single activity for reporting purposes.

Definitions of the various mine activity types can be found in Appendix 1.

1.3 Land under rehabilitation and rehabilitated land

DEMIRS encourages mine operators to rehabilitate mining-related disturbances on a progressive basis. For this reason, land that is under rehabilitation (but which is not yet rehabilitated) has its own category (E) and attracts a much lower unit rate than land that is still in a disturbed state (see Table 1). Land that is fully rehabilitated is no longer required to be reported.

Under the MRF Regulations, both land under rehabilitation and rehabilitated land have precise meanings.

Land under rehabilitation means land:

(a) on which earthworks have been completed in accordance with closure obligations that apply to the tenement; and

(b) that is not rehabilitated land.

Rehabilitated land means land on which rehabilitation has been completed in accordance with the closure obligations that apply to the tenement.

In this context, **earthworks** is defined in the MRF Regulations as:

> Any operations to move or shape land or infrastructure of a type described in Schedule 1 of the MRF Regulations, which includes the following –
>
> - excavating or filling;
> - forming embankments or slopes;
> - operations to control wind or water erosion of land; and
> - battering, contouring, reshaping, ripping, capping or rock-armouring land.

It covers work such as completion of abandonment bunds and backfilling of pits and other excavations, up to and including topsoil replacement, ripping and seeding. This implies that rehabilitation work has reached the stage where the holder is monitoring the establishment of revegetation (where that is required).

For completion of the online MRF report, the holder can assess whether any required earthworks have been completed and record that area in the "Land under Rehabilitation" section for the relevant activity.

As it is a condition of most tenements that rehabilitation of disturbances must be completed to the satisfaction of a DEMIRS Environmental Officer (or the Executive Director), **only an Environmental Officer can determine whether rehabilitation work has been completed in accordance with closure obligations**. This means that land can only be considered as rehabilitated land once an appropriate officer of DEMIRS has formally accepted that the obligations have been met. Until this has happened, the land must continue to be reported as land under rehabilitation. Once an activity has been formally accepted as rehabilitated it is no longer required to be included in an MRF report.

It is common for closure obligations to require construction of artificial barriers such as bunds to prevent unintended access to a site by the public. Given that they are part of meeting these obligations, completed barriers are not required to be reported as disturbances in their own right. While these barriers and bunds are in course of construction and not yet achieving their purpose, they would not satisfy closure obligations and would need to be reported as disturbances until they are complete.

For example:

XYZ Pty Ltd holds a mining lease, on which is located a pit (25ha), a Class 2 Waste Dump (10ha) and a former laydown area (5ha).

At the time of assessing XYZ's Year 1 assessment information, the pit and the waste dump are both unrehabilitated but the former laydown area has been ripped and seeded.

By Year 2, an abandonment bund around the pit has been partly completed (owing to the need to finish dewatering) and the waste dump has been contoured and capped.

By Year 3, the abandonment bund is complete, the waste dump has now had topsoil replaced and is ripped and seeded, and DEMIRS has accepted that revegetation of the old laydown area has been successful and that it has been rehabilitated in accordance with closure obligations.

Reporting might look like this:

Year 1:

Because the rehabilitation earthworks are completed at the laydown area, it can be recorded as "Land under Rehabilitation".

	Mine Activity Type	Mine Activity Reference	Disturbance			Land Under Rehabilitation			Total Area of Activity (ha)	RLE ($)	
			Category	Previous (ha)	Total (ha)	Category	Previous (ha)	Total (ha)			
⊖	Waste dump or overburden stockpile (class 2)	Waste Dump	B	10	10.00	E	0	0.00	10.0000	300,000.00	☐
⊖	Mining void (with a depth of at least 5 metres) - below ground water level	Pit	B	25	25.00	E	0	0.00	25.0000	750,000.00	☐
⊖	Laydown or hardstand area	North-west	C	5	0.00	E	0	5.00	5.0000	10,000.00	☐
			Total:	40.0000	35.0000	Total:	0.0000	5.0000	40.0000	1,060,000.00	

Year 2:

By June in Year 2, the abandonment bund around the pit is 95 per cent complete, whilst access is kept open for dewatering. The waste dump, while now contoured and capped, still has topsoil to be replaced, as well as ripping and seeding. This means earthworks are not complete on either feature. At this point, the incomplete bund itself is a disturbance (occupying 10.4ha).

	Mine Activity Type	Mine Activity Reference	Disturbance			Land Under Rehabilitation			Total Area of Activity (ha)	RLE ($)	
			Category	Previous (ha)	Total (ha)	Category	Previous (ha)	Total (ha)			
⊖	Other Cleared Land - Land (other than land under rehabiliation or rehabiliated land) that is cleared of vegetation and is not otherwise described in this Table	Incomplete abandonment bund	C		10.40				10.4000	187,200.00	☐
⊖	Laydown or hardstand area	North-west	C	0	0.0000	E	5	5.0000	5.0000	10,000.00	☐
⊖	Mining void (with a depth of at least 5 metres) - below ground water level	Pit	B	25	25.0000	E	0	0.0000	25.0000	750,000.00	☐
⊖	Waste dump or overburden stockpile (class 2)	Waste Dump	B	10	10.0000	E	0	0.0000	10.0000	300,000.00	☐
			Total:	35.0000	45.4000	Total:	5.0000	5.0000	50.4000	1,247,200.00	

Year 3:

With earthworks complete, the pit and the waste dump now qualify as land under rehabilitation and the bund no longer needs to be included. The pit would remain as land under rehabilitation until DEMIRS has inspected it and is satisfied that its requirements have been met. The waste dump is still in the monitoring stage for revegetation. The laydown area has been signed off after a DEMIRS inspection early in Year 3.

	Mine Activity Type	Mine Activity Reference	Disturbance			Land Under Rehabilitation			Total Area of Activity (ha)	RLE ($)	
			Category	Previous (ha)	Total (ha)	Category	Previous (ha)	Total (ha)			
⊖	Mining void (with a depth of at least 5 metres) - below ground water level	Pit	B	25	0.0000	E	0	25.000	25.0000	50,000.00	☐
⊖	Waste dump or overburden stockpile (class 2)	Waste Dump	B	10	0.0000	E	0	10.0000	10.0000	20,000.00	☐
			Total:	35.0000	0.0000	Total:	0.0000	35.0000	35.0000	70,000.00	

Rehabilitation work can be accounted for progressively if the type of activity allows for it. The laydown area, for example, could have had earthworks completed across only 50 per cent of its area in Year 1, so that 2.5ha would be a disturbance and 2.5ha as land under rehabilitation. An abandonment bund, however, is constructed for safety purposes and can generally not fulfil that purpose until fully complete.

Table 1. Rehabilitation Liability Categories and Unit Rates

Description of Infrastructure or Land	Rehabilitation Liability Category	Unit Rate (per hectare)
Tailings or residue storage facility (Class 1) Waste dump or overburden stockpile (Class 1) Heap or vat leach facility Evaporation pond not associated with minerals-in-brine extraction Dam: saline water or process liquor	A	$50,000
Tailings or residue storage facility (Class 2) Waste dump or overburden stockpile (Class 2) Low-grade ore stockpile (Class 1) Plant site Fuel storage facility Workshop Mining void (with a depth of at least 5 metres) – below groundwater level Landfill site Diversion channel or drain Dam: fresh water	B	$30,000

Description of Infrastructure or Land	Rehabilitation Liability Category	Unit Rate (per hectare)
Low-grade ore stockpile (Class 2) Sewage pond Run-of-mine (ROM) pad Building (other than workshop) or campsite Transport or service infrastructure corridor Airstrip Mining void (with a depth of at least 5 metres) – above groundwater level Laydown or hardstand area Core yard Borrow pit or shallow surface excavation (with a depth of less than 5 metres) Borefield Processing equipment or stockpile associated with basic raw material extraction Land (other than land under rehabilitation or rehabilitated land) that is cleared of vegetation and not otherwise described in this table	C	$18,000
Land (other than land under rehabilitation or rehabilitated land) that has been disturbed by exploration operations	D	$2,000
Land under rehabilitation (other than land that has been disturbed by exploration operations) Topsoil stockpile	E	$2,000
Minerals-in-brine abstraction trench Evaporation pond (off-playa) associated with minerals-in-brine extraction Evaporation pond (on-playa) associated with minerals-in-brine extraction Halite/salt stockpile (off-playa) associated with minerals-in-brine extraction	F	$20,000
Halite/salt stockpile (on-playa) associated with minerals-in-brine extraction	G	$10,000

1.4 Classes of activity

Certain mining activities may present higher risks due to the presence of hazardous materials and/or be made subject to stricter management conditions to ensure compliance with specific tenement conditions or the requirements of an approved mining proposal. For this reason, the following activities are split across two classes:

- tailings or residue storage facilities, see Table 2;
- waste dumps or overburden stockpiles, see Table 3; and
- low-grade ore stockpiles, see Table 4 .

Table 2. Classes of tailings or residual storage facility

Item	Criteria applying to tailings or residue storage facility	Class
1.	Either or both of the following apply to the tailings or residue storage facility – (a) its highest embankment is at least 5 metres high; (b) it contains any of the following – (i) fibrous minerals; (ii) radioactive material; (iii) material capable of generating acid and metalliferous drainage, including neutral drainage and saline drainage, And management requirements imposed under a condition of the mining authorisation or under a mining proposal apply to those minerals or that material.	Class 1
2.	The tailings or residue storage facility is not of class 1	Class 2

Table 3. Classes of waste dump or overburden stockpile

Item	Criteria applying to waste dump or overburden stockpiles	Class
1.	Either or both of the following apply to the waste dump or overburden stockpile (other than a halite/salt stockpile associated with minerals-in-brine extraction) – (a) its highest point is at least 15 metres high; (b) it contains any of the following – (i) fibrous minerals; (ii) radioactive material; (iii) material capable of generating acid and metalliferous drainage, including neutral drainage and saline drainage; and/or (iv) erodible material that is capable of compromising the structure of the waste dump or overburden stockpile. And management requirements imposed under a condition of the mining authorisation or under a mining proposal apply to those minerals or that material.	Class 1
2.	The waste dump or overburden stockpile is not of class 1	Class 2

Table 4. Classes of low-grade ore stockpile

Item	Criteria applying to low-grade ore stockpile	Class
1.	Either or both of the following apply to the low-grade ore stockpile – (a) its highest point is at least 15 metres high; (b) it contains any of the following – (i) fibrous minerals; (ii) radioactive material; and/or (iii) material capable of generating acid and metalliferous drainage, including neutral drainage and saline drainage. And management requirements imposed under a condition of the mining authorisation or under a mining proposal apply to those minerals or that material.	Class 1
2.	The low-grade ore stockpile is not of class 1	Class 2

These facilities are therefore classified as Class 1 based on their height above the surrounding landscape and/or the nature of the materials they contain.

Fibrous minerals

Fibrous minerals means any waste or low-grade ore that contains quantities of asbestiform fibrous hydrated silicate materials, several of which occur naturally in asbestiform and non-asbestiform forms.

This definition also includes other natural mineral fibres that are potentially hazardous due to their physical and chemical properties, including erionite, wollastonite, attapulgite and sepiolite, which require special management measures (such as a Fibrous Minerals Management Plan).

This is further defined in the DMIRS/Mining Industry Advisory Committee guideline entitled "Management of fibrous minerals in Western Australian mining operations".

Radioactive minerals

Radioactive minerals means any waste or low-grade ore generated from uranium or thorium ores that requires a Radiation Management Plan under Part 16 of the Mines Safety and Inspection Regulations 1995 (Safety Regulations).

Acid and metalliferous drainage

Acid drainage, neutral drainage, metalliferous drainage and saline drainage are the results of a complex process governed by a combination of physical, chemical and biological factors. The sources usually include the mine and process wastes, the mine and process facilities that contain reactive sulphide, and the potentially neutralising minerals involved in mitigation of activity.

Acid drainage results from the exposure of sulphide minerals to atmospheric oxygen or oxygenated waters through mining, mineral processing, excavation or other earthmoving processes, whereby the sulphide minerals can become unstable and oxidise. Once this happens, it is difficult to prevent further chemical reactions from taking place, leading to generation of acid.

Neutral drainage and metalliferous drainage occur when the acidic water produced by acid drainage reacts with dispersion-prone or easily erodible surface material. It can also occur when the acidic water erodes or otherwise compromises the structural integrity of a waste dump or overburden stockpile, interacting with and dissolving metals or salts contained within the waste material or overburden. Although the acid may be neutralised by the minerals it dissolves, it may cause an increase in the concentration of toxic metals in the resulting drainage. If the acid is completely neutralised by dissolution of common carbonate minerals, precipitation of metals may result, leading to these precipitates being present in the resulting drainage.

Saline drainage occurs where the acid drainage is completely neutralised and no toxic metal residues are present in the resulting drainage. Special management conditions may still be imposed if sulphate salinity issues arise.

Erodible material

Erodible material means any dispersible material that is susceptible to erosion and which requires specific management.

Table 5. Considerations for land on which a minerals-in-brine abstraction trench or evaporation pond are situated

Item	Activity
1.	In determining the land on which a minerals-in-brine abstraction trench is situated, the following land is to be taken into account: (a) the land on which the trench is situated; (b) the land on which any embankments are situated, except to the extent that the embankments — (i) are constructed solely from material excavated from the trench; and (ii) will be used for back-filling the trench on completion.
2.	In determining the land on which an **evaporation pond not associated with minerals-in-brine extraction** is situated, the land on which the pond floor and any embankments are situated is to be taken into account.
3.	In determining the land on which an **evaporation pond (off-playa) associated with minerals-in-brine extraction** is situated, the land on which the pond floor and any embankments are situated is to be taken into account.
4.	In determining the land on which an **evaporation pond (on-playa) associated with minerals-in-brine extraction** is situated, the following is to be taken into account: (a) the land on which the pond floor is situated, but only to the extent that it is modified by earthworks; and (b) the land on which any embankments are situated, except to the extent that the embankments consist of natural landforms.

Table 6. On-playa and off-playa evaporation ponds and halite/salt stockpiles

Item	Activity
1.	An evaporation pond or halite/salt stockpile is: (a) **on-playa** to the extent that is situated within the boundary of a playa system (including a salt lake or coastal salt pan playa system); and (b) **off-playa** to the extent that is not situated within the boundary of a playa system (including a salt lake or coastal salt pan playa system).

Appendix 1

Mine activity types and other definitions

Airstrip

The area specified for operation of an aerodrome and its traffic. This includes the active runway and any supporting infrastructure (such as weather stations and communications towers).

Basic raw material activities

For the purposes of the *Mining Act 1978*, the following quarried materials (commonly referred to as raw materials) are considered a mineral as long as they do not occur on private land:

- limestone, rock, gravel;
- shale, other than oil shale;
- sand, other than mineral sand, silica sand or garnet sand; and
- clay, other than kaolin, bentonite, attapulgite or montmorillonite.

Due to the inert nature of these materials and the lower impact of associated processing equipment (primarily crushing and screening), the areas occupied by processing equipment and stockpiles are subject to a lower unit rate (Category C) than those of other commodity extraction activities.

Any other activities (for example, voids, fuel storage facilities) associated with such an operation are allocated to the same categories as would apply to extraction of other commodities.

Borefield

The area that contains the bores and associated infrastructure through which water (including brine) is extracted.

Borrow pits and shallow surface excavations

Surface excavations that are part of mining operations and extend no more than five metres below ground level. This includes (but is not limited to) shallow strip-mining and sand mining. It can also include mining voids that have been backfilled with waste rock to within five metres of ground level.

Shallow excavations made in creek beds for the purposes of sand extraction may be reported as land under rehabilitation if:

- the assessment date is both prior to the wet season and after extraction has ceased for the reporting period;
- the disturbances are naturally rehabilitated through seasonal rainfall; and
- these processes are recognised in the closure obligations for the site.

Disturbances in drought-affected areas (where natural rehabilitation is unlikely during the period), or where closure obligations impose a requirement for formal rehabilitation work, are required to be reported as active disturbances.

Buildings (other than workshop) or camp site

Miscellaneous infrastructure, other than workshop, which are associated with the mining operation. This includes campsites, office buildings, stores and laboratories but does not include temporary campsites established to support exploration or prospecting activity under a Programme of Work.

Core yard

The area associated with the storage of samples that are obtained as part of conducting exploration activities.

This does not include temporary areas that are established to support exploration or prospecting activity under a Programme of Work.

Dam – fresh water

The area associated with storage of fresh or marginal/brackish water (that is, water with Total Dissolved Solids not exceeding 2000mg/L).

Dam – saline water or process liquor

The area associated with the storage of water or process liquor of poor quality and which possesses physical, chemical or biological characteristics that may adversely affect the environment, (that is, Total Dissolved Solids exceed 2,000 mg/L).

Diversion channels and drains

The infrastructure associated with the diversion, capture and/or transport of overland water flows. These may be associated with dams containing either fresh-water or saline/process liquor.

Earthworks

Any operations to move or shape land or infrastructure of a type described in Schedule 1 of the Mining Rehabilitation Fund Regulations, which includes the following:

- excavating or filling;
- forming embankments or slopes;
- operations to control wind or water erosion of land; and
- battering, contouring, reshaping, ripping, capping or rock-armouring land.

Evaporation pond (off playa) associated with minerals-in-brine extraction

A facility created specifically for the production of a harvestable salt from brine through solar evaporation and which is not located within the boundary of a playa system (including a salt lake or coastal salt pan playa system).

For ponds in this location, the area occupied by the floor and by the embankment are both reportable as disturbances.

Evaporation pond (on playa) associated with minerals-in-brine extraction

A facility created specifically for the production of a harvestable salt from brine through solar evaporation and which is located within the boundary of a playa system (including a salt lake or coastal salt pan playa system).

For ponds in this location, the floor area may be excluded from the area of reported disturbance (that is, only the area of any embankments needs to be reported), provided that the floor of the evaporation pond is located on the surface of the lake or salt pan and is not modified by earthworks. The reportable area of an embankment may also be reduced to the extent that it uses natural landforms.

Evaporation pond not associated with minerals-in-brine extraction

The area associated with the storage of water or wastewater for the purpose of treatment by solar evaporation. This does not include ponds created specifically to produce harvestable product through evaporation (for example, for extraction of salts from brine or "minerals-in-brine").

Fuel storage facility

The area of land (inclusive of infrastructure) associated with the storage of hydrocarbons and other fuels that are used in the mining operation. A fuel storage facility may also include facilities for refuelling, such as refuelling pads, bowsers and associated infrastructure (such as oil/water separators).

Halite/salt stockpile

The area occupied by the stockpile of excess halite or other mineral salts produced during the extraction of minerals from brine. The stockpile may be located on playa or off playa (that is, on or off the surface of a playa system including a salt lake or coastal salt pan playa system). Its location will determine its rehabilitation liability category.

Heap or vat leach facility

A facility used to extract minerals and/or other compounds from ore, either by heap leach (that is, placing the ore on a liner and adding chemicals through drip systems) or by vat leach (that is, by placing an ore slurry within a tank or vessel along with chemicals and mixing or agitating the solution).

Land (other than land under rehabilitation or rehabilitated land) that is cleared of vegetation

This category includes:

- land that has been cleared in preparation for an activity for which a category exists but that has not yet commenced (for example, land cleared for establishing a pit but no void yet exists);
- land, either actively cleared of vegetation or on which no vegetation otherwise exists, on which a bund, safety barrier or other raised feature has been constructed. This extends to:
  - abandonment bunds that are not yet complete (and therefore do not yet represent completion of a closure obligation);
  - safety bunding around active voids or dumps; and
  - construction of bunds to create evaporation ponds from which harvestable products are extracted.

This category excludes land that is clear (or has been cleared) of vegetation in preparation for an activity that has not yet commenced but where the topsoil remains in place.

This category is more simply identified in the online MRF report as "Other Cleared Land".

Land (other than land under rehabilitation or rehabilitated land) that has been disturbed by exploration operations

This category includes all ground-disturbing activities that are approved under a PoW or an EMA Notice for prospecting and exploration operations. This is more simply identified in the online MRF report as "Exploration/Prospecting Operations".

It includes the areas covered by temporary infrastructure (such as campsites or tracks) that have been included in the PoW or EMA Notice and are installed to support exploration and prospecting activity. Although this may be of a type that otherwise belongs to an identified category, it is expected that this infrastructure will be removed (and disturbances rehabilitated) when the PoW is completed.

This category cannot be used to report exploration-related disturbance if the disturbance was not subject to a PoW or EMA Notice at the time it was undertaken (whether on a prospecting licence, exploration licence or mining lease).

Landfill site

An area of land designated for burial of non-hazardous material, other than waste produced by ore extraction or processing activities.

Laydown or hardstand area

An area associated with the storage of miscellaneous mining equipment, with the exception of hydrocarbons or hazardous material.

Low-grade ore stockpiles

The area of land associated with the dry storage of ore of inferior grade or quality. Low-grade ore stockpiles are to consist predominantly of ore minerals, with little-to-no waste materials. Stockpiles consisting of material that is predominantly waste are to be considered as a waste dump or overburden stockpile for the purposes of the MRF.

The class of the facility must also be considered when determining the appropriate rehabilitation liability category.

Minerals-in-brine

For the purposes of the MRF, this refers to mineral salts (halite, potash and/or magnesium) that are dissolved in brine and located within the boundary of a playa system (including a salt lake or coastal salt pan playa system).

Minerals-in-brine abstraction trench

The area of land occupied by a minerals-in-brine abstraction trench. In this context, an abstraction trench is a trench excavated for the purposes of conveying abstracted brine to the evaporation pond network.

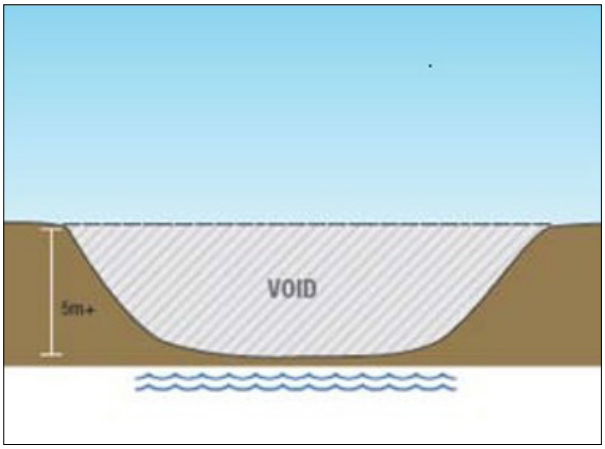
The area occupied by embankments does not need to be reported for MRF purposes, provided that the embankments will be used for back-filling on completion and are constructed solely from material excavated from the trench.

Mining voids

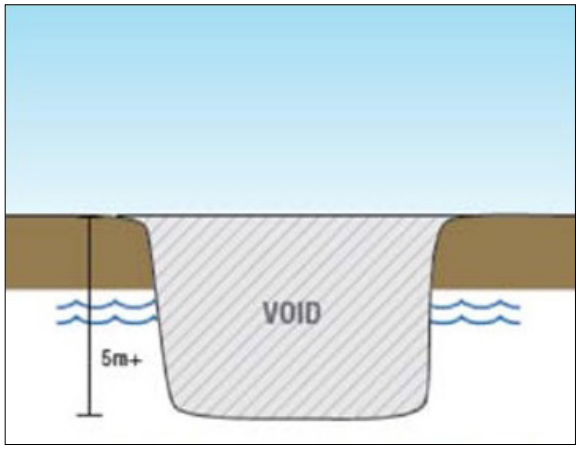
These are surface excavations that form part of mining operations and that extend at least five metres below ground level. The area reported in this category would normally be limited to the area represented by the void's surface expression or aperture. It would not include any bund that surrounds the void or the area between the void and the bund. Unless the bund is a completed abandonment bund (forming part of the closure obligations), these features would normally be categorised in the online MRF report as "Other Cleared Land"). Surface excavations less than five metres in depth are normally categorised as borrow pits or shallow surface excavations.

Mining voids are divided into two categories (either above or below groundwater level) that are dependent on the void's interaction with the water table. If the mining void reaches and progresses below the natural groundwater level, it must be categorised as below ground-water level, even if the void has been dewatered and a cone of depression has been created.

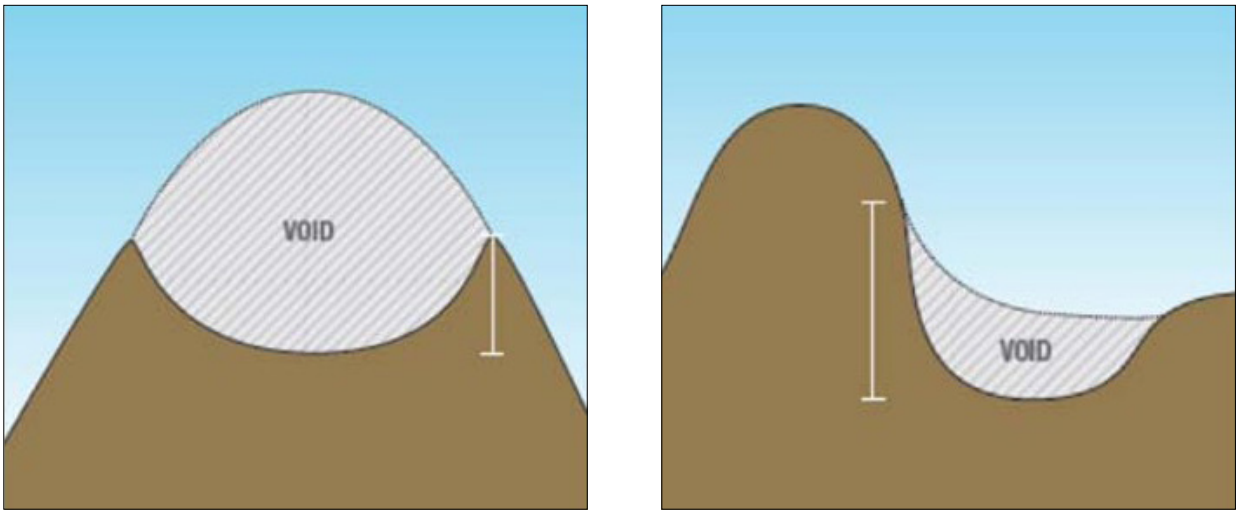
The depth of the void is determined independently of the groundwater level in and around the void. It is measured from the highest point of the void's perimeter, as illustrated below:



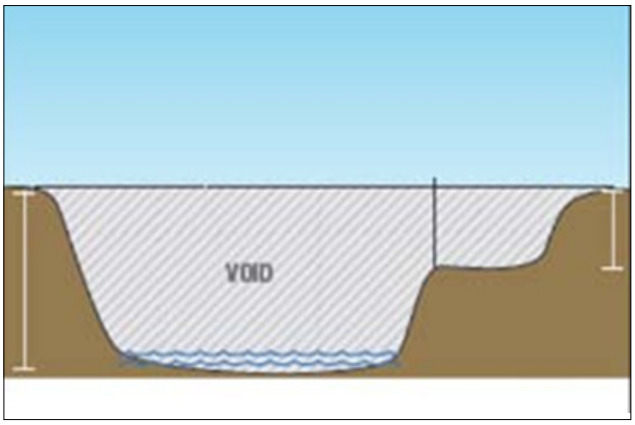
▲ Mining void (with a depth of at least 5 metres) above groundwater level



▲ Mining void (with a depth of at least 5 metres) below groundwater level (and showing the creation of a cone of depression).



▲ Mining voids (with a depth of at least 5 metres) above ground-water level (each measured from the highest point of the void's perimeter).



If a mining void contains sections of different depths, its area can be allocated to more than one category. In such situations, the vertical dividing line between each section extends upwards from the edge of the shelf of the shallower section. The outer perimeter of the next-deepest section is taken from the point at which the void begins its decline from the shelf to the bottom of the next section.

Plant site

The area of land that is required for the operation of machinery and equipment associated with the processing of minerals.

A plant site may include, but is not limited to, a mill, concentrator, crusher, processing tank or vessel or a power station. It also includes storage areas for toxic or hazardous chemicals used in mineral processing. It excludes areas that are used for storage or processing of by-products or waste materials (which do not involve processing of minerals).

Processing equipment or stockpile associated with basic raw material extraction

The area of land that is required for crushing, screening or other processing of basic raw materials, together with the resulting stockpiles of processed or unprocessed material.

Run-of-Mine (ROM) pad

The area of land on which run-of-mine ore is deposited for grading or blending prior to processing.

Sewage pond

The facility used for the storage and treatment of liquid waste or effluent (including wastewater) that originates from on-site processes other than the processing of minerals. This excludes ponds that treat waste liquid primarily by evaporation.

Tailings and residual storage facilities

An area used to store and consolidate tailings.

The class of the facility must also be considered when determining the appropriate rehabilitation liability category.

Topsoil stockpile

The area of land associated with the storage of growth material (topsoil). Growth material is the upper, outer-most layer of soil, which contains the highest concentration of organic matter and micro-organisms. In soil classification systems, this is often referred to as the "A Horizon". Typically, this layer extends 10cm–20cm below the surface but the characteristics of the soil profile are ultimately determined by local soil conditions.

This classification may also be used to report areas of land that are clear (or have been cleared) of vegetation in preparation for commencement of mining activity but where the topsoil remains in place. Land reported in this fashion must be in a state that otherwise approximates the condition expected for categorising as land under rehabilitation.

Transport or service infrastructure corridor

The area of land occupied by roads (access and haulage), causeways, railway lines, pipelines and power lines, which generally produce a similar footprint. This category excludes temporary tracks that are created to support prospecting or exploration activity under a Programme of Work (PoW) and that are required to be rehabilitated on completion of the PoW. It also excludes public roads for which no rehabilitation liability exists under the Mining Act.

These disturbances must be reported against the tenement to which the approval relates. For example, if a Miscellaneous Licence has been specifically approved for the purposes of a haul road, the disturbance must be reported against that licence and not against any underlying mining lease or other licence.

Waste dump or overburden stockpile

The area associated with the storage of unprocessed waste material produced by mining operations. This excludes any halite or salt stockpile produced during minerals-in-brine extraction.

The class of the facility must also be considered when determining the appropriate rehabilitation liability category.

Workshop

The area of land that is occupied by buildings for the maintenance and storage of plant, equipment and mine vehicles.

Government of Western Australia

Department of Energy, Mines, Industry Regulation and Safety

8.30am – 4.30pm

Mineral House, 100 Plain Street
East Perth, Western Australia 6004
Tel: +61 8 9222 3333

Fax: +61 8 9222 3862

Online
Website: www.demirs.wa.gov.au
Email: REC.Consultation@demirs.wa.gov.au

Mailing address
Locked Bag 100
East Perth WA 6892

This publication is available on request in other formats.
National Relay Service: 13 36 77
Translating and Interpreting Service (TIS) 13 14 50

DEMIRSFEB25_9629