

Licence number	L9009/2016/1			
Licence holder	Northern Minerals Limited			
ACN	119 966 353			
Registered business address	Level 1, 675 Murray Street			
	WEST PERTH WA 6005			
DWER file number	DER2016/002134-1			
Demotion	44/07/0040 1- 40/07/0004			
Duration	11/07/2018 to 10/07/2034			
Date of amendment	04/09/2020			
Premises details	Browns Range Rare Earths Project Mining Tenement M80/627			
	STURT CREEK WA 6770 As depicted in Schedule 1			

Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations 1987</i>)	Assessed production capacity	
Category 5: Processing or beneficiation of metallic or non-metallic ore	131,490 tonnes per Annual Period	
Category 89: Putrescible landfill site	499 tonnes per Annual Period	

This licence is granted to the licence holder, subject to the attached conditions, on

4 September 2020, by:

Alana Kidd Manager, Resource Industries

an officer delegated under section 20 of the Environmental Protection Act 1986 (WA)

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Introduction

This Introduction is not part of the Licence conditions.

As of 1 July 2017, the Department of Environment Regulation (DER), the Office of the Environmental Protection Authority (OEPA) and the Department of Water (DoW) amalgamated to form the Department of Water and Environmental Regulation (DWER).

DWER was established under section 35 of the *Public Sector Management Act 1994* and is responsible for the administration of the *Environmental Protection Act 1986* (the Act) along with other legislation.

DWER's industry licensing role

DWER is a government department for the state of Western Australia in the portfolio of the Minister for Environment. DWER's purpose is to advise on and implement strategies for a healthy environment for the benefit of all current and future Western Australians.

DWER has responsibilities under Part V of the Act for the licensing of prescribed premises. Through this process DWER regulates to prevent, control and abate pollution and environmental harm to conserve and protect the environment. DWER also monitors and audits compliance with works approvals and licence conditions, takes enforcement action as appropriate and develops and implements licensing and industry regulation policy.

Licence requirements

This Licence is issued under Part V of the Act. Conditions contained within the Licence relate to the prevention, reduction or control of emissions and discharges to the environment and to the monitoring and reporting of them.

Where other statutory instruments impose obligations on the premises/licence holder the intention is not to replicate them in the licence conditions. You should therefore ensure that you are aware of all your statutory obligations under the Act and any other statutory instrument. Legislation can be accessed through the State Law Publisher website using the following link: http://www.slp.wa.gov.au/legislation/statutes.nsf/default.html

For your Premises relevant statutory instruments include but are not limited to obligations under the following:

- Environmental Protection (Unauthorised Discharges) Regulations 2004 these Regulations make it an offence to discharge certain materials such as contaminated stormwater into the environment other than in the circumstances set out in the Regulations.
- Environmental Protection (Controlled Waste) Regulations 2004 these Regulations place obligations on you if you produce, accept, transport or dispose of controlled waste.

 Environmental Protection (Noise) Regulations 1997 – these Regulations require noise emissions from the Premises to comply with the assigned noise levels set out in the Regulations.

You must comply with your licence. Non-compliance with your licence is an offence and strict penalties exist for those who do not comply.

Licence holders are also reminded of the requirements of section 53 of the Act which places restrictions on making certain changes to prescribed premises unless the changes are in accordance with a works approval, licence, closure notice or environmental protection notice.

Licence fees

If you have a licence that is issued for more than one year, you are required to pay an annual licence fee prior to the anniversary date of issue of your licence. Non-payment of annual licence fees will result in your licence ceasing to have effect, meaning that it will no longer be valid and you will need to apply for a new licence for your Premises.

Ministerial conditions

If your Premises has been assessed under Part IV of the Act you may have had conditions imposed by the Minister for Environment. You are required to comply with any conditions imposed by the Minister.

Premises description and Licence summary

Northern Minerals Limited (the licence holder) operates the Browns Range Rare Earths Project (Premises) located on Mining Tenement M80/627, approximately 160 kilometres (km) south-east of Halls Creek. The Premises is adjacent to the Western Australian/Northern Territory border and targets rare earth dominant xenotime mineralisation.

In 2015, the licence holder decided to adopt a staged approach to the implementation of the project. The first stage was the three year pilot trial involving open cut mining and mineral processing to produce approximately 49,000 kilograms (kg) of dysprosium per year in approximately 590,000 kg of Total Rare Earth Oxide (TREO). The TREO is transported from the Premises in shipping containers using public roads to either Darwin or the Port of Wyndham for export. It is the licence holder's objective to proceed with the full scale mining and processing facility once the pilot trial is complete. The licence holder is required to consult and obtain necessary approvals from DWER prior to full scale mining as this has not been assessed. This Licence relates solely to the operation of the first stage of the project, being the pilot plant trial.

The Delegated Officer has determined that the pilot plant triggers category 5 (processing or beneficiation of metallic or non-metallic ore) under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations). Construction of the pilot plant was approved by the former Department of Environment Regulation on 13 March 2017 under Works Approval W6007/2016/1. The licence holder submitted compliance documentation for construction of the pilot plant on 11 April 2018 and a commissioning report on 11 June 2018.

The Premises was assessed by the Environmental Protection Authority (EPA) under Part IV of the Act. Ministerial approval for the project was issued via Ministerial Statement (MS) 986 on 20 October 2014. A change to MS 986 to revise the development envelope boundaries, update Figures and reference to coordinates was approved under section 45C on 12 April 2017.

The pilot plant is sized to about 10% of the full scale plant capacity assessed by the EPA under Part IV of the Act. The pilot plant stage is scheduled to last at least three years with the treatment of ore occurring for approximately 10 months each year depending on the wet season. Operations may cease or be reduced during the wet season (December to March) due to potential road access restrictions, which may limit the ability to transport in consumables and reagents. If weather conditions permit, operations may continue throughout the summer months. It is possible that the pilot plant will operate for longer than three years if there are extended wet seasons that limit operations; or if it takes longer than expected to ramp the plant up to the production capacity (131,490 tonnes per annum). The production capacity has increased by virtue of the addition of an ore sorting circuit, as described in the following section.

The workforce for the Premises operates on a fly-in/fly-out basis and is housed at the onsite accommodation village.

The Premises disturbance footprint encompasses the following key infrastructure:

- open cut mine;
- mine dewatering infrastructure;
- beneficiation processing plant (crushing, grinding, magnetic separation and flotation);
- hydrometallurgical processing plant (sulphation baking, water leaching, ion exchange, precipitation, drying and bagging);
- tailings storage facility (TSF);
- lined evaporation pond for disposal of raffinate;
- putrescible landfill;
- power generation (gensets); and
- hydrocarbon and chemical storage areas.

Addition of an ore sorting circuit (February 2020)

The licence holder applied to amend the licence to include an ore sorting circuit between the primary crusher and the Semi-Autogenous Grinding Mill (SAG mill) to be located partly within the existing pilot plant and partly on the existing run of mine pad (ROM pad) (Schedule 1, Figure 3). The ore sorting circuit operates by identifying individual rocks and analysing density via X-ray Transmission (XRT). Compressed air is then used to sort high-grade from low-grade ore by physically moving rocks into each stream. The ore sorting circuit will allow the SAG mill to be operated more efficiently and therefore, an increase in throughput through the SAG mill from 10 tonnes per hour (TPH) to 15 tph is able to be achieved, resulting in an increase in production capacity from 80,000 tonnes per annum (tpa) to 131,490 tpa.

Other activities

Mine dewatering is undertaken at a rate of approximately 130 cubic metres (m³) per day, which equates to approximately 24,000 m³ over the course of the three year trial; below the production capacity for category 6 as described in Schedule 1 of the EP Regulations. Water from mine dewater is utilised on site for dust suppression.

Power generation is supplied by 3 x 1.25 megawatt diesel generators. The total installed capacity on the Premises (including at the camp) is below the production capacity for category 52 as described in Schedule 1 of the EP Regulations.

The licence holder has advised that bulk storage of chemicals on site does not trigger category 73 as the volume stored on site during the three year trial will not exceed 1,000 m³ in aggregate.

On 24 September 2015, works approval W5837/2015/1 was issued to the licence holder for the construction of a category 64 landfill and category 85 sewage facility, for full scale operations. The licence holder advised that the quantity of septic waste generated during the pilot plant trial would not trigger the threshold levels specified for sewage facilities under Schedule 1 and 2 of the EP Regulations.

This Licence is for the operation of the pilot plant trial and putrescible landfill established under works approval W6007/2016/1 and registration R2457/2017/1 (category 89), respectively.

The licences, works approvals and registrations issued for the Premises since 24 September 2015 are:

Instrument log		
Instrument	Issued	Description
W5837/2015/1	24/09/2015	New Works Approval for category 64 landfill and category 85 sewage facility for full scale operations
W6007/2016/1	13/03/2017	New Works Approval for category 5 pilot plant trial
R2457/2017/1	23/10/2017	Registration for the operation of a category 89 putrescible landfill
L9009/2016/1	11/07/2018	New Licence application to include the operation of the pilot plant trial and putrescible landfill (previously registered under R2457/2017/1)
L9009/2016/1	04/09/2020	Licence amendment to increase throughput capacity, install an ore sorting circuit, and correct the evaporation pond freeboard limit

Severance

It is the intent of these Licence conditions that they shall operate so that, if a condition or a part of a condition is beyond the power of this Licence to impose, or is otherwise *ultra vires* or invalid, that condition or part of a condition shall be severed and the remainder of these conditions shall nevertheless be valid to the extent that they are within the power of this Licence to impose and are not otherwise *ultra vires* or invalid.

END OF INTRODUCTION

Licence conditions

1 General

1.1 Interpretation

- 1.1.1 In the Licence, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears.
- 1.1.2 For the purposes of this Licence, unless the contrary intention appears:

'Act' means the Environmental Protection Act 1986;

'Anniversary Date' means 31 December of each year;

'Annual Audit Compliance Report' means a report in a format approved by the CEO as presented by the licence holder or as specified by the CEO from time to time and published on the Department's website;

'Annual Period' means a 12 month period commencing from 1 January to 31 December in the same year;

'AS/NZS 5667.1' means the Australian Standard AS/NZS 5667.1 Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples;

'AS/NZS 5667.11' means the Australian Standard AS/NZS 5667.11 *Water Quality – Sampling – Guidance on sampling of groundwaters*;

'Averaging period' means the time over which a limit is measured or a monitoring result is obtained;

'CEO' means Chief Executive Officer;

'CEO' for the purposes of notification means: Director General Department Administering the Act Locked Bag 10 JOONDALUP DC WA 6919 info@dwer.wa.gov.au;

'Clean Fill' has the meaning defined in Landfill Definitions;

'Department' means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V, Division 3 of the Act;

'Freeboard' means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point;

'HDPE' means high density polyethylene;

'Inert Waste Type 1' has the meaning defined in Landfill Definitions;

'Inert Waste Type 2' has the meaning defined in Landfill Definitions;

Department of Water and Environmental Regulation

'Landfill Definitions' means the document titled "Landfill Waste Classification and Waste Definitions 1996 (as amended 2019)" published by the Chief Executive Officer of the Department of Water and Environmental Regulation as amended from time to time;

'Licence' means this Licence numbered L9009/2016/1 and issued under the Act;

'Licence holder' means the person or organisation named as licence holder on page 1 of the Licence;

'mbgl' means metres below ground level;

'µS/cm' means micro Siemens per centimetre;

'NATA' means the National Association of Testing Authorities, Australia;

'NATA accredited' means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis;

'**Premises**'means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Licence;

'Putrescible' has the meaning defined in Landfill Definitions;

'Quarterly' means the 4 inclusive periods from 1 January to 31 March, 1 April to 30 June, 1 July to 30 September and 1 October to 31 December in the same year;

'Schedule 1' means Schedule 1 of this Licence unless otherwise stated;

'Schedule 2' means Schedule 2 of this Licence unless otherwise stated;

'Six monthly' means the 2 inclusive periods from 1 January to 30 June and 1 July to 31 December in the same year;

'Spot sample' means a discrete sample representative at the time and place at which the sample is taken;

'Suitably qualified professional engineer' means a person who:

- a) holds a Bachelor of Engineering recognised by the Institute of Engineers; and
- b) has a minimum of five years of experience working in a relevant supervisory area of civil engineering; and
- c) is employed by an independent third party external to the licence holder's business,
- or is otherwise approved in writing by the CEO to act in this capacity;

'TSF' means tailings storage facility; and

'Wet season' means the months December in each year and January, February and March in the following year.

- 1.1.3 Any reference to an Australian or other standard in the Licence means the relevant parts of the standard in force from time to time during the term of this Licence.
- 1.1.4 Any reference to a guideline or code of practice in the Licence means the version of that guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guideline or code of practice made during the term of this Licence.

1.2 General conditions

1.2.1 The licence holder shall immediately recover, or remove and dispose of spills of wastewater, process liquors, tailings, chemicals or hydrocarbons outside an engineered containment system.

1.3 **Premises operation**

- 1.3.1 The licence holder shall record and investigate the exceedance of any descriptive or numerical limit in this section.
- 1.3.2 The licence holder shall ensure that where waste produced on the Premises are not taken off-site for lawful use or disposal, they are managed according to the requirements in Table 1.3.1.

Waste type	Management Strategy	Requirements
		All waste types
Inert Waste		No more than 499 tonnes per annual period of all waste types cumulatively shall be disposed of by landfilling.
Type 1		Disposal of waste by landfilling shall only take place within the Landfill shown on the Landfill Facility Map in Schedule 1.
		Waste shall be placed in a defined trench or within an area enclosed by earthen windrows.
		The tipping area of the Landfill shall not be greater than 2 m above ground level in height.
Putrescible Waste	Receipt, handling and disposal of waste by landfilling	The separation distance between the base of the landfill and the highest groundwater level shall not be less than 3 m.
		Maintain a minimum distance of at least 100 m between the previously filled areas of the landfill and the active tipping area and any surface water body.
		A fence or other physical barrier shall be maintained around the active landfill area which is an effective barrier to cattle, horses and stock.
		Undertake fortnightly inspections of the landfill fence or other physical barrier and ensure any damage to the fence is repaired within 14 days.
		Ensure that wind-blown waste is contained within the boundary of the landfill and that wind- blown waste is returned to the tipping area on at least a monthly basis.
		Ensure that no waste is burnt on the Premises.
Ciean Fill		Ensure that any unauthorised fire at the Landfill is promptly extinguished.
Inert Waste		Tyres ¹ and plastic pallets
Type 2		No more than 50 tyres and 5 tonnes of plastic
nlastic		Periets small be disposed of by landmilling. Batches must be separated from each other by
pellets)		at least 100 mm of soil.
	Putrescible Naste Type 1 Putrescible Naste Clean Fill Clean Fill nert Waste Type 2 tyres and plastic pellets)	Naste type Management Strategy nert Waste Type 1 Receipt, handling and disposal of waste by landfilling Clean Fill Receipt, handling and disposal of waste by landfilling Clean Fill Receipt, handling and disposal of waste by landfilling

Note 1: Requirements for landfilling tyres are set out in Part 6 of the *Environmental Protection Regulations* 1987.

1.3.3 The licence holder shall ensure that cover is applied and maintained on landfilled wastes in accordance with Table 1.3.2 and that sufficient stockpiles of cover are maintained on site at all times.

Table 1.3.2 Cover requirements				
Waste Type Material		Depth	Timescales	
Inert Waste Type 1	No cover required			
Putrescible Waste and Inert Waste Type 2 (plastic pallets)	Inert Waste Type 1 or	300 mm	Fortnightly	
Inert Waste Type 2 (tyres)	soil	500 mm	By the end of the working day in which the waste was deposited	

1.3.4 The licence holder shall ensure that waste material is only stored and/or treated within vessels or compounds provided within the infrastructure detailed in Table 1.3.3.

Table 1.3.3: Containment infrastructure					
Storage vessel or compound as depicted in Schedule 1	Material	Requirements			
TSF	Combined tailings from the beneficiation and hydrometallurgical processing facilities	 HDPE geomembrane liner with permeability of 1 x 10⁻⁹ m/s Minimum top of spillway freeboard of 300 mm maintained TSF Stage 2 embankment – final elevation of Relative Level 453 m 			
Evaporation pond	Raffinate from the hydrometallurgical plant	 HDPE geomembrane liner with permeability of 1 x 10 ⁻⁹ m/s Maintain operational freeboard of no less than 300 mm 			
Beneficiation Plant and Hydrometallurgical Event ponds	Potentially contaminated stormwater from the beneficiation and hydrometallurgical processing facilities	 HDPE geomembrane liner with permeability of 1 x 10⁻⁹ m/s 1.1 m freeboard maintained to contain a 1 in 20 year return period, 24 hour rainfall event 			
	Spillage from the beneficiation and hydrometallurgical processing facilities				

- 1.3.5 The licence holder shall ensure that the beneficiation plant and hydrometallurgical event ponds are emptied (maximum of 0.5 m water allowed in each pond) at the commencement of the wet season.
- 1.3.6 The licence holder shall ensure that all pipelines containing tailings, tailings return water and hydrometallurgical raffinate are either:
 - (a) equipped with operating telemetry systems and pressure sensors to allow detection of leaks and failures; or
 - (b) equipped with flow switches in the event of a pipe failure; or
 - (c) provided with secondary containment with sufficient volume to contain 12 hours of discharge.

1.3.7 The licence holder shall:

- (a) undertake inspections as detailed in Table 1.3.4;
- (b) where any inspection identifies that an appropriate level of environmental protection is not being maintained, take corrective action to mitigate adverse environmental consequences as soon as practicable; and
- (c) maintain a record of all inspections and corrective actions undertaken.

Table 1.3.4: Inspection of infrastructure				
Scope of inspection	Type of inspection	Frequency of inspection		
Tailings delivery pipeline Evaporation pond delivery pipeline	Visual integrity	Once each 12- hour period during operation		
Tailings deposition	Visual			
Ponding on surface of the TSF	Visual to confirm size and location of the pond			
Internal TSF spillway freeboard Internal evaporation pond	Visual to confirm required freeboard is available	Daily		
Outflow pipeline from TSF underdrainage blanket	Visual			
Beneficiation Plant and Hydrometallurgical Event ponds	Visual to confirm required freeboard is available			
TSF External wall and toe drain	Visual	Maakhy		
Evaporation pond embankments	Visual integrity	VVEEKIY		

1.3.8 The licence holder shall ensure the limits specified in Table 1.3.5 are not exceeded.

Table 1.3.5: Production or design capacity limits					
Category ¹	Category description ¹	Premises production or design capacity limit			
5	Processing or beneficiation of metallic or non-metallic ore	131,490 tonnes per annual period			
Nate 1. Environ	manufal Protoction Poor dations 1007 Cabadu				

Note 1: Environmental Protection Regulations 1987, Schedule 1.

- 1.3.9 The licence holder shall undertake an annual water balance for the TSF. The water balance shall as a minimum consider and include the following:
 - (a) site rainfall;
 - (b) evaporation;
 - (c) tailings return water recovery volumes;
 - (d) seepage recovery volumes; and
 - (e) volumes of tailings deposited.
- 1.3.10 The licence holder must construct the infrastructure listed in Table 1.3.6 in accordance with:
 - (a) the corresponding design and construction requirement; and
 - (b) at the corresponding infrastructure location.

Table 1.3.6: Design and construction requirements ⁴				
Infrastructure	De	sign and construction requirements	Infrastructure location	
Ore sorting	1.	Crushed ore bin fed directly from the	Located partially on ROM	
circuit		existing primary crusher via crusher	pad and pilot plant area;	
		discharge conveyor.	the active Fines (Select)	
	2.	Stacker conveyor to transfer ore directly	Stockpiles located away	
		from the primary crusher to the bypass	from the edges of the	
		stockpile in the event the XRT ore sorter is	ROM pad.	
		offline. And to transfer sorted ore materials		
		and sludge from the washing screen and	Schedule 1, Figure 4.	
		clarifier to the bypass stockpile.		
	3.	Classification screen, including dust		
		suppression sprays to control dust		
		generated from fines, at the point it		
		discharges from the screen and travels via		
		conveyor to the select stockpile.		
	4.	Stacker conveyor from the classification		
		screen to the oversized stockpile for		
		oversized material to be recycled back		
	_	through the existing crushing circuit.		
	5.	wasning screen and clarifier to remove		
		sludge lines (sludge co-deposited with		
		sorted select material to the select		
	6	Stockpile for processing).		
	0. 7	Vasi water storage tank.		
	1.	to the existing SAC mill feed him		
	8	Conveyors to transport sorted and		
	0.	unsorted ore between each stage		
	9	Dust mitigation measures to control dust		
	0.	deperated from materials transferred via		
		conveyors to encompass the following:		
		 Enclosed or wet conveyance of fines 		
		material.		
		Misting dust suppression system on		
		the crushed ore bin.		
		Washing step to remove fine material		
		from select and rejects streams.		

- 1.3.11 The licence holder shall operate the ore sorter circuit outlined in Table 1.3.6 in accordance with the conditions of this Licence, following submission of the compliance documents required under condition 3.3.1.
- 1.3.12 Nothing in the Licence shall be taken to authorise any emission that is not mentioned in the Licence, where the emission amounts to:
 - (a) Pollution;
 - (b) Unreasonable emission;
 - (c) Discharge of waste in circumstances likely to cause pollution; or
 - (d) Being contrary to any written law.

2 Monitoring

2.1 General monitoring

- 2.1.1 The licence holder shall ensure that:
 - (a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
 - (b) all groundwater sampling is conducted in accordance with AS/NZS 5667.11; and
 - (c) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured, unless indicated otherwise in the relevant table.
- 2.1.2 The licence holder shall ensure that:
 - (a) monthly monitoring is undertaken at least 15 days apart;
 - (b) quarterly monitoring is undertaken at least 45 days apart; and
 - (c) six monthly monitoring is undertaken at least 5 months apart.
- 2.1.3 The licence holder shall ensure that all monitoring equipment used on the Premises to comply with the conditions of this Licence is calibrated in accordance with the manufacturer's specifications.
- 2.1.4 The licence holder shall, where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring these issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.

2.2 Monitoring of inputs and outputs

2.2.1 The licence holder shall undertake the monitoring in Table 2.2.1 according to the specifications in that table.

Table 2.2.1: Monitoring of inputs and outputs					
Input/output	Parameter	Units	Averaging period	Frequency	
Waste Inputs	Inert Waste Type 1, Inert Waste Type 2, Clean Fill and Putrescible Waste	m ³	N/A	Monthly	

2.3 **Process monitoring**

2.3.1 The licence holder shall undertake the monitoring in Table 2.3.1 according to the specifications in that table.

Table 2.3.1: Process monitoring					
Monitoring point reference	Parameter	Units	Frequency	Method	
Evaporation pond	Volume discharged to ponds	m ³	Cumulative	None specified	
TSF	Volume discharged		monthly total	-	

2.4 Ambient environmental quality monitoring

2.4.1 The licence holder shall undertake the monitoring in Table 2.4.1 according to the specifications in that table.

Table 2.4.1: Monitoring	g of ambient groundwater qual	ity		
Monitoring point	Parameter	Units	Averaging	Frequency
reference and			period	
location as depicted				
in Schedule 1				
	Standing water level ¹	mbgl		
	pH ¹	pH units		
	Total Dissolved Solids ¹	mg/L	Crat	
	Electrical Conductivity ¹	µS/cm	Spor	Monthly
	Redox potential ¹	Volts	sample	-
	Total Acidity and Total	mg/L		
	Total Asidity and Total			
	Alkalinity			
Tailings Storage Facility MB01S, MB01D, MB02S, MB02D, MB03 and MB03S	Major cations and anions sodium, potassium, calcium, magnesium, chloride, sulfate, bicarbonate		Oraci	Six monthly or immediately if monthly monitoring
	Metals, metalloids and non- metals aluminium, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, gadolinium, iron, lead, manganese, molybdenum, mercury, nickel, thorium, selenium, thallium, tin, uranium, vanadium, zinc	mg/L	Spot sample	detects increase of background groundwater levels and/or water quality
	Standing water level ¹	mbgl	Spot	
	pH ¹	pH units	sample	Monthly
	Total Dissolved Solids ¹	mg/L		
Evaporation Pond MB04S, MB04D, MB05 and MB05S	Major cations and anions sodium, potassium, calcium, magnesium, chloride, sulfate, bicarbonate Metals, metalloids and non- metals aluminium, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, iron, lead, manganese,	mg/L	Spot sample	Six monthly or immediately if monthly monitoring detects increase of background groundwater levels and/or water
	molybdenum, nickel, thorium, tin, uranium, vanadium, zinc			quality

Department of Water and Environmental Regulation

Table 2.4.1: Monitoring of ambient groundwater quality				
Monitoring point reference and location as depicted	Parameter	Units	Averaging period	Frequency
in Schedule 1				
	Standing water level ¹	mbgl	Spot sample	Quarterly
	pH ¹	pH units		
Landfill MB06, MB07, MB08 and MB09	Electrical Conductivity ¹	µS/cm		
	Total Dissolved Solids ¹			
	Biochemical oxygen demand			
	Total recoverable hydrocarbons	Ę	Spot	Six monthly
	chloride, fluoride, potassium, sulfate			
	total nitrogen, nitrate- nitrogen, nitrite-nitrogen, ammonia-nitrogen, total phosphorus, phosphate	mg/L		
	dissolved aluminium, arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, zinc			

Note 1: In-field non-NATA accredited analysis permitted

3 Information

3.1 Records

- 3.1.1 The licence holder must maintain accurate and auditable books including the following records, information, reports, and data required by this licence:
 - (a) the calculation of fees payable in respect of this licence;
 - (b) the works conducted in accordance with condition 1.3.10 of this licence;
 - (c) any maintenance of infrastructure that is performed in the course of complying with conditions 1.1 to 1.3 of this licence;
 - (d) monitoring programmes undertaken in accordance with conditions 2.1 to 2.4 of this licence; and
 - (e) complaints received under condition 3.1.3 of this licence.
- 3.1.2 All information and records required by the Licence shall:
 - (a) be legible;
 - (b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;
 - (c) be retained by the licence holder for the duration of the licence; and
 - (d) be available to be produced to an inspector or the CEO as required.
- 3.1.3 The licence holder must record the following information in relation to complaints received by the licence holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the premises:
 - (a) the name and contact details of the complainant, (if provided);
 - (b) the time and date of the complaint;
 - (c) the complete details of the complaint and any other concerns or other issues raised; and
 - (d) the complete details and dates of any action taken by the licence holder to investigate or respond to any complaint.

3.2 Reporting

- 3.2.1 The licence holder must:
 - (a) undertake an audit of their compliance with the conditions of this licence during the preceding Annual Period;
 - (b) submit to the CEO an Annual Environmental Report which contains the information listed in Table 3.2.1 in the format or form specified in Table 3.2.1 within 90 calendar days after the end of the Annual Period; and
 - (c) prepare and submit to the CEO within 90 calendar days after the end of the Annual Period an Annual Audit Compliance Report in the approved form indicating the extent to which the license holder has complied with the conditions in this Licence.

Table 3.2.1: Annual Environmental Report			
Condition or table	Parameter	Format or form	
(if relevant)			
-	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken	None specified	
1.3.9	Annual water balance	None specified	
Table 2.2.1	Waste inputs	None specified	
Table 2.3.1	Volumes discharged to TSF and evaporation pond	None specified	
Table 2.4.1	Ambient groundwater monitoring results	None specified	
3.1.3	Complaints summary	None specified	
3.2.1	Compliance	Annual Audit	
		Compliance	
		Report	

3.2.2 The licence holder shall ensure that the Annual Environmental Report also contains:

(a) an assessment of the information contained within the report against all previous monitoring results; and

(b) a list of any original monitoring reports submitted to the licence holder from third parties for the annual period and make these reports available on request.

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3.3 Notification

3.3.1 The licence holder shall ensure that the parameters listed in Table 3.3.1 are notified to the CEO in accordance with the notification requirements of the table.

Table 3.3.1: Notification requirements			
Condition or	Parameter	Notification	Format or
table		requirement ¹	form ²
(if relevant)		-	
1.3.1	Breach of any limit specified in the Licence	Part A: No later than 5pm of the next usual working day.	N1
1.3.11	 The licence holder must: undertake an audit of compliance with the requirements of condition 1.3.11; and prepare and submit to the CEO an audit report on whether or not that compliance has been met. The report must: be certified by a suitably qualified professional engineer that each item of infrastructure listed in Table 1.3.6 meets the corresponding specifications and at the locations set out in Table 1.3.6 and has been constructed with no material defects; where an item of infrastructure has been certified as not being located or constructed, or does not comply with the corresponding requirements, the licence holder must correct the noncompliant or defective works prior to re-certifying, or provide to the CEO a description of, and explanation for, any departures from the requirements specified in Table 1.3.6 that do not require relocation or rectification and do not constitute a material defect along with the report; be signed by a person authorised to represent the licence holder and contains the printed name and position of that person within the company. 	60 days after completion of construction	None specified
2.1.4	Calibration report	As soon as	None
		practicable.	specified

Note 1: Notification requirements in the Licence shall not negate the requirement to comply with s72 of the Act

Note 2: Forms are in Schedule 2

Schedule 1: Maps

Premises map

The Premises is shown in the map below. The yellow line depicts the Premises boundary.



Figure 1: Map of the prescribed premises boundary

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Map of Landfill Facility, containment infrastructure and monitoring locations

The location of the Landfill Facility defined in Table 1.3.1 is shown below. The location of the containment infrastructure defined in Table 1.3.3 are shown below. The locations of the monitoring points defined in Table 2.4.1 are shown below.



Figure 2: Map of the Landfill Facility, containment infrastructure and monitoring locations





Figure 3: Map of the ore sorting circuit (indicative location)

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Figure 4: Map of the ore sorting circuit (general arrangement)

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Schedule 2: Reporting & notification forms

Licence:L9009/2016/1Licence holder: Northern Minerals LimitedForm:N1Date of breach:

Notification of detection of the breach of a limit.

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

Part A

Licence number	
Name of operator	
Location of premises	
Time and date of the detection	

Notification requirements for the breach of a limit		
Emission point reference/source		
Parameter(s)		
Limit		
Measured value		
Date and time of monitoring		
Measures taken, or intended to be		
taken, to stop the emission		

Part B

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident.	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission.	
The dates of any previous N1 notifications for the Premises in the preceding 24 months.	

Name	
Post	
Signature on behalf of licence holder	
Date	