

Fact sheet

'Reasonably practicable' for mine rehabilitation

24/01/2023

What is reasonably practicable?

The term 'reasonably practicable' is used in relation to certain rehabilitation obligations on lease holders in various clauses in Schedule 8A of the [Mining Regulation 2016](#).

The term 'reasonably practicable' is not defined in the Regulation. However, the courts have found that what is 'reasonably practicable' must be determined objectively. This means that a lease holder must do what is expected of a reasonable person in the lease holder's position.

What factors are considered in determining what is 'reasonably practicable'?

Clause 5 of Schedule 8A has the effect of imposing a standard condition on all mining leases that:

'The holder of a mining lease must rehabilitate land and water in the mining area that is disturbed by activities under the mining lease as soon as reasonably practicable after the disturbance occurs.'

In determining whether a lease holder has rehabilitated land and water "as soon as reasonably practicable", the NSW Resources Regulator will consider both (a) the time in which steps have been or are to be taken and (b) the nature of those steps, having regard to all relevant matters including:

- what the lease holder knows, or ought reasonably to have known, about:
 - the land and water in the mining area; and
 - ways of rehabilitating the land and water in the mining area;
- the likelihood and degree of any environmental harm that might continue or result from any delay in rehabilitating the land and water in the mining area; and
- the availability and suitability of ways to rehabilitate the land and water in the mining area.

In determining whether a lease holder has rehabilitated land and water "as soon as reasonably practicable", the NSW Resources Regulator will only have regard to the cost of the rehabilitation after considering all other relevant matters. As a general rule, the cost of any rehabilitation of land and water will not excuse a failure to conduct rehabilitation of land and water unless the cost is grossly disproportionate to the likelihood and degree of any environmental harm that might continue or result from any delay in rehabilitating the land and water in the mining area.

Preventing or minimising harm to the environment

Clause 4(1) of Schedule 8A has the effect of imposing a standard condition on all mining leases that:

'The lease holder of a mining lease must take all reasonable measures to prevent or, if that is not reasonably practicable, to minimise, harm to the environment caused by activities under the mining lease.'

In fulfilling this obligation, lease holders should consider:

Fact sheet

- the likelihood and degree of the harm or potential harm¹
- what the leaseholder knows, or ought reasonably to know, about:
 - the harm; and
 - ways of eliminating or minimising the harm, including through current leading practices;
- the availability and suitability of ways to eliminate or minimise the harm, including current leading practice and state of technical knowledge
- the likelihood of possible measures being successful to prevent or minimise harm.

Preventing and minimising harm to the environment means that the greater the risk of harm, the greater the need for effective risk controls to be implemented to manage the risk. If it is not reasonably practicable to prevent the harm, the lease holder must minimise the harm, by reducing the likelihood and consequence, using a range of risk control measures.

Rehabilitate as soon as reasonably practicable after surface disturbance – applying the factors in practice

Lease holders must rehabilitate² land and water in the mining area that is disturbed by activities under the mining lease as soon as reasonably practicable after the disturbance occurs. In other words, once mining operations in a particular area of the mine are completed, the area must be rehabilitated to achieve approved rehabilitation outcomes³ in a timely manner.

Rehabilitation⁴ means the treatment or management of disturbed land or water for the purposes of establishing a safe and stable environment. In this context, a lease holder must demonstrate that it is fulfilling the obligation to undertake rehabilitation, as soon as reasonably practicable after the disturbance occurs, throughout the following rehabilitation phases:

- decommissioning – which includes the management, demolition and or retention of infrastructure
- landform establishment – constructing the approved final landform to ensure it is stable in the long term
- growth medium development – preparing a suitable substrate required to achieve the target vegetation outcome
- ecosystem and land use establishment – establishing the final land use, which for a vegetated land use includes seeding with the target species mix
- ecosystem and land use development – the management of maturing rehabilitation areas to facilitate the achievement of the rehabilitation outcomes in a timely manner.

Rehabilitation throughout these phases may not be limited to on-the-ground physical works, but may also include planning and management activities that are essential to achieve sustainable rehabilitation outcomes. This may include stakeholder consultation, mine and rehabilitation planning, risk assessments, research and trials and monitoring programs.

¹ 'Harm' is defined in Schedule 8A of the *Mining Regulation 2016* to have the same meaning as in the *Protection of the Environment Operations Act 1997*: 'harm to the environment includes any direct or indirect alteration of the environment that has the effect of degrading the environment and, without limiting the generality of the above, includes any act or omission that results in pollution.'

² Rehabilitation is effectively another phase of mining, which is undertaken both progressively over the life of the mine, as well as the end of mining (i.e. total lifecycle of a mine).

³ The 'rehabilitation outcome documents' are set out in Schedule 8A of the *Mining Regulation 2016* and comprise the rehabilitation objectives, rehabilitation completion criteria and, for large mines, a final landform and rehabilitation plan.

⁴ Definition of rehabilitation in the *Mining Act 1992*.

Fact sheet

The relevant matters to be taken into consideration for the timeliness in which rehabilitation is to occur is non-exhaustive but includes:

- whether the land is being used for mining operations or operating infrastructure
- the completion of mining operations in the area
- the size and complexity of the area
- the suitability of weather and environmental conditions for rehabilitating the land and water
- the resources required to achieve approved rehabilitation outcomes
- reasonably foreseeable hazards to achieving the rehabilitation of the mining area.

As the rehabilitation process continues until the approved rehabilitation outcomes are met, the implementation of corrective measures to address issues identified from monitoring data is another relevant matter in consideration of the timeliness in which rehabilitation is to occur.

Costs, or the availability of resources or equipment alone, are not relevant factors for delaying rehabilitation. Lease holders must plan rehabilitation of disturbed areas as part of the mine's lifecycle and ensure that equipment and resources have been appropriately allocated to meet these commitments.

It is important to note that what is reasonably practicable can change over time, and that new technology and strategies may be considered appropriate and available for rehabilitation.

Identifying and recording reasonably foreseeable hazards

Lease holders must identify and record any reasonably foreseeable hazard that presents a risk to the lease holder's ability to ensure that rehabilitation of the mining area achieves the final land use for the mining area.⁵

A reasonably foreseeable hazard is any hazard that a reasonable person in the lease holder's position is aware of, or ought to reasonably be aware of. Determining whether a hazard is reasonably foreseeable needs to be considered objectively.

Whenever a leaseholder identifies a hazard that presents a risk to the lease holder's ability to ensure that rehabilitation of the mining area achieves the final land use for the mining area, the leaseholder must conduct a rehabilitation risk assessment as soon as reasonably practicable.⁶

Examples

The following table includes a non-exhaustive list of examples of what may be 'reasonably practicable' to comply with rehabilitation obligations. The applicability of the examples is based on the nature, scale and risks associated with a specific mine site. As such, not all of the examples may be relevant to a particular mine site or a particular circumstance.

Table 1 Examples of what may be reasonably practicable to comply with rehabilitation obligations

Obligation	Examples
Must take all reasonable measures to prevent, or if that	Specific examples of scenarios that may lead to actual or potential harm to the environment due to mining activities may include, but are not limited to the following: <ul style="list-style-type: none">• tailings dam failures

⁵ *Mining Regulation 2016*, Schedule 8A, cl 6.

⁶ *Mining Regulation 2016*, Schedule 8A, cl 7(3).

Fact sheet

Obligation	Examples
is not reasonably practicable, to minimise harm to the environment ⁷	<ul style="list-style-type: none"> landform failure including landslips and erosion groundwater discharges from underground workings surface water discharges off site contamination caused by the fuels, chemicals, hazardous materials and waste (including process waste materials). <p>Examples of reasonably practicable measures to prevent harm to the environment by mining activities relating to these types of scenarios include, but are not limited to the following:</p> <ul style="list-style-type: none"> an environmental risk assessment that is relevant to the mining operation has been undertaken using suitably qualified and experienced personnel suitable controls to prevent environmental harm have been implemented based on the outcomes of an environmental risk assessment specific monitoring programs have been implemented to establish the effectiveness of environmental controls potential impacts on the environment are monitored and assessed trigger action response plans have been initiated based on the results of the relevant monitoring programs. <p>It would be reasonably practicable to minimise the harm caused by mining activities for these types of scenarios by implementing incident response management plans as soon as reasonably practicable, which could include (as relevant) the following actions, as a minimum:</p> <ul style="list-style-type: none"> notification and ongoing communication to land holders potentially affected by actual or potential off-site impacts to ensure that measures are rapidly implemented to avoid or minimise environmental harm. For example, this may include notifying downstream water users to cease irrigation where pollution of streams may have occurred, as a result of the incident implementation of specific mitigation measures such as containment structures and or materials to minimise the migration of actual or potential environmental harm implementation of remedial measures to rectify potential environmental impacts. <p>In the event of significant environmental incidents, it would also be considered reasonably practicable to implement an incident management team involving suitably qualified and experienced personnel to coordinate the development and implementation of measures to minimise harm to the environment.</p>
Rehabilitating as soon as reasonably practicable after disturbance ⁸	<p>Decommissioning, landform establishment and growth medium development phases</p> <p>Where mining activities have ceased, it would be considered to be reasonably practicable to commence rehabilitation within the decommissioning, landform establishment or growth medium development phases, depending on the type of mining domain. However, it may not be reasonably practicable to commence the rehabilitation of disturbed land where the land is subject to further approved mining operations (e.g. activity is permitted under a valid development consent). Examples may include but are not limited to the following:</p> <ul style="list-style-type: none"> unshaped overburden dumps where future emplacement of material is scheduled under the approved mine plan

⁷ Mining Regulation 2016, Schedule 8A, cl 4.

⁸ Mining Regulation 2016, Schedule 8A, cl 5.

Fact sheet

Obligation	Examples
	<ul style="list-style-type: none">• surface infrastructure (e.g. washery, machinery/materials storage area) that continue to be utilised as part of an underground mining operation. <p>It may not be considered to be commencing rehabilitation, as soon as reasonably practicable, where rehabilitation is delayed on the grounds of future operations that are not subject to a valid development application/consent.</p> <p>Ecosystem and land use establishment phase</p> <p>Progressive rehabilitation may be impacted by climatic or seasonal conditions. It may not be reasonably practicable to rehabilitate disturbed land because of:</p> <ul style="list-style-type: none">• extreme heat, bushfires or drought during summer months• prolonged rainfall or storms during wetter months. <p>However, it would be considered to be rehabilitating as soon as reasonably practicable when actions were undertaken to mitigate the effect of the climatic or seasonal conditions including the following:</p> <ul style="list-style-type: none">• ensuring all rehabilitation phases up to the ecosystem establishment phase have been completed and measures have been implemented to protect substrate until revegetation works are rescheduled• where revegetation has been delayed, targeting the next date in consideration of forecast climatic conditions• where prolonged unseasonal conditions such as drought are expected, proceeding with revegetation (e.g. seeding) with a contingency to undertake supplementary seeding/planting where vegetation does not establish following the onset of more favourable seasonal conditions. <p>A delay in progressive rehabilitation may also occur as a result of a failure to establish the target species associated with the approved rehabilitation outcome (e.g. pasture vegetation established in area approved to be returned to a native ecosystem). As such, a matter that would need to be considered in determining whether rehabilitation has commenced as soon as reasonably practicable is whether the vegetation species mix specific to the approved rehabilitation outcome was utilised in the seeding and or planting program.</p> <p>Ecosystem and land use sustainability phase</p> <p>The achievement of the approved rehabilitation outcomes may be delayed due to the poor performance of areas where rehabilitation has commenced. Examples of potential risks that may affect rehabilitation performance are listed in <i>Guideline 1: Rehabilitation Risk Assessment</i>.</p> <p>It would be considered to be rehabilitating as soon as reasonably practicable if actions were undertaken to enhance rehabilitation performance and facilitate achievement of rehabilitation outcomes in a timely manner by:</p> <ul style="list-style-type: none">• implementing an inspection regime to identify potential actual or emerging issues that have the potential to delay revegetation establishment• implementing rehabilitation monitoring programs to establish whether rehabilitation performance is on a trajectory towards meeting the approved rehabilitation outcomes• implementing corrective measures to address issues identified through rehabilitation inspection and monitoring programs. <p>General considerations</p> <p>In some instances, there may be knowledge gaps that exist that may delay the commencement of rehabilitation (e.g. tailings dam dewatering and capping strategy). In these scenarios, it would be considered to be rehabilitating as soon as reasonably practicable if studies, research and investigations had been identified, designed and</p>

Fact sheet

Obligation	Examples
	are underway to address knowledge gaps and/or constraints to achieving rehabilitation outcomes. The scope and timeframes for these programs are expected to be included in the forward program submitted to the Regulator.
Identify and record reasonably foreseeable hazards ⁹	<p>In determining compliance with clause 6(3), a title holder will need to demonstrate:</p> <ul style="list-style-type: none"> • a rehabilitation risk assessment has been conducted and is relevant to the mining operation. • monitoring programs are in place to establish the effectiveness of rehabilitation controls as well as the performance of rehabilitation. This may include routine inspections as well as monitoring of the performance indices nominated by the rehabilitation completion criteria • quality assurance programs are in place to validate that rehabilitation controls have been implemented in accordance with the design and are effective. • the results of the monitoring and quality assurance programs are recorded. <p><i>Guideline 1 Rehabilitation Risk Assessment</i> identifies a range of potential hazards that may present a risk to the lease holder's ability to achieve the approved rehabilitation objectives and rehabilitation completion criteria.</p>

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CM9 reference MEG/DOC21/44106

⁹ *Mining Regulation 2016*, Schedule 8A, cl 6.