



Rehabilitation Management Plan

Name of Mine	Sunsalt Mourquong Operation
Rehabilitation Management Plan commencement date	1 st July 2022
Rehabilitation Management Plan revision date and Version number	1 st July 2023, Version 1
Mining Lease numbers and expiry dates	ML 1512 (Expiry 2023, under renewal)
Name of Lease Holder	Larmon Pty Ltd
Date of submission	12-05-23

Abstract

Sunsalt is an unusual mine based in far west NSW. Mineral extraction takes place by extracting salt from bore water which is pumped from bore water. There is no ongoing land disturbance after the initial construction and there is no expectation of any future disturbance. No rehabilitation has taken place onsite and the stripped topsoil and overburden are still stockpiled from 2002.

As there is no future disturbance or rehabilitation planned (until the mine closes, which is not in the foreseeable future), the forward program is extremely limited, and no GIS information has been lodged in the portal. This RMP forms the bases of any rehabilitation that may take place at mine closure, potentially in 2050.

Contents

1. Part 1 – Introduction.....	4
1.1 History of Operations.....	4
1.2 Current development consents, leases and licences	4
1.3 Land ownerships and land use.....	4
1.3.1 Land ownership and land use figure.....	5
2. Part 2 – Final Land Use.....	7
2.1 Regulatory requirement for rehabilitation.....	7
2.2 Final land use options assessment	7
2.3 Final land use statement	7
2.4 Final land use and mining domains	7
2.4.1 Final land use domains.....	7
2.4.2 Mining domains	8
3. Part 3 – Rehabilitation risk assessment	9
4. Part 4 rehabilitation objectives and rehabilitation completion criteria	14
4.1 Rehabilitation objectives and rehabilitation completion criteria.....	14
4.2 Rehabilitation objectives and rehabilitation completion criteria – stakeholder consultation ...	18
5. Final landform and rehabilitation plan	19
5.1 Final landform and rehabilitation plan – electronic copy.....	19
6. Part 6 – Rehabilitation implementation.....	21
6.1 Life of mine rehabilitation schedule	21
6.2 Phases of rehabilitation and general methodologies	23
6.2.1 Active mining phase	23
6.2.2 Decommissioning	25
6.2.3 Landform establishment	26
6.2.4 Growth medium development.....	26
6.2.5 Ecosystem and land use establishment	27
6.2.6 Rehabilitation of areas affected by subsidence.	27
7. Part 7 – Rehabilitation quality assurance process.....	28
8. Part 8 – Rehabilitation monitoring program.....	35
8.1 Analogue site baseline monitoring.....	35
8.2 Rehabilitation establishment monitoring.....	35
8.3 Measuring performance against rehabilitation objectives and rehabilitation completion criteria	35
9. Part 9 – Rehabilitation research, modelling and trials	36
9.1 Current rehabilitation research, modelling and trials	36
9.2 Future rehabilitation research, modelling and trials	36
10. Part 10 – Intervention and adaptive management.....	36
11. Part 11 – Review, revision and implementation.....	39

1. Part 1 – Introduction

1.1 History of Operations

Larmon Pty Ltd (trading as Sunsalt) have been operating from this site since 2002 and has gained significant knowledge and techniques to efficiently extract mineral salts from inland saline water supplies.

The mining process involves extracting the brine from the Mourquong Disposal Basin to the Evaporation Ponds via an Inlet Channel. The mineral extraction process involves keeping the Evaporation Pond brine at an optimum salt mineral concentration and depth to allow Sodium Chloride (NaCl) salt crystals to form within the Evaporation Pond. Once a substantial amount of salt has formed within the Evaporation Pond, it can be harvested and stockpiled to be further processed onsite or sold as product. The extracted bittern (liquid) is left in the Bittern Pond to concentrate to an optimum level before being sold as product. There is no waste product because all the salt and bittern is either further processed offsite or sold as product.

1.2 Current development consents, leases and licences

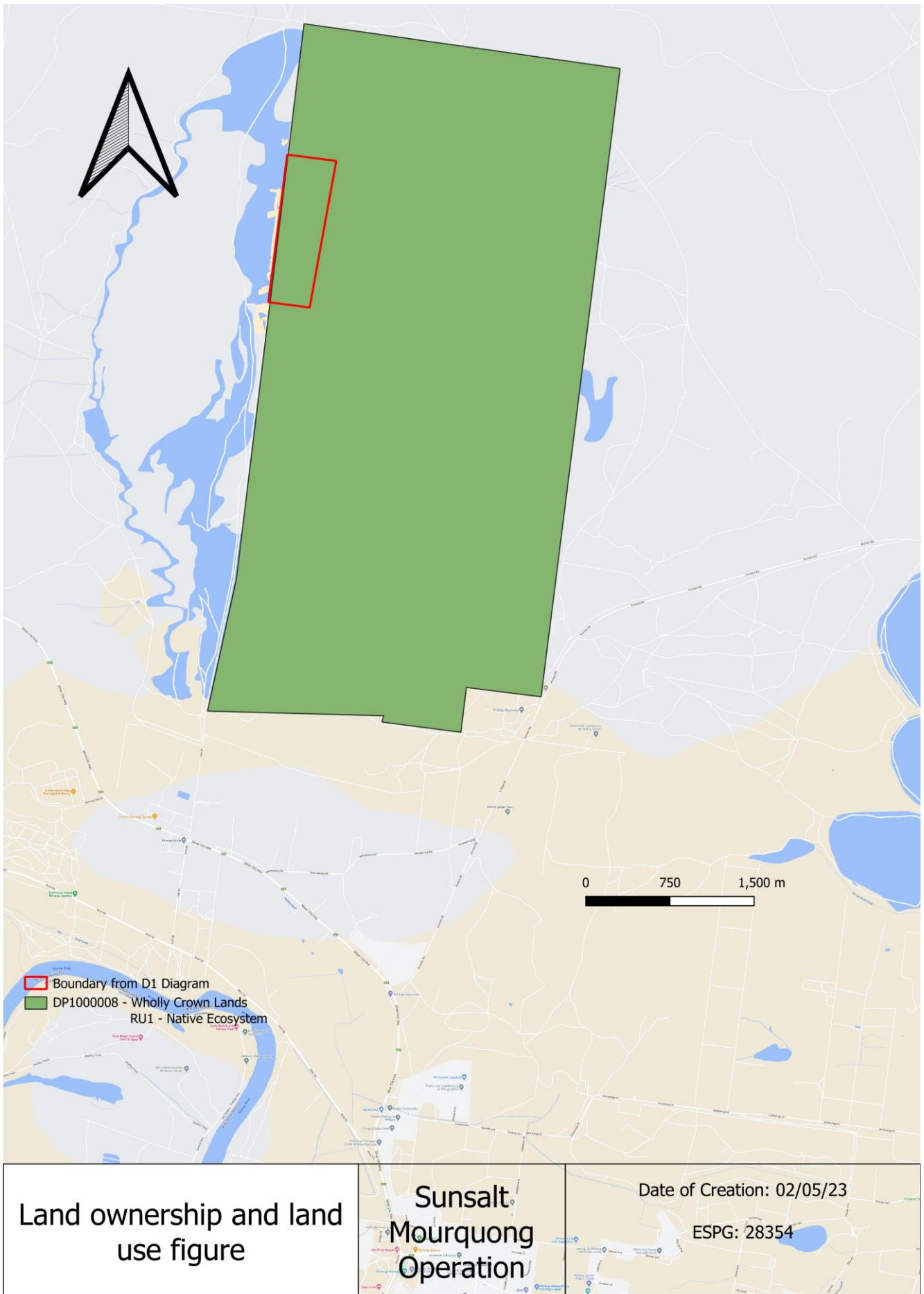
Name	Reference	Grant date	Authority responsible	Renewal/expiry
Development approval	DA120/01	29/11/2001	Wentworth Shire Council	Does not need renewed
EPA licence	11605	18 th January 2002	DECCW	12 May; annual report due; does not need renewed
Mining lease	1512	10 th May 2002	NSW DPI	Renewal in 7 year periods commencing from issue date with end of lease in 2023, it is currently under renewal.

1.3 Land ownerships and land use

The mining lease is entire enclosed by a parcel of land (Lot 6918 DP 1000008) which is recognised as Vacant Crown Land and licensed (licence no 376369) to the Water Administration Ministerial Corporation.

The current land zoning is listed as Primary Production (RU1) in the Wentworth Shire Council LEP 2011, however due to the nature of the soil and vegetation on site relates to a low carrying capacity, so no grazing occurs.

1.3.1 Land ownership and land use figure



2. Part 2 – Final Land Use

2.1 Regulatory requirement for rehabilitation

Document	Condition	
DA 120/01	8	No removal of soil or disturbance of vegetation outside of the work area will be permitted without the written approval of the Department of Land and Water Conservation and the Shire of Wentworth.
	13	No substantial native vegetation is to be removed without the prior approval from the Wentworth Shire Council
	18	The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal of. Waste generated at the premises to be disposed of at the premises, except as expressly permitted by a license under the Protection of the Environment Operation Act 1997.
	5	The proponent will be required to comply with conditions attached to a mining lease granted by the department of Mineral Resources for the purpose of undertaking works described in the EIS. This will not remove or replace the need of the proponent to obtain any other approvals and consents required by other relevant authorities.
EIS 2001		It is the intention of the proponent, that if the salt extraction operations cease at the project site, the area will be rehabilitated to its current condition.
		All other infrastructure including the supply channel will be removed from the site. These areas will also be cross ripped to aid natural regeneration of the pre-existing vegetation type from the surrounding land.
		It is the intention of the proponent, that if and when the salt extraction operations cease at the Project Site, the area will be rehabilitated to its current condition. It is currently highly saline land with a dominant vegetative cover of halophytes (salt tolerant species).

2.2 Final land use options assessment

The land is zoned General Rural under the Wentworth Local Environment Plan 1993. The EIS states that the area be returned to its pre-mining condition, therefore natural ecosystem is the final land use.

2.3 Final land use statement

The final land use of any mining area should be native ecosystem as stated in the EIS submitted with the development consent.

2.4 Final land use and mining domains

2.4.1 Final land use domains

The entire site should be restored to:
native ecosystem

2.4.2 Mining domains

Mining Domain	Final land use domain
Infrastructure area	native ecosystem
Active mining area (open cut void)	native ecosystem

3. Part 3 – Rehabilitation risk assessment

Conditions of a mining lease granted under the Mining Act 1992 require the lease holder to conduct a rehabilitation risk assessment and implement measures to eliminate, minimise or mitigate the risks in accordance with the Resources Regulator's Guideline: Rehabilitation risk assessment.

A risk assessment workshop was undertaken on 24 April 2023. The workshop was used to identify the key issues that presented a risk to achieving satisfactory within the lease area. The risk assessment included key Sunsalt personnel.

The risk assessment has been used to inform the preparation of this Plan.

The objectives of the risk assessment were to:

- Identify the risks associated with rehabilitation and closure to achieve the approved post mining land uses;
- Identify knowledge gaps in Sunsalt's current understanding of the risks to rehabilitation.
- Identify the investigations/controls/action plans necessary to effectively mitigate risks and/or realise opportunities and to close any identified knowledge gaps;
- Inform the development of this RMP, to provide a basis to determine additional investigations and/or project works to be undertaken; and
- Provide the framework to satisfy relevant internal and government guidelines, requiring implementation of a risk-based approach to closure.

Rehabilitation risks, controls and proposed controls will regularly be reviewed and revised (as required).

Experience of the proponent at an existing Hattah gypsum mine has shown that in similar vegetation and soil types, the disturbed areas will rapidly revegetate naturally from the surrounding highly saline land. The ground initially colonized by Pigface, followed by samphire/glasswort species.

Rehabilitation Risk Assessment

General Rehabilitation Risk Assessment

Hazard	Risks	Risk Controls	Details
Administrative failures	Insufficient skills and experience of rehabilitation personnel.	Only experienced operators will be engaged to conduct rehabilitation activities.	
	Lack of clearly defined responsibilities.	Responsibilities and roles for rehabilitation will be defined in a landclearing and rehabilitation guideline that is to be developed and used with inductions.	
	Insufficient funding for or prioritization of rehabilitation activities	Sunsalt will ensure that sufficient funds are available to conduct rehabilitation activities. Note, a rehabilitation bond is held over the site and will be reviewed annually for the life of the mine.	
Erosion		Slopes to be reduced.	Slopes to be reduced to a maximum of 3H:1V within the void
		Reduce slope lengths.	Slope Lengths shall not exceed 50 metres before being broken by earth banks or similar for batter slopes of 3H:1V.
		Topsoil stockpile management.	Slopes no greater than 18o (3H:1V). Stockpile height no greater than 2 metres. No stockpiles to be constructed in areas of concentrated flows. See 6.2.1 for further information
Wind Erosion		Dust suppression	Water cart to be engaged during mining, hauling and rehabilitation activities. During adverse conditions: <ul style="list-style-type: none"> • Cease mining or hauling activities in adverse wind

Hazard	Risks	Risk Controls	Details
			conditions: and • Increase water cart frequency.
Bushfire	Harm to rehabilitation areas.	Limit access for deliberately lit fires.	Appropriate fencing is to be repaired and maintained. Locked access gate outside of operating hours.
		Maintain fire breaks.	

Active Mining Phase Rehabilitation Risk Assessment

The active mining phase has occurred onsite and no further active mining is planned to take place within the lease term.

Decommissioning Phase Rehabilitation Risk Assessment

Hazard	Risks	Risk Controls	Details
Infrastructure	Retained roads and hardstands are not safe and stable.	All roads and hardstand areas to be retained for the final landuse will be reduced in width/size to that suitable for the final landuse.	Roads not required for final landuse are removed. Hardstand areas reduced to a size required for the final landuse. Slopes of major tracks are to be <10degrees or have cross drains/banks installed. Where unsuitable soils are present, tracks are to be stabilised with crushed bricks, concrete, gravel or similar

Landform Establishment Phase Rehabilitation Risk Assessment

Hazard	Risks	Risk Controls	Details
Unstable landform	The final landform is unstable.	Continued monitoring of the landform establishment works by suitably qualified person/s.	Slopes to be reduced until all slopes meet the approved final landform. See 6.2.1 for further information
Final landform unsuitable for final landuse.	Final landform does not conform to approved final landform.	Landform to be remediated to approved final landform	Slopes to be reduced until all slopes meet the approved final landform. Survey plan or similar to be prepared to show final slopes

			meet the approved final landform.
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Growth Medium Establishment Phase Rehabilitation Risk Assessment

Hazard	Risks	Risk Controls	Details
Unsuitable physical and structural substrate	Substrate compacted	Substrates to be placed in such a way to maintain soil structure as far as possible	Minimise vehicle movement over the emplaced substrates. Substrates to be lightly ripped to permit water infiltration and air penetration prior to topsoil placement.
Subsoil and topsoil deficit	Insufficient on-site material available for growth medium.	Available topsoils are stockpiled appropriately and reused on the site.	Records to include amounts of subsoil and topsoils stripped, locations and depths re-spread. If on-site topsoil/growth medium deficit is noted, material may be imported to assist in rehabilitation. See 6.2.1 for further information

Ecosystem and Land Use Establishment Phase Rehabilitation Risk Assessment

Hazard	Risks	Risk Controls	Details
Damage to seed through revegetation processes	Insufficient germination of seeds to provide groundcover.	Protect seeds from damage during rehabilitation.	Experienced operators to be employed for rehabilitation works. Rehabilitation areas to be protected from vehicular traffic by fencing or similar barriers. Minimize handling of seeds during storage and use.
Weed Infestation	Weed number overwhelm revegetation	Regular inspection and spraying for weeds will be undertaken.	
Inappropriate rehabilitation techniques	Failure of rehabilitation	Ensure approved rehabilitation procedures are followed	Experienced operators to be employed for rehabilitation works. Rehabilitation to be undertaken in

Hazard	Risks	Risk Controls	Details
			accordance with the Rehabilitation Plan approved within the DA.
		Approved plans will be reviewed as required to ensure best practice techniques are employed.	
Adverse weather conditions	Failure of rehabilitation	Revegetation will not be undertaken during periods of drought.	
		Artificial watering to be trailed to enable germination	
		Rehabilitation works will not be undertaken during wet periods where soils and seed planting may be damaged	
Inappropriate Seasonal timing of revegetation	Failure of rehabilitation.	Revegetation will preferably be sown during the spring and autumn seasons to avoid hot and dry weather conditions and winter frost.	
Insufficient establishment of target species and limited species diversity	Vegetation community does not become established on final landform affecting final land use and ecosystem.	Sowing of additional seed mix for targeted species or additional species endemic to the pre-disturbance community. Use seed and mulch mix or other application techniques. Soil amelioration works such as addition of fertiliser. Additional weed control activities (mechanical and/or chemical)	

4. Part 4 rehabilitation objectives and rehabilitation completion criteria

4.1 Rehabilitation objectives and rehabilitation completion criteria

Rehabilitation Objectives Sourced from DA or SOEE	Final Landuse Domain	Mining Domain	Spatial Reference (e.g. A3)	Rehabilitation Objective Category	Rehabilitation Objectives
EIS -2001 - All other infrastructure will be removed from the site and all stockpiled salt collected.	Native Ecosystem	Infrastructure Area	A1	Removal of Infrastructure	EIS -2001 - All other infrastructure will be removed from the site and all stockpiled salt collected.
EIS 2001 - The decommissioning of the crystalliser bays will be accomplished by the placing of soil material that was used to constructed the walls into the floor of the crystalliser.	Native Ecosystem	Infrastructure Area	A1	Removal of Infrastructure	EIS 2001 - The decommissioning of the crystalliser bays will be accomplished by the placing of soil material that was used to constructed the walls into the floor of the crystalliser.
	Native Ecosystem	Infrastructure Area	A1	Land Contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm.
	Native Ecosystem	Infrastructure Area	A1	Management Of Wastes and Process Materials	There are no wastes in the process, all salt will be removed from site on decommissioning.
EIS 2001 - The project site, once fully rehabilitated would be similar in its current condition. The land would still be highly salie and the vegetation present restricted to halophytic vegetation.	Native Ecosystem	Infrastructure Area	A1	Land use	EIS 2001 - The project site, once fully rehabilitated would be similar in its current condition. The land would still be highly salie and the vegetation present restricted to halophytic vegetation.
	Native Ecosystem	Infrastructure Area	A1	Landform Stability	The final landform is stable for the long-term and does not present a risk of environmental harm downstream/downslope of the site or a safety risk to the public/stock/native fauna.

EIS -2001 - It is not proposed to try and return the land surface to its natural pre-development topography.	Native Ecosystem	Infrastructure Area	A1	Landform Stability	EIS -2001 - It is not proposed to try and return the land surface to its natural pre-development topography.
EIS - 2001 - These areas wil also be crossripped to aid natural regeneration of the pre-existing vegetation trype from the surrounding land.	Native Ecosystem	Infrastructure Area	A1	Landform Stability	EIS - 2001 - These areas wil also be crossripped to aid natural regeneration of the pre-existing vegetation trype from the surrounding land.
	Native Ecosystem	Infrastructure Area	A1	Surface Water	Runoff water quality from mine site is similar to, or better than the pre-disturbance runoff water quality.
	Native Ecosystem	Infrastructure Area	A1	Water Approvals	Structures that take or divert water such as final voids, dams, levees etc. are appropriately licensed (e.g. under the Water Management Act 2000) and where required ensure sufficient licence shares are held in the water source(s) to account for water take.
	Native Ecosystem	Infrastructure Area	A1	Groundwater Quality	Groundwater quality is similar to, or better than the pre-disturbance groundwater quality.
	Native Ecosystem	Infrastructure Area	A1	Groundwater Regime	Impacts to groundwater regime are within range as predicted in pre-mining environmental assessment.
EIS - 2001 - The area will be rehabilitated to its current condition. It is currently highly saline land with a dominatn vegetative cover of halophytes.	Native Ecosystem	Infrastructure Area	A1	Fauna	The area will be rehabilitated to its current condition. It is currently highly saline land with a dominatn vegetative cover of halophytes.
EIS -2001 - All other infrastructure will be removed from the site and all stockpiled salt collected.	Native Ecosystem	Water management area	A3	Removal of Infrastructure	EIS -2001 - All other infrastructure will be removed from the site and all stockpiled salt collected.
EIS 2001 - The decommissioning of the crystalliser bays will be accomplished by the placing of soil material that was used to constructed the walls into the floor of the crystalliser.	Native Ecosystem	Water management area	A3	Removal of Infrastructure	EIS 2001 - The decommissioning of the crystalliser bays will be accomplished by the placing of soil material that was used to constructed the walls into the floor of the crystalliser.
	Native Ecosystem	Water management area	A3	Land Contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm.

	Native Ecosystem	Water management area	A3	Management Of Wastes and Process Materials	There are no wastes in the process, all salt will be removed from site on decommissioning.
EIS 2001 - The project site, once fully rehabilitated would be similar in its current condition. The land would still be highly saline and the vegetation present restricted to halophytic vegetation.	Native Ecosystem	Water management area	A3	Land use	EIS 2001 - The project site, once fully rehabilitated would be similar in its current condition. The land would still be highly saline and the vegetation present restricted to halophytic vegetation.
	Native Ecosystem	Water management area	A3	Landform Stability	The final landform is stable for the long-term and does not present a risk of environmental harm downstream/downslope of the site or a safety risk to the public/stock/native fauna.
EIS -2001 - It is not proposed to try and return the land surface to its natural pre-development topography.	Native Ecosystem	Water management area	A3	Landform Stability	EIS -2001 - It is not proposed to try and return the land surface to its natural pre-development topography.
EIS - 2001 - These areas will also be crossripped to aid natural regeneration of the pre-existing vegetation trype from the surrounding land.	Native Ecosystem	Water management area	A3	Landform Stability	EIS - 2001 - These areas wil also be crossripped to aid natural regeneration of the pre-existing vegetation trype from the surrounding land.
	Native Ecosystem	Water management area	A3	Surface Water	Runoff water quality from mine site is similar to, or better than the pre-disturbance runoff water quality.
	Native Ecosystem	Water management area	A3	Water Approvals	Structures that take or divert water such as final voids, dams, levees etc. are appropriately licensed (e.g. under the Water Management Act 2000) and where required ensure sufficient licence shares are held in the water source(s) to account for water take.
	Native Ecosystem	Water management area	A3	Groundwater Quality	Groundwater quality is similar to, or better than the pre-disturbance groundwater quality.
	Native Ecosystem	Water management area	A3	Groundwater Regime	Impacts to groundwater regime are within range as predicted in pre-mining environmental assessment.
EIS - 2001 - The area will be rehabilitated to its current condition. It is currently highly saline land with a dominatn vegetative cover of halophytes.	Native Ecosystem	Water management area	A3	Fauna	The area will be rehabilitated to its current condition. It is currently highly saline land with a dominatn vegetative cover of halophytes.

The rehabilitation completion criteria requires ‘sign off’ from a suitably trained person in the monitoring report within 12 months of rehabilitation and site rehabilitation report. This includes rehabilitation success measured through annual photo-point monitoring and documenting estimates of type and cover of species, contours and soil stability.

4.2 Rehabilitation objectives and rehabilitation completion criteria – stakeholder consultation

As this type of mining activity has been in existence for decades, relevant stakeholders have been consulted and/or have provided permission to conduct mining and discussion around the previous rehabilitation plan. Such agencies and nearby landholders consulted with include:

- Wentworth Shire Council - in relation to the granting of consent for the activity and access issues to the site, including a site visit
- Department of Environment and Heritage- in relation to EPA licence requirements and impact on threatened species, including a site visit
- NSW Planning and Environment – Resources and Energy - in relation to the requirements of a lease, MOP, including a site visit
- NSW Department of Industry - Lands and Forestry - in relation to tenure and use of land on completion of the lease, including a site visit
- WaterNSW/DPI-Water – location and access to piezometers (groundwater monitoring wells) on the land.
- Local Aboriginal community - (Barkindji Elders Council), in relation to the Aboriginal cultural heritage assessment and mitigation activities, involved in cultural heritage assessment and presentation and elders meeting
- Arumpo Bentonite – neighbouring property in relation to the proposed mining activities
- Morello Earthmoving – neighbouring property in relation to mining activities
- Tapio Station - neighbouring property in relation to proposed mining activities

5. Final landform and rehabilitation plan

5.1 Final landform and rehabilitation plan – electronic copy



6. Part 6 – Rehabilitation implementation

6.1 Life of mine rehabilitation schedule

Rehabilitation Activity		Timing	Assumptions and Principle (Milestones)
Active mining	No new active mining planned	Up to 2051 (estimated)	
Removal of product stockpiles	Any remaining material stockpiles will be removed offsite. If stockpile material remains it will be utilised in battering slopes to achieve the final landform.	Up to 2051	Raw material exhausted from extraction area. Mining has ceased.
Removal of Infrastructure	Removal of roads not required in the final landform for rehabilitation and maintenance.	Up to 2051	Mining has ceased. Infrastructure is no longer required for rehabilitation purposes.
Batter in-Pit Slopes	An overburden material will be utilised to assist in battering in pit slopes. Slopes will be lightly ripped where possible to key in topsoil material.	Up to 2051	Mining has ceased in target areas.
Topsoil Emplacement	Topsoil material stored in bunds. Final slopes will be lightly ripped where possible to key in topsoil material. Topsoil bunds will be removed and reused on final surfaces.	Up to 2051	Applicable when final slopes have been achieved. Final slopes have been ripped. Topsoil is suitable for target species.

Establishment of Vegetation	<p>Seeding/planting of natural species is undertaken on finished surfaces</p> <p>Watering/Irrigation as required to assist establishment of vegetation.</p>	2022 to 2031	<p>Applicable where final slopes have been achieved.</p> <p>Suitable topsoil has been spread on final surfaces available to date.</p> <p>Watering/irrigation to occur after if trailing is successful and is required.</p>
Monitoring and Maintenance of Rehabilitation	<p>Monitor progress of rehabilitation areas.</p> <p>Continue weed management and pest management.</p> <p>Repair failed rehabilitation areas.</p>	2022 to 2031	Completion of vegetation establishment.

6.2 Phases of rehabilitation and general methodologies

6.2.1 Active mining phase

A. Soils and material

Saline water from the eastern edge of the lake will be moved to the western edge of the project site through a channel approximately 350 metres long. It will then be lifted by a pump into the first crystalliser bay (Figure 3). The proposed construction of the channel is to be a wide low cut, approximately 15-20 metres wide, to ensure adequate flow from the Basin proper to the crystallisation facility. A pipeline will not function efficiently with the hypersaline water, as salt crystals will precipitate and grow on the inside of the pipeline, regularly blocking the pipes.

The water pumped into the basin contains approximately the same amount of sodium chloride as seawater, however inland waters generally have a higher content of other salts i.e. Magnesium Chloride and Magnesium Sulphate. The salts in the northern part of Mourquong Basin are more concentrated due to the evaporation process that the water has undergone from its inlet location at the far southern tip of the lake surface.

To crystallise salt, the saline water is evaporated to a specific gravity of 1.2. The brine is then pumped into a crystallisation pond where sodium chloride is precipitated in crystal form. The remaining brine (bittern) is then transferred into another evaporation dam to be prepared for the extraction of magnesium sulphate. The remaining bittern is further evaporated to achieve the correct specific gravity for a magnesium chloride product.

The Project Site is approximately 400 metres by 1300 metres in its dimensions, and within this area of approximately 53 hectares, it is proposed to construct the crystallisers, bitterns ponds and stockpile and processing areas as shown in Figure 3.

Initially to provide an aquitard base for the bays and bund walls, a mix of magnesium chloride and magnesium oxide will be applied to the flattened bay base and walls. This mix, known as 'sorel cement' is impermeable and is similar to laying down sheets of poly-ethylene plastic. The sorel cement will act as an initial impermeable base, as the first salt layer to precipitate from the water make the bed almost impervious. Percolation through the crystalliser beds is assumed to be zero, after the initial salt layer has formed (Joshi & Blatt, 1983). No salt crystal will be harvested until a solid salt base of approximately 15cm has been built up. This provides a firm, impermeable base onto which build the harvestable salt crystal, and to support the harvesting machinery. It will take approximately 12 months from initial pumping to establish the initial 15cm base of salt which will become the working base. Only salt crystal built up on the initial 15cm base will be harvested, with the initial base remaining as an impermeable layer.

The crystalliser bays will be interconnected by a series of small runners which will fill under gravity, while a number of pumps will be used to move bitterns. Bitterns (brine) ponds will be constructed at strategic locations around the facility, and these will be lined with an impervious plastic (heavy duty poly-ethylene) sheeting to hold and store liquids for further treatment and preparation in readiness for sale.

B. Flora

The vegetation of the Project Site is generally a low chenopod shrubland, dominated by samphires or glassworts. These are halophytic (salt tolerant) sub-shrubs.

There are no trees or tall shrubs present within the area proposed for the construction of the crystalliser bays. The most common species by far is Grey Glasswort (*Halosarcia halocnemoides*), with the dominating the vegetation composition. Other common species present over the majority of the Project Site include other halophytes such as Slender Glasswort (*Sclerostegia tunuis*), and Pig Face (*Carpobrotus sp.*). Less common species present in the flatter area of the Project Site include Cottonbush (*Maireana appressa*), Turnip (*Brassica tournefortii*), Sea-heath (*Frankenia foliosa*), with occasional Dillon Bush (*Nitraria billardieri*), Black Bush (*Maireana pyramidata*) and Ruby Saltbush (*Enchylaena tomentosa*) occurring along the eastern margin.

C. Fauna

The fauna species observed at the Project Site are listed below (Table 3.5). There is a large amount of rabbit and fox sign (scratchings, prints and scats) over the entire Project Site, and evidence of sheep and cattle especially in the eastern portion of the Project Site adjacent to more suitable grazing land. The main bird activity is also concentrated around the eastern edge of the Project Site, where the small mallee knolls and Dillon Bush are located.

No fauna species as listed in the schedules of the Threatened Species Conservation Act (1995) were observed on or near the Project Site, and it is unlikely that the vegetation at the Project Site constitutes suitable or critical habitat for any of the listed species.

D. Rock/overburden emplacement

The process produces no rock or overburden. Multiple crushing phases ensure all mined material is utilised.

E. Waste management

A commercial bin is located onsite at the infrastructure area. There will be no waste disposed of on site. The bin is removed regularly and emptied offsite.

Waste stream	Type	Risk	Compliance with
Discharge to air	Equipment emissions	Low	Manufacturing specifications EPA licence requirements
	Dust from processing	Low	EPA licence requirements
Discharge to surface water	N/A	N/A	N/A
Discharge to groundwater	N/A	N/A	N/A
Discharge to land	Waste rock/overburden	N/A - reused	Best practice management
	Oil leak	Low	EPA licence requirements
	Grease	Low	EPA licence requirements
	Vegetation clearance	N/A - reused	EPA licence requirements

F. Geology and geochemistry

This surface mine is very basic and low risk to geology and geochemistry. The thin layer of topsoil and overburden is stripped and stockpiled for respreading during rehabilitation. No wastes or ore is produced.

G. Material prone to spontaneous combustion

There is no material that is prone to spontaneous combustion onsite. Topsoil and salt do not ignite, eliminating the chance for spontaneous combustion.

H. Material prone to generate acid mine drainage

Acid mine drainage or venting does not apply to this site. No decomposition of wastes occurs at the site, which leads to the production of methane.

I. Ore beneficiation waste management

Not applicable on this site.

J. Erosion and sediment control

The location and generally flat nature of the Mine Site means that removal of vegetation cover will not make the affected area susceptible to erosion by rainfall runoff.

The area of the access track into the Mine Area will be susceptible to dust being raised from traffic associated with the proposal. It is proposed that when the access track is upgraded, that a solution of magnesium chloride be sprayed over the compacted track. Magnesium chloride is hygroscopic (has a high attraction to moisture) and effectively seals dirt roads without the use of concrete or bitumen.

The vegetation present over the majority of the Project Site (sapphire and other salt tolerant species) will be removed to provide a smooth flat base for the crystalliser bays. The vegetation present on the knolls will not be removed as there is no requirement for the knolls to be modified. The crystalliser bays will be sized and located so that they fit around the treed knolls with minimal earthmoving.

As the Mine Site is generally flat and part of a much larger flat area of topography, the Mine Site does not directly receive runoff from the surrounding land.

K. Ongoing management of biological resources for use in rehabilitation

Revegetation of disturbed areas will occur using the topsoil that has been stored and will potentially contain indigenous seed. This method will reduce soil erosion from the site by decreasing the amount of time needed for the site to revegetate.

L. Mine subsidence

The mine is not in a mine subsidence district and due to the shallow depth of drying beds does not apply to this proposal.

M. Management of potential cultural and heritage issues

No Aboriginal archaeological sites were identified during the cultural heritage assessment in 2008. It was noted that the area assessed is unlikely to have any Aboriginal archaeological sites due to its location so far from the river and the landscape not being useful for Aboriginal occupation. Due to no Aboriginal archaeological sites being identified on the surface, it is also unlikely that no sub surface sites exist either.

N. Exploration activities

No exploration needed within the mining lease.

6.2.2 Decommissioning

The lease will be relinquished on exhaustion of resource, decommissioning of infrastructure and mining areas are rehabilitated to a stable to ensure erosion does not occur. There are permanent buildings and concrete structures onsite, which will be fully removed (including slabs).

A. Site security

The entire Crown Lands lot is enclosed within a fence line with all gates locked.

B. Infrastructure to be removed or demolished.

All equipment onsite is mobile and easily transported. No buildings are present.

C. Buildings, structures and fixed plant to be retired

Not applicable

D. Management of carbonaceous/contaminated material

Not applicable

E. Hazardous material management

Not applicable

F. Underground Infrastructure

Not applicable

6.2.3 Landform establishment

No modelling has been undertaken to achieve final landform. The rehabilitation process is quite simple with the land being levelled off.

A. Water management infrastructure

All crystalliser bays and channels will be filled in.

B. Final landform construction: general requirements

The decommissioning of the crystalliser bays will be accomplished by the placing of soil material that was used to construct the walls into floor of the crystalliser. This will be conducted after all physically available salt crystal has been harvested and the remaining salt crystal dissolved off and returned to Mourquong Basin.

The sorel cement base that was originally put down to provide the primary aquitard layer will be crushed and cracked into fine rubble and incorporated into the soil using rippers, plough and a rotary hoe. The new soil surface will then be cross ripped which will facilitate the natural revegetation of and improve water infiltration at the site. Experience of the proponent at an existing site Hattah gypsum mine operation has shown that in a similar vegetation type, the disturbed areas will be revegetated to halophytic vegetation from the surrounding highly saline land. The ground is initially colonised by Pigface, followed by the samphire/glasswort species.

C. Final landform construction: reject emplacement areas and tailings dams

Not Applicable

D. Final landform construction: final voids, highwalls and low walls

Not Applicable

E. Construction of creek/river diversion works

Not Applicable

6.2.4 Growth medium development

The site lies within the Murray Basin geological province. The area of assessment is characterized by gently undulating dunes of Aeolian origin incised by shallow drainage lines.

The majority of the proposed lease area has been disturbed from past grazing by livestock, rabbits, and mining activity. Topsoil depth is variable across the site.

This will be predominantly facilitated by the decommissioning of the crystalliser walls, and by placing the soil material that was used to construct the walls into the floor crystalliser. This will be conducted after all physically available flat crystal has been harvested and the remaining salt crystal dissolved off and returned to Mourquong Basin.

The sored cement base that was originally put down to provide the primary aquitard layer will be crushed and cracked into fine rubble and incorporated into the soil using rippers, plough and a rotary hoe. The new soil surface will then be cross ripped which will facilitate the natural revegetation of and improve water infiltration at the site. Experience of the proponent at an existing site Hattah gypsum mine operation has shown that in a similar vegetation type, the disturbed areas will be revegetated to halophytic vegetation from the surrounding highly saline land. The ground is initially colonised by Pigface, followed by the samphire/glasswort species.

6.2.5 Ecosystem and land use establishment

After the initial rehabilitation, the land is left for windblown seeds and the seedbank in the topsoil to germinate. The low viability of the soil means the a revegetation will be slow. Sunsalt will respread topsoil prior to autumn/winter to give the seeds a great chance of germination in winter rains.

6.2.6 Rehabilitation of areas affected by subsidence.

Not applicable

7. Part 7 – Rehabilitation quality assurance process

This is all conjunction, as no rehabilitation will be required onsite until 2050.

Rehabilitation success will be measured by drone flyovers and photogrammetry processing. This will give a high resolution, 2D plan of the rehabilitation area. Using this data will give highly accurate ground cover results. More rigorous monitoring is unnecessary due to the slow growth rates of vegetation at this location because of soil type and low rainfall. Due to the limited capability of the land, minimal options exist for land use and closure concepts at cessation of the proposed land use. As stated in the EIS, it is envisaged that the site will be returned to at least a pre-lease condition with the Sunsalt aiming for a vegetation response similar to that of the original vegetation community (Bladder Saltbush and Old Man Saltbush). A similar vegetation composition and dune gradients will be achieved to mirror the surrounding environment.

Key Actions – Baseline monitoring	Responsibilities	Records	Review
<p>Establish existing environmental baselines, which are to be used as the basis for rehabilitation completion criteria. A risk assessment process was undertaken to determine what baseline data is needed. This should also include consideration of development consent requirements and other relevant documentation including the EIS and Rehab Management plan.</p>	Mine Manager	Risk Assessment	Annual Rehabilitation Report

Key Actions - Before ground disturbance works	Responsibilities	Records	Review
<p>Mine Planning Systems Ensure mine planning systems provide sufficient time for the implementation of preclearance procedures to facilitate biological and habitat resources being appropriately identified and salvaged to minimise environmental impacts and maximise the viability for use in rehabilitation.</p> <p>Fauna Studies Define key plant species and targeted vegetation communities (e.g. plant community types) that would comprise the framework of the rehabilitation program. Plan seed harvesting and collection of plant material in advance of clearing and in consultation with suitably qualified practitioners (e.g. a 3-year lead time with a rolling collection program). Identify sufficient pre-disturbance and surrounding areas that can be used as seed or propagation resources Develop a seed collection program to maximise the amount of viable seed of local provenance for use in rehabilitation and revegetation activities. The program should include:</p> <ul style="list-style-type: none"> • a seed calendar that contains information relating to fruiting and seed collection times for key native species • data on seed collection including species, collection location and date of collection • seed assessment of native vegetation within the proposed disturbance areas to allow for seed collection prior to or immediately following clearing • required volumes of seed to be collected to enable adequate supply of native seed for reuse • appropriate treatment and storage to maintain viability • suitably qualified and experienced selectors • using record sheets and a geographic information system (GIS) database to track collection, storage and use of the seed resource. 	Mine Manager	<p>Weather data.</p> <p>Watercart usage/pumping volumes.</p> <p>Photography and site inspections reports.</p>	<p>Annual Rehabilitation Report</p> <p>Section 8.3</p> <p>See Section 11</p>

Key Actions	Responsibilities	Records	Review
Active Mining (Land Clearing)			
<p><i>Topsoil Stockpile Management</i></p> <ul style="list-style-type: none"> • Slopes no greater than 3H:1V. • Topsoil stockpile height no greater than 2 metres. • Record volumes and locations of topsoil stockpiles. • Volume of material, topsoil and subsoil required for application to current and future disturbance areas • Estimate of the volume of suitable alternative material required to be imported onto site to supplement potential material, topsoil and subsoil deficits. • Only experienced operators will be engaged to conduct rehabilitation activities. <ul style="list-style-type: none"> • Areas to be land cleared will be clearly marked to ensure only land to be cleared is disturbed. • Topsoil material to be stripped will be used immediately or stored in stockpiles no greater than 2 metres in height and be revegetated with temporary grass species or otherwise stabilised as described in the erosion risk controls above. <ul style="list-style-type: none"> • Land clearing will not be undertaken during periods of prolonged rainfall where damage to soil structure and erosion impacts are greatest. • Land clearing will not be undertaken during periods of prolonged drought if there is high wind to prevent excess wind erosion. 	<p>Mine Manager Surveyor</p>	<p>Survey data of topsoil stockpiles. GIS data and plans. Soil inventory. Photography and site inspections reports.</p>	<p>Annual Rehabilitation Report Section 8.3 See Section 11</p>
<p><i>Overburden Stockpile Management</i></p> <ul style="list-style-type: none"> • Slopes no greater than 3H:1V. • Stockpile height no greater than 3 metres. • No stockpiles to be constructed in areas of concentrated flows. • Record volumes and locations of overburden stockpiles. • Volume of material, overburden required for application to current and future disturbance areas • Chronology of treatments (e.g. weed control, application of cover crop) undertaken on the stockpile. • Achieve groundcover factor of at least 0.05 (70% coverage) on stockpiles with long term inactivity. • Estimate of the volume of suitable alternative material required to be imported onto site to supplement potential material deficits. 	<p>Mine Manager Surveyor</p>	<p>Survey data of overburden stockpiles. GIS data and plans. Soil inventory. Reports from weed contractors. Photography and site inspections reports.</p>	<p>Annual Rehabilitation Report Section 8.3 See Section 11</p>
<p><i>Flora and Fauna</i></p> <ul style="list-style-type: none"> • Define key plant species and targeted vegetation communities (e.g. plant community types) that would comprise the framework of the rehabilitation program. • Plan seed harvesting and collection of plant material in advance of clearing and in consultation with suitably qualified practitioners (e.g. a 3-year lead time with a rolling collection program). • Identify sufficient pre-disturbance and surrounding areas that can be used as seed or propagation resources • Develop a seed collection program to maximise the amount of viable seed of local provenance for use in rehabilitation and revegetation activities. The program should include: <ul style="list-style-type: none"> • a seed calendar that contains information relating to fruiting and seed collection times for key native species • data on seed collection including species, collection location and date of collection • seed assessment of native vegetation within the proposed disturbance areas to allow for seed collection prior to or immediately following clearing 	<p>Mine Manager</p>	<p>Photography and site inspections reports.</p>	<p>Annual Rehabilitation Report Section 8.3 See Section 11</p>

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| <ul style="list-style-type: none">• required volumes of seed to be collected to enable adequate supply of native seed for reuse• appropriate treatment and storage to maintain viability• suitably qualified and experienced selectors• using record sheets and a geographic information system (GIS) database to track collection, storage and use of the seed resource. | | | |
|--|--|--|--|

Key Actions	Responsibilities	Records	Review
<p>Erosion</p> <ul style="list-style-type: none"> Slopes to be reduced to a maximum of 3H:1V in pit areas. Slopes of 3H:1V shall not be greater than 50 metres or they will be broken by catch drains to convey the surface water to the sediment dam to reduce erosion effects. Slopes of major tracks are to be <10 degrees or have cross drains/banks installed. Where unsuitable soils are present, tracks are to be stabilised with crushed bricks, concrete, gravel or similar. Track walk or lightly rip exposed surfaces to encourage infiltration of rainwater. <ul style="list-style-type: none"> Land clearing will not be undertaken during periods of prolonged rainfall where damage to soil structure and erosion impacts are greatest. Land clearing will not be undertaken during periods of prolonged drought if there is high wind to prevent excess wind erosion. 	Mine Manager	<p>Survey data. GIS data and plans. Photography and site inspections reports.</p>	<p>Annual Rehabilitation Report Section 8.3 See Section 11</p>
<p>Wind Erosion</p> <ul style="list-style-type: none"> Water cart to be engaged during mining, hauling and rehabilitation activities. <p>During adverse conditions:</p> <ul style="list-style-type: none"> Cease mining or hauling activities in adverse wind conditions: and Increase water cart frequency. 	Mine Manager	<p>Weather data. Water cart usage/pumping volumes. Photography and site inspections reports.</p>	<p>Annual Rehabilitation Report Section 8.3 See Section 11</p>

Key Actions	Responsibilities	Records	Review
<p>Active Mining (Production)</p> <p>Topsoil Stockpile Management</p> <ul style="list-style-type: none"> Slopes no greater than 3H:1V. Topsoil stockpile height no greater than 2 metres. Volume of material, topsoil and subsoil required for application to current and future disturbance areas Only experienced operators will be engaged to conduct rehabilitation activities. <ul style="list-style-type: none"> Areas to be land cleared will be clearly marked to ensure only land to be cleared is disturbed. Topsoil material to be stripped will be used immediately or stored in stockpiles no greater than 2 metres in height and be revegetated with temporary grass species or otherwise stabilised as described in the erosion risk controls above. <ul style="list-style-type: none"> Land clearing will not be undertaken during periods of prolonged rainfall where damage to soil structure and erosion impacts are greatest. Land clearing will not be undertaken during periods of prolonged drought if there is high wind to prevent excess wind erosion. Undertake topsoil and subsoil stripping when soils are moist (e.g. not saturated nor dry). <ul style="list-style-type: none"> Sunsalt will develop and maintain a materials and soils balance and database to include the following information: <ul style="list-style-type: none"> location, age and quality of stockpiles chronology of treatments (e.g. weed control, application of cover crop) undertaken on the stockpile volume of material, topsoil and subsoil required for application to current and future disturbance areas (e.g. capping material for tailings dams, reject emplacement areas) an estimate of the volume of suitable alternative material required to be imported onto site to supplement potential material, topsoil and subsoil deficits. record data on the location of the stockpiled material including date stripped, source area, indicative volume, pre-strip plant community type. 	<p>Mine Manager Surveyor</p>	<p>Survey data of topsoil stockpiles. GIS data and plans. Soil inventory. Reports from weed contractors. Photography and site inspections reports.</p>	<p>Annual Rehabilitation Report Section 8.3 See Section 11</p>

<ul style="list-style-type: none"> Information is to be stored using site-based GIS. 			
Waste <ul style="list-style-type: none"> Wastes will be stored in bins with a lid. Wastes will be removed by licenced contractor. 	Mine Manager	Photography and site inspections reports.	Annual Rehabilitation Report Section 8.3 See Section 11

Key Actions	Responsibilities	Records	Review
Wind Erosion <ul style="list-style-type: none"> Water cart to be engaged during mining, hauling and rehabilitation activities. During adverse conditions: <ul style="list-style-type: none"> Cease mining or hauling activities in adverse wind conditions: and Increase water cart frequency 	Mine Manager	Weather data. Water cart usage/pumping volumes. Photography and site inspections reports.	Annual Rehabilitation Report Section 8.3 See Section 11

Key Actions	Responsibilities	Records	Review
Decommissioning			
Infrastructure (Removed) <ul style="list-style-type: none"> Removal of all plant, equipment and associated infrastructure including processing facilities, stockpile areas, and loading facilities, portable offices (if installed). At the completion of exploration activity: Remove and lawfully dispose of all grid pegs, tags, sample bags, flagging tape, drill chips and other waste. 	Mine Manager	Photography and site inspections reports.	Annual Rehabilitation Report Decommissioning Report See Section 11 Section 8.3
Stockpile Areas <ul style="list-style-type: none"> All stockpiles are removed and or incorporated into the final landform. 	Mine Manager	Survey data. Photography and site inspections reports.	Annual Rehabilitation Report Decommissioning Report See Section 11 Section 8.3
Waste <ul style="list-style-type: none"> All rubbish/ waste materials removed from site. 	Mine Manager	Photography and site inspections reports.	Annual Rehabilitation Report Decommissioning Report See Section 11 Section 8.3

Key Actions	Responsibilities	Records	Review
Landform Establishment			
<ul style="list-style-type: none"> Slopes outside the final void are no greater than 3 horizontal to 1 vertical and slope lengths shall not exceed 50 metres before being broken by earth banks or similar. Final landform conforms to the approved final landform. 	<p>Mine Manager Surveyor</p>		<p>Annual Rehabilitation Report Decommissioning Report See Section 11 Section 8.3</p>
Growth Medium Development			
<ul style="list-style-type: none"> Where permissible, should revegetation be delayed due to unsuitable seasonal conditions, undertake temporary stabilisation measures (e.g. sterile cover crops, erosion and sediment controls) to avoid erosion and further land degradation. Use appropriate earthmoving equipment to avoid compacting the rehabilitation substrate. Restore soil structure by scarifying or ripping (if soil compaction or erosion has occurred) in parallel with the contour. Apply soil ameliorants (where required) such as fertiliser to the substrate before the start of revegetation activities. Where access tracks are to be removed (e.g. not to be left as part of the final land use as defined by rehabilitation objectives and rehabilitation completion criteria), remove imported fill material (where used) and reprofile the disturbance area to the pre-existing landform. Topsoil shortages are to be supplemented with suitable alternatives such as biosolids, organic growth medium or another substitute, if required. However, the risk of introducing hazards to the establishment of the preferred plant community type (e.g. nonnative species, elevated nutrient levels through the application of soil ameliorants) should be evaluated. Use structures such as tree hollows, logs and other woody debris, rock material to augment the target habitat value of native rehabilitation (if appropriate, in consideration of bushfire risks). 	<p>Mine Manager</p>	<p>Photography and site inspections reports. Topsoil and overburden material inventory Soil testing results</p>	<p>Annual Rehabilitation Report Decommissioning Report See Section 11 Section 8.3</p>
Ecosystem and Landuse Establishment			
<ul style="list-style-type: none"> Where adverse seasonal conditions (e.g. drought) or other factors affect the availability of local provenance seed and supplementary non-local provenance seed is required, seed stock should be purchased from reputable suppliers with quality control processes including seed viability testing. (It is good practice to record the name of the supplier and batch of seed being applied. Recording such details may assist in prevention/management of misidentified seeds). If revegetation is delayed due to unsuitable seasonal conditions, undertake temporary stabilisation measures (e.g. sterile cover crops, erosion and sediment controls) to avoid erosion and further land degradation. Spread seed as soon as possible following ripping/scarifying. If seeding is delayed following ripping/scarifying, undertake an assessment to determine whether further ripping/tilling is required before applying seed to ensure sufficient surface roughness (e.g. to break up any crusting that may have resulted from rainfall events). 	<p>Mine Manager</p>	<p>Photography and site inspections reports. Water testing results Seed viability certificates Water cart volumes and frequency Weather data</p>	<p>Annual Rehabilitation Report Decommissioning Report See Section 11 Section 8.3</p>

<ul style="list-style-type: none"> • Develop a bushfire management plan (having regard to relevant ecological considerations and species fire tolerance) in consultation with NSW Rural Fire Service. Bushfire considerations should be factored into rehabilitation design (e.g. access tracks). • Use appropriate earthmoving equipment to avoid compacting the rehabilitation substrate. <p>Rehabilitation establishment inspections</p> <ul style="list-style-type: none"> • Conduct an initial establishment inspection no later than three months following the completion of each rehabilitation campaign to determine whether performance issues have occurred or are emerging, which have the potential to delay revegetation establishment. • Conduct regular site inspections (e.g. at least quarterly) to assess soil conditions and erosion, drainage and sediment control structures, runoff water quality, revegetation germination rates, plant health and weed infestation, until vegetation has become well established and the site can be considered stable. • Use drones or LiDAR to conduct additional inspections and analysis of developing rehabilitation. • Record outcomes of inspections and implement any required intervention/adaptive management actions as soon as practicable after a monitoring program indicates that rehabilitation performance is unsatisfactory as part of the rehabilitation management and maintenance program. <p>Rehabilitation monitoring program</p> <ul style="list-style-type: none"> • Implement long-term rehabilitation monitoring program and evaluate trajectory of rehabilitation against achieving rehabilitation objectives and rehabilitation completion criteria. • Broadly, the scope of the ecosystem rehabilitation monitoring program will be required to include indicators that measure site condition, vegetation composition and vegetation structure and ecosystem function. The range of indices should directly relate to the rehabilitation objectives and rehabilitation completion criteria identified for the specific ecological outcome. While the program should be designed to be comparable between monitoring periods, the program will also need to be flexible to enable incorporating evolving best practice in monitoring techniques. • The scope of the monitoring program will usually include photographic monitoring from fixed points. • Develop and implement a rehabilitation management and maintenance program based on the needs identified in the rehabilitation monitoring program. Included are as follows: <ul style="list-style-type: none"> • weed and feral animal control • erosion and drainage control works • monitoring and control of changes to surface and groundwater quality over time • reseeded/planting of failed rehabilitation areas (e.g. through lack of germination, high plant mortality rate) • repairing fence lines, access tracks and other general related land management activities • regular site inspections to assess rehabilitation performance. • The objective of this program is to facilitate rehabilitation progressing towards achieving the rehabilitation objectives and rehabilitation completion criteria in accordance with an approved progressive rehabilitation schedule (forward program). 			
Ecosystem and Landuse Development			
<ul style="list-style-type: none"> • Feral animal controls will be implemented if required. • Minimal erosion or land instability evident that would not require moderate to significant ongoing management and maintenance works. 	Mine Manager	Photography and site inspections reports.	Annual Rehabilitation Report Decommissioning Report See Section 11 Section 8.3

8. Part 8 – Rehabilitation monitoring program

8.1 Analogue site baseline monitoring

The baseline monitoring took place in the EIS 2001.

8.2 Rehabilitation establishment monitoring

The following inspection regime will be implemented at the commencement of the ecosystem establishment phase. The purpose of which is to enable early identification of issues that have the potential to delay vegetation establishment. To identify if triggers have been met in accordance with the Trigger Action Response Plan and to provide data for the continuous improvement of rehabilitation methods.

- Photographs of rehabilitated areas from designated photo points
- Aerial quarterly survey/photos of rehabilitated areas
- Photo analysis and quarterly inspections for landform stability, erosion, and vegetation growth.
- Maintain weed and feral animal control

8.3 Measuring performance against rehabilitation objectives and rehabilitation completion criteria

9. Part 9 – Rehabilitation research, modelling and trials

9.1 Current rehabilitation research, modelling and trials

No trials are ongoing.

9.2 Future rehabilitation research, modelling and trials

No trials are ongoing.

10. Part 10 – Intervention and adaptive management

An early draft of the TARP has been included without the scientific and/or quantifiable evidence that each planned response action is suitable.

TRIGGER	ACTION	RESPONSE
Insufficient materials and resources to achieve satisfactory final landform.	<p>Review the final landform requirements / associated material requirements</p> <p>Assess these requirements against available resources.</p>	<p>Design final landforms in accordance with available resources.</p> <p>Assess availability of alternative sources of materials and their costs (if required)</p> <p>Source additional material where required.</p>
Insufficient topsoil and growth medium material available to achieve satisfactory revegetation	Assess topsoil resources and requirements.	<p>Assess availability of alternative sources of topsoil/growth medium material, and their costs.</p> <p>Source additional material where required.</p>
Landform unstable and unable to achieve revegetation.	Undertake investigations to identify the extent, source, and cause of the trigger.	<p>Based on the investigation, implement management measures such as:</p> <p>Use of available materials such as rock or stockpiled topsoil to stabilise areas identified</p> <p>Revegetate bare ground</p> <p>Assess water management and drainage structures</p> <p>Where required a specialist engineer may be required to assess the structural integrity and design appropriate remedial measures.</p>
Excessive erosion and / or sedimentation resulting in land instability and /or	Undertake investigations to identify the extent, source, and cause of the trigger.	<p>Erosion and sediment control measures may be implemented including:</p> <p>Erosion channels or bare areas will be managed and eliminated where possible</p>

<p>vegetation growth issues.</p>		<p>Rip areas will be managed to prevent instability and erosion where possible and provide similar pre mining flows</p> <p>Re-designing and construction of appropriate drainage lines</p> <p>Installation of sediment traps and fences downslope of erosion areas</p> <p>Use of available materials such as rock or stockpiled topsoil to stabilise areas identified</p> <p>Supplementary revegetation of any bare areas.</p>
<p>Poor vegetation establishment and growth.</p> <p>Poor vegetation establishment and growth.</p>	<p>Review rehabilitation records</p> <p>including methods, weather records, species used and photographs to determine the cause of poor rehabilitation establishment.</p> <p>Identify appropriate remediation measures.</p> <p>Ongoing monitoring to confirm supplementary measures have been successful.</p>	<p>The appropriate supplementary response will reflect the cause of limited vegetation response or growth. This may include:</p> <p>Testing of soil for contaminants, pH, or deficiencies</p> <p>Supplementary seeding of vegetated areas or topsoil</p> <p>Investigation into the possibility of utilising irrigation as part of the water management system to promote germination and establishment of vegetation, and</p> <p>Supplementary vegetation will be designed based on analogue sites and overall ecosystem structure to include the desired vegetation structure and species.</p>
<p>Weed and / or feral animal infestation</p>	<p>Rehabilitated areas will be assessed for key weed and feral animal species.</p> <p>Where a weed or feral animal species is observed an investigation will be undertaken to determine the extent of the invasion, possible sources, and the appropriate response</p>	<p>Appropriate management techniques specific to each species will be implemented to limit the invasion and colonisation of foreign weed and feral animal species such as:</p> <p>Significant weed infestations or noxious weeds will be removed in accordance with relevant guidelines</p> <p>Implementation of wash down and inspection procedures if required</p>

		Vertebrate pests will be managed to be absent or kept under control and monitored on an annual basis.
Drought	<ul style="list-style-type: none"> • Replace topsoil at end of summer. • Replace stumps to reduce wind erosion 	Water rehabilitation areas to facilitate vegetation
Bush fire	<p>Fire break in place</p> <p>Fire extinguishers and water truck onsite</p>	<p>Control fire if possible</p> <p>Contact Emergency Services.</p>

11. Part 11 – Review, revision and implementation

Current triggers now included:

Triggers	Process	Timing	Responsibility	Implementation/ Records
<p>Mining Regulation- Clause 11 of Schedule 8A</p> <p>The holder of a mining lease must amend the rehabilitation management plan for the mining lease as follows —</p>				
<p>(a) to substitute the proposed version of a rehabilitation outcome document with the version approved by the Secretary — within 30 days after the document is approved,</p>	<p>The approved rehabilitation outcome document i.e. Rehabilitation Objective Statement, Rehabilitation Completion Criteria Statement or the Final Landform and Rehabilitation Plan (spatial data) will replace any proposed (and unapproved) documents.</p> <p>The Rehabilitation Management Plan (RMP) will be reviewed and amended to ensure it is consistent with the approved rehabilitation outcome document.</p>	<p>Within 30 days after the document is approved.</p>	<p>Mine Manager/ Environmental Manager</p>	<p>The amended RMP will be include a record of document versions, dates amended and a brief summary of the amendments.</p>
<p>(b) as a consequence of an amendment made under clause 14 to a rehabilitation outcome document — within 30 days after the amendment is made,</p>	<p>The RMP will be reviewed and amended within 30 days if a rehabilitation outcome document is amended to ensure it is consistent with the approved rehabilitation outcome document.</p>	<p>Within 30 days after the amendment is made.</p>	<p>Mine Manager/ Environmental Manager</p>	<p>The amended RMP will be include a record of document versions, dates amended and a brief summary of the amendments.</p>

<p>(c) to reflect any changes to the risk control measures in the prepared plan that are identified in a rehabilitation risk assessment— as soon as practicable after the rehabilitation risk assessment is conducted,</p>	<p>The RMP will be reviewed and amended as soon as practicable if a rehabilitation risk assessment determines that risk control measures must be changed.</p>	<p>As soon as practicable</p>	<p>Mine Manager/ Environmental Manager</p>	<p>The amended RMP will be include a record of document versions, dates amended and a brief summary of the amendments.</p>
<p>(d) whenever given a written direction to do so by the Secretary—in accordance with the direction.</p>	<p>The RMP will be reviewed and amended as soon as practicable if directed by the Secretary.</p>	<p>As soon as practicable</p>	<p>Mine Manager/ Environmental Manager</p>	<p>The amended RMP will be include a record of document versions, dates amended and a brief summary of the amendments.</p>
<p>Mining Regulation- Clause 13 of Schedule 8A - Forward Program and Annual Reporting</p>	<p>The RMP will be reviewed and amended as soon as practicable if the Annual Review identifies changes to the processes, risks, mining progress etc that are inconsistent with the current RMP.</p>	<p>As soon as practicable</p>	<p>Mine Manager/ Environmental Manager</p>	<p>The amended RMP will be include a record of document versions, dates amended and a brief summary of the amendments.</p>
<p>Modification to Development Consent DA No. 08-0326</p>	<p>The RMP will be reviewed and amended as soon as practicable after the approval of any modification to the development consent and be consistent with and requirements under the amended consent.</p>	<p>As soon as practicable</p>	<p>Mine Manager/ Environmental Manager</p>	<p>The amended RMP will be include a record of document versions, dates amended and a brief summary of the amendments.</p>
<p>Amendment to the Rehabilitation Management Plan</p>	<p>The amended RMP will be provided to staff and relevant contractors and acknowledgement of the changes from staff will be recorded.</p>	<p>As soon as practicable after document is amended.</p>	<p>Environmental Manager/ Site staff and contractors.</p>	<p>The amended RMP will be include a record of document versions, dates amended and a brief summary of the amendments.</p>

				Records of staff training and inductions are to be updated to include the amended RMP.
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