

Permit

Environmental Protection Act 1994

Environmental authority EPVL00673613

This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.

Environmental authority number: EPVL00673613

Environmental authority takes effect on 26 May 2022.

The anniversary date of this environmental authority is 16 February each year.

Environmental authority holder(s)

Name(s)	Registered address
Spinifex Mines Pty Ltd	Level 14 309 Kent St SYDNEY NSW 2000

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 - 16 - Mining gold ore	ML2741 ML2752
Schedule 3 - 09 - A mining activity involving drilling, costeaning, pitting or carrying out geological surveys causing significant disturbance	ML2741 ML2742 ML2750 ML2752 ML2763
Non-Scheduled - Mining Activity - Mining Lease (ML)	ML2741 ML2742 ML2750 ML2752 ML2763
ERA 31 - Mineral processing - 2(b) - Processing, in a year, the following quantities of mineral products, other than coke - more than 100,000t	ML2741 ML2752

Additional information for applicants

Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.

An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.

A person carrying out an ERA must also be a registered suitable operator under the *Environmental Protection Act 1994* (EP Act).

Contaminated land

It is a requirement of the EP Act that an owner or occupier of contaminated land give written notice to the administering authority if they become aware of the following:

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days)

that is causing, or is reasonably likely to cause, serious or material environmental harm.

For further information, including the form for giving written notice, refer to the Queensland Government website www.qld.gov.au, using the search term 'duty to notify'.

Take effect

Please note that, in accordance with section 200 of the EP Act, an EA has effect:

- a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority - on the nominated day; or
- b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or
- c) otherwise on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Planning Act 2016* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.

If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

The anniversary day of this environmental authority is the same day each year as the original take effect date unless you apply to change the anniversary day. The payment of the annual fee will be due each year on this day. An annual return will be due each year on 01 April.

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the additional authorisation is not legal and could result in your prosecution for providing false or misleading information or operating without a valid environmental authority.

T Gibbs

Signature

26 May 2022

Date

Teale Gibbs
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

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Privacy statement

Pursuant to section 540 of the EP Act, the Department is required to maintain a register of certain documents and information authorised under the EP Act. A copy of this document will be kept on the public register. The register is available for inspection by members of the public who are able take extracts, or copies of the documents from the register. Documents that are required to be kept on the register are published in their entirety, unless alteration is required by the EP Act. There is no general discretion allowing the Department to withhold documents or information required to be kept on the public register. For more information on the Department's public register, search 'public register' at www.qld.gov.au. For queries about privacy matters please email privacy@des.qld.gov.au or telephone 13 74 68.

Obligations under the *Environmental Protection Act 1994*

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

Other permits required

This permit only provides an approval under the *Environmental Protection Act 1994*. In order to lawfully operate you may also require permits / approvals from your local government authority, other business units within the department and other State Government agencies prior to commencing any activity at the site. For example, this may include permits / approvals with your local Council (for planning approval), the Department of Transport and Main Roads (to access state controlled roads), the Department of Resources (to clear vegetation), and the Department of Agriculture and Fisheries (to clear marine plants or to obtain a quarry material allocation).

Conditions of Environmental Authority

The environmentally relevant activities conducted at the authorised locations must be conducted in accordance with the following site specific conditions of approval:

- Schedule A – General
- Schedule B – Air
- Schedule C – Water
- Schedule D – Noise
- Schedule E – Waste
- Schedule F – Land and Rehabilitation
- Schedule G – Nature Conservation
- Schedule H – Regulated Structures
- Schedule I – Definitions
- Schedule J – Locations for Authorised Mining Activities
- Schedule K – Monitoring Locations

Schedule A - General

Activity

- A1 This environmental authority authorises environmental harm referred to in the conditions. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence does not authorise environmental harm.
- A2 In carrying out the mining activity authorised by this environmental authority, the holder of this environmental authority must comply with Table A1 – Authorised Mining Activities and Locations, Schedule J – Figure 1 (Project Infrastructure Layout).

Table A1 – Authorised Mining Activities and Locations

Mine Domain	Mine Feature Name	Mining Lease(s)	Location		Maximum area of disturbance (ha)
			Latitude	Longitude	
Open Pit	Mt Freda Pit	ML2752	-20.97877336	140.7381321	5.2
Tailings Storage Facility (TSF)/Spent Ore Storage Facility (SOSF)	TSF/SOSF	ML2752	-20.98167106	140.7347434	3.3
Waste Rock Dump (WRD) ²	NE Waste Rock Dump	ML2752	-20.97869765	140.7398096	0.7
	NW Waste Rock Dump	ML2752, ML2741	-20.97705525	140.7373607	7.5
	Plant Waste Rock Dump	ML2752	-20.97961786	140.7381299	1.0
	SE Waste Rock Dump	ML2752	-20.98183412	140.7377296	4.0
	Topsoil Stockpile 1	ML2752	-20.978676	140.731992	0.2
	Topsoil Stockpile 2	ML2752	-20.983191	140.735303	0.2
	Topsoil Stockpile 3	ML2752	-20.980684	140.739593	0.2
	Topsoil Stockpile 4	ML2752	-20.979166	140.740562	0.2
Water Management	Sediment Pond 1	ML2752	-20.97828504	140.7339526	0.23
	Sediment Pond 2	ML2752	-20.981394	140.739077	0.04
	Sediment Pond 3	ML2752	-20.981805	140.73878	0.12
	Sediment Pond 4	ML2752	-20.975505	140.73719	0.15
	Sediment Pond 5	ML2752	-20.977899	140.739679	0.15
	Sediment Pond 6	ML2752	-20.982865	140.736101	0.08
	Sediment Pond 7	ML2752	-20.982910	140.735230	0.19
	Raw Water Dam (and embankment)	ML2752	-20.980498	140.733061	2.3
Infrastructure	Plant Area Mosaic	ML2752	-20.98099894	140.7371852	1.5
	Fuel storage/Power/Laydown	ML2752	-20.98083439	140.7374534	0.2
	Camp/Office	ML2752	-20.9813521	140.7371842	0.12
	Run of Mine (ROM)/Crusher	ML2752	-20.97872665	140.7326122	0.72
	Magazine	ML2752	-20.980038	140.740834	0.35
	Waste trench/pit	ML2752	-20.977878	140.739258	0.01
	Core storage area	ML2752	-20.98216	140.74290	0.15
	Septic leach trench	ML2752	-20.98156	140.73686	0.002
Exploration	"Evening Star"	ML2750, ML2742 and ML2763	TBA ¹	TBA ¹	TBA ¹
	Tracks and Drill Pads	ML2741, ML2752, ML2750, ML2742,	Various	Various	4.0

Mine Domain	Mine Feature Name	Mining Lease(s)	Location		Maximum area of disturbance (ha)
			Latitude	Longitude	
		ML2763			
Roads and Access Tracks	Access Tracks ²	ML2741, ML2752, ML2750, ML2742, ML2763	Various	Various	1.5
	On Lease Haul Rd	ML2741, ML2752,	Various	Various	1.7
Vat Leach Operation	Vat 1	ML2741, ML2752	-20.97893373	140.7338389	2.0
	Vat 2	ML2741, ML2752	-20.97992473	140.7352746	2.12
	Barren Liquor Solution (BLS) Pond	ML2752	-20.98138026	140.7360357	0.86
	Pregnant Liquor Solution (PLS) Pond	ML2752	-20.98036954	140.7363797	0.73
	Raw water pond (RWP)	ML2752	-20.98233998	140.7357544	0.7
	Processing plant	ML2752	-20.98073369	140.7369893	0.1
Historical mine area ³	Western LGO Stockpile	ML2741, ML2752	20.978686	140.731865	2.57
	Eastern LGO Stockpile	ML2741, ML2752	20.979243	140.734349	0.40

¹ TBA – The environmental authority holder must provide this detail/information, as well as updated plans and maps, to the administering authority prior to mining activities in these areas.

²Area of disturbance for access tracks includes ramps and earthworks required to access vats and SOSF not already included in the area of disturbance for those features.

³The western and eastern low grade ore stockpiles are located where the ROM/crusher and Vats 1 and 2 will be located.

Maintenance of Measures, Plant and Equipment

A3 The holder of this environmental authority must:

- install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority; and
- maintain such measures, plant and equipment in a proper and efficient condition; and
- operate such measures, plant and equipment in a proper and efficient manner; and
- ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated.

Monitoring

A4 Except where specified otherwise in another condition of this environmental authority, all monitoring data, records and reports required by this environmental authority or related to environmental management of the activities must be:

- carried out by an appropriately qualified person; and
- kept for a period of not less than 5 years; and
- provided to the administering authority in the specified format within 10 business days of a request.

A5 The following information must be recorded in relation to all monitoring required under the conditions of this environmental authority:

- the date and time at which the sample was taken; and
- the location or monitoring point at which the sample was taken; and

- c) the results of all monitoring and details of any exceedances of the conditions of the environmental authority; and
- d) any other pertinent details in order to interpret the sampling results (i.e. stream flow, wind directions or any unusual observations such as odour or colouration).

Financial Assurance

- A6 The activity must not be carried out until the environmental authority holder has given financial assurance to the administering authority as security for compliance with this environmental authority and any costs or expenses, or likely costs or expenses, mentioned in section 298 of the Act.
- A7 The amount of financial assurance must be reviewed by the holder of this environmental authority when a plan of operations is amended or replaced or the authority is amended.

Risk Management

- A8 By 16 May 2022, the holder of this environmental authority must develop and implement an updated risk management system for mining activities which mirrors the content requirement of the Standard for Risk Management (ISO31000:2009), or the latest edition of an Australian standard for risk management, to the extent relevant to environmental management.

Notification of Emergencies, Incidents & Exceedances

- A9 The holder of this environmental authority must notify the administering authority by written notification within 24 hours, after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with, the conditions of this environmental authority.
- A10 Within 10 business days following the initial notification of an emergency or incident, or receipt of monitoring results, whichever is the latter, further written advice must be provided to the administering authority, including the following:
- a) results and interpretation of any samples taken and analysed
 - b) outcomes of actions taken at the time to prevent or minimise unlawful environmental harm
 - c) proposed actions to prevent a recurrence of the emergency or incident.

Complaints

- A11 The holder of this environmental authority must record all environmental complaints received about the mining activities including:
- a) name, address and contact number for of the complainant
 - b) time and date of complaint
 - c) reasons for the complaint
 - d) investigations undertaken
 - e) conclusions formed
 - f) actions taken to resolve the complaint
 - g) any abatement measures implemented
 - h) person responsible for resolving the complaint.

- A12 The holder of this environmental authority must, when requested by the administering authority, undertake relevant specified monitoring within a reasonable timeframe nominated or agreed to by the administering authority to investigate any complaint of environmental harm. The results of the investigation (including an analysis and interpretation of the monitoring results) and abatement measures, where implemented, must be provided to the administering authority within 10 business days of completion of the investigation, or no later than 10 business days after the end of the timeframe nominated by the administering authority to undertake the investigation.

Third-Party Reporting

- A13 The holder of this environmental authority must:
- a) within one year of the commencement of this environmental authority, obtain from an appropriately qualified person a report on compliance with the conditions of this environmental authority
 - b) obtain further such reports at regular intervals, not exceeding three-yearly intervals, from the completion of the report referred to above
 - c) provide each report to the administering authority within 90 days of its completion.
- A14 Where a condition of this environmental authority requires compliance with a standard, policy or guideline published externally to this environmental authority and the standard is amended or changed subsequent to the issue of this environmental authority, the holder of this environmental authority must:
- a) comply with the amended or changed standard, policy or guideline within two years of the amendment or change being made, unless a different period is specified in the amended standard or relevant legislation, or where the amendment or change relates specifically to regulated structures, the time specified in that condition;
 - b) until compliance with the amended or changed standard, policy or guideline is achieved, continue to remain in compliance with the corresponding provision that was current immediately prior to the relevant amendment or change.

Third-Party Ore

- A15 The environmental authority holder is authorised to receive, stockpile and process ore from mining lease (ML) 100201, provided such activities comply with the requirements set out in this environmental authority and geochemical assessment of the ore is undertaken prior to storage and processing on site.

END OF CONDITIONS FOR SCHEDULE A

Schedule B - Air

General

- B1 The environmental authority holder must ensure that air emissions do not cause environmental harm to any sensitive place or commercial place.

Dust and Particulate Matter Monitoring

- B2 The environmental authority holder shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that the dust and particulate matter emissions generated by the mining activities do not cause exceedances of the following levels when measured at any sensitive or commercial place:
- a) Dust deposition of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with the most recent version of *Australian Standard AS3580.10.1 Methods for sampling and analysis of ambient air—Determination of particulate matter—Deposited matter – Gravimetric method*;
 - b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometres (PM₁₀) suspended in the atmosphere of 50 micrograms per cubic metre over a 24-hour averaging time, for no more than five exceedances recorded each year, when monitored in accordance with the most recent version of either:
 - 1. *Australian Standard AS3580.9.6 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 high volume sampler with size-selective inlet – Gravimetric method*, or
 - 2. *Australian Standard AS3580.9.9 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 low volume sampler—Gravimetric method*.
 - c) A concentration of particulate matter with an aerodynamic diameter of less than 2.5 micrometres (PM_{2.5}) suspended in the atmosphere of 25 micrograms per cubic metre over a 24-hour averaging time, when monitored in accordance with the most recent version of *AS/NZS3580.9.10 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM (sub)_{2.5}(/sub) low volume sampler—Gravimetric method*;
 - d) A concentration of particulate matter suspended in the atmosphere of 90 micrograms per cubic metre over a 1 year averaging time, when monitored in accordance with the most recent version of *AS/NZS3580.9.3:2003 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—Total suspended particulate matter (TSP)—High volume sampler gravimetric method*.

END OF CONDITIONS FOR SCHEDULE B

Schedule C - Water

Contaminant Release

- C1 Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters as a result of the authorised mining activities.

Water Management Plan

- C2 By 16 May 2022, a Water Management Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activity.
- C3 The Water Management Plan must:
- (a) provide for effective water management of actual and potential environmental impacts resulting from the mining activity; and
 - (b) developed and include:
 - i. a study of the source of contaminants.
 - ii. a water balance model for the site.
 - iii. a water management system for the site.
 - iv. measures to manage and prevent saline mine drainage.
 - v. measures to manage and prevent neutral mine drainage
 - vi. measures to manage and prevent acid rock drainage.
 - vii. contingency procedures for incidents and emergencies.
 - viii. a program for monitoring and review of the effectiveness of the water management plan.
- C4 The Water Management Plan must be reviewed by prior to the wet season (no later than 1 November) and a further review following the wet season (by 1 May the following year) to ensure that proper and effective measures, practices or procedures are in place so that operations are in accordance with the conditions of this environmental authority and that environmental harm is prevented or minimised.
- C5 The review of the Water Management Plan in condition C4 must be documented and:
- (a) include a statement that the Water Management Plan has been reviewed by an appropriately qualified person.
 - (b) assess the plan against the requirements under condition C3.
 - (c) include recommended actions to ensure actual and potential environmental impacts are effectively managed.
 - (d) provide details and timelines of the actions to be taken.
 - (e) identify any amendments made to the Water Management Plan.
- C6 A copy of the Water Management Plan and the annual reviews must be provided to the administering authority on request.

Surface water

- C7 Surface waters and sediments must be monitored at the locations specified in Table C1: Surface waters and sediment monitoring locations and Schedule K – Figure #2 (Surface water and sediment monitoring locations).

Table C1: Surface waters and sediment monitoring locations

Monitoring site	Monitoring type	Monitoring site description	Latitude (GDA94)	Longitude (GDA94)
Reference sites				
SW01	Waters and sediments	Weatherly Creek east above dam	-20.982822	140.742175
SW04	Waters and sediments	Weatherly Creek below dam	-20.978862	140.730556
Compliance sites				
SW02	Waters and sediments	Weatherly Creek downstream	-20.975339	140.735647
SW03	Waters and sediments	Weatherly Creek downstream east	-20.976376	140.741417

- C8 Surface waters must be:
- (a) monitored for the quality characteristics in Table C2: Surface water quality objectives.
 - (b) monitored at the frequency in Table C2: Surface water quality objectives; and
 - (c) Water quality at the compliance sites listed in Table C1: Surface waters and sediment monitoring locations must not exceed any compliance limit specified in Table C2: Surface water quality objectives.

Table C2: Surface water quality objectives

Quality Characteristic ¹	Unit	Water quality objective	Monitoring frequency
pH	mg/L	6-8.5 ²	Monthly
EC	µS/cm	500 ²	
Sulphate (SO ₄ ²⁻)	mg/L	TBA ³	
Aluminium	mg/L	0.055 ²	
Arsenic	mg/L	0.013 ²	
Boron	mg/L	0.37 ²	
Cadmium	mg/L	0.0002 ²	
Chromium	mg/L	0.001 ²	

Quality Characteristic ¹	Unit	Water quality objective	Monitoring frequency
Cobalt	mg/L	0.0014 ²	Monthly
Copper	mg/L	0.0014 ²	
Lead	mg/L	0.0034 ²	
Mercury	mg/L	0.0006 ²	
Molybdenum	mg/L	0.034 ²	
Nickel	mg/L	0.011 ²	
Selenium	mg/L	0.005 ²	
Uranium	mg/L	0.0005 ²	
Zinc	mg/L	0.008 ²	
Fluoride	mg/L	2.4 ²	
Nitrate as N (NO ₃)	mg/L	0.7 ²	
Cyanide (Free)	mg/L	0.007 ²	
Barium	mg/L	TBA ³	
Manganese	mg/L	1.9 ²	
Cyanide (WAD)	mg/L	For interpretation only	
Major ions (bicarbonate, calcium, chloride, potassium, magnesium, sodium)	mg/L	For interpretation only	
Stream observation	m ³ /s	For interpretation only	

¹All metals and metalloids must be measured as 'dissolved' (from analysis of a field filtered sample) and 'total'.

²ANZG (2018) trigger levels for 95% aquatic ecosystem protection for slightly to moderately disturbed ecosystems.

Measured as 'dissolved'.

TBA³ Surface water quality objectives must be provided by 31 May 2023.

C9

Sediments must:

- (a) be monitored for the quality characteristics in Table C3: Sediment quality objectives.
- (b) be monitored at the frequency in Table C3: Sediment quality objectives; and
- (c) Sediment quality at the compliance sites listed in Table C1: Surface waters and sediment monitoring locations must not exceed any sediment quality objective specified Table C3: Sediment quality objectives.

Table C3: Sediment quality objectives

Quality characteristic	Unit	Sediment quality objective ¹	Monitoring frequency
Arsenic	mg/kg dry weight	20	Two sampling rounds per wet season: 1. During the wet season after the creeks have been flushed once by rainfall. 2. After the wet season flows have ceased, but water is still present
Cadmium	mg/kg dry weight	1.5	
Chromium	mg/kg dry weight	80	
Copper	mg/kg dry weight	65	
Lead	mg/kg dry weight	50	
Mercury (inorganic)	mg/kg dry weight	0.15	
Nickel	mg/kg dry weight	21	
Zinc	mg/kg dry weight	200	

¹ANZG (2018) recommended toxicant default guideline values for sediment quality

C10 If a surface water and sediment quality characteristic measured at a compliance site specified in Table C1: Surface waters and sediment monitoring locations exceeds any quality objective specified in Table C2: Surface water quality objectives and sediment quality objective specified in Table C3: Sediment quality objectives the holder of this environmental authority must compare this result to the applicable reference site and:

- (a) If the quality measured at a compliance site is equal to or less than the quality measured at the applicable reference site, no further action is required; or
- (b) If the quality measured at a compliance site is greater than the quality measured at the applicable reference site, complete an investigation into the cause of the deterioration in water quality and the potential for environmental harm and submit a written report to the administering authority within 28 days outlining:
 - i. details of the investigation carried out
 - ii. findings of the investigation
 - iii. recommendations of the investigation; and
 - iv. actions taken to prevent environmental harm

Note: Where a quality objective exceedance has occurred and is under investigation in accordance with this condition, no further reporting is required for subsequent exceedance events of that quality objective during the course of the investigation.

C11 If an exceedance in accordance with condition C10(b) occurs, the holder of the environmental authority must notify the administering authority within 24 hours of receiving the monitoring result.

Receiving Environment Monitoring Program

C12 By 16 February 2022, a Receiving Environment Monitoring Program Design Document must be prepared in accordance with the latest version of the administering authority's guideline Receiving environment monitoring program (ESR/2016/2399) and condition C16.

For the purposes of the Receiving Environment Monitoring Program, the receiving environment is the waters of Weatherly Creek and connected or surrounding waterways of Williams River. downstream of the mining activity.

- C13 By 16 February 2022, the Receiving Environment Monitoring Program Design Document must be submitted to the administering authority and due consideration must be given to any comments made by the administering authority on the Receiving Environment Monitoring Program Design Document.
- C14 The Receiving Environment Monitoring Program Design Document must be reviewed and re-submitted to the administering authority by an appropriately qualified person every three (3) years after the date in condition C12 to ensure that any potential environmental impacts due to changes in the carrying out of the mining activity are monitored.
- C15 From 16 May 2022, the Receiving Environment Monitoring Program detailed in the Receiving Environment Monitoring Program Design Document must be implemented.
- C16 The Receiving Environment Monitoring Program must at a minimum:
- (a) monitor, identify and describe any adverse impacts to surface water environmental values, quality, and flows.
 - (b) assess the long-term condition or state of surface waters, sediments and aquatic ecosystem health.
 - (c) include the locations listed in Table C1: Surface waters and sediment monitoring locations
 - (d) identify all environmental values of the receiving environment.
 - (e) assess the receiving environment monitoring against water Table C2: Surface water quality objectives and Table C3: Sediment quality objectives
 - (f) include an assessment of the potential impacts of the activity and propose appropriate mitigation measures.
 - (g) assess the status of and any change to aquatic ecosystem health including aquatic flora and fauna within and immediately surrounding the project area.
 - (h) apply procedures and/or guidelines from ANZG 2018 and other relevant standards and guideline documents.
 - (i) describe sampling and analysis methods and quality assurance and control; and
 - (j) incorporate stream flow and hydrological information in the interpretations of water quality and biological data.
- C17 Each year by 30 September, a Receiving Environment Monitoring Program report, including all monitoring results and any interpretations or assumptions relied upon for the period of 1 July to 30 June the following year, must be prepared in accordance with conditions C16 and C18, and submitted to the administering authority upon request.
- C18 The Receiving Environment Monitoring Program report required by condition C17 must:
- (a) Be prepared by an appropriately qualified person.
 - (b) Include an audit of compliance with conditions C7 and C8; and
 - (c) Outline the findings of the Receiving Environment Monitoring Program, including but not limited to:
 - (i) An assessment of long-term background water quality,

- (ii) An assessment of the long-term condition or state of surface waters, sediment and aquatic ecosystem health.
 - (iii) Recommendations for further investigation.
 - (iv) Recommendations for changes or improvements to the monitoring program; and
 - (v) Potential changes to management and conditioning of the authorised activity to minimise impacts.
- (d) Include consideration and associated changes based on any comments received from the administering authority.

Water storage monitoring

C19 The quality of water in water storages in Table C4: Water storage monitoring must be monitored at the location and monitoring frequency in Table C4: Water storage monitoring for all quality characteristics specified in Table C2: Surface water quality objectives.

Table C4: Water storage monitoring

Water Storage	Location (GDA94)		Monitoring point	Monitoring frequency
	Latitude	Longitude		
Pit	-20.97877336	140.7381321	Lowest point of pit	Quarterly
Raw Water Dam	-20.980498	140.733061	Dam spillway	Quarterly
Sediment Pond 1	-20.97828504	140.7339526	Northern embankment	Quarterly
Sediment Pond 2	-20.981394	140.739077	Northern embankment	Quarterly
Sediment Pond 3	-20.981805	140.73878	Northern embankment	Quarterly
Sediment Pond 4	-20.975505	140.73719	Northern embankment	Quarterly
Sediment Pond 5	-20.977899	140.739679	Northern embankment	Quarterly
Sediment Pond 6	-20.982865	140.736101	Northern embankment	Quarterly
Sediment Pond 7	-20.982910	140.735230	Northern embankment	Quarterly

Erosion and Sediment Control

- C20 By 16 February 2022, an Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of stormwater.
- C21 The Erosion and Sediment Control Plan must:
- (a) demonstrate how erosion and sediment control measures detailed in the plan adequately minimise the release of sediment to receiving waters and must include at least the following:
 - (i) an assessment of the size and relevant characteristics of all catchment areas.
 - (ii) an assessment of relevant properties of soils and waste materials.
 - (iii) identification of receiving waters environmental values, water quality objectives and management intent.
 - (iv) specification of minimum design criteria for erosion and sediment control structures to meet the management intent of receiving waters.
 - (b) Detail the locations and descriptions of all erosion and sediment control measures.
 - (c) Provide an audit schedule to ensure erosion and sediment control measures are maintained.
- C22 The Erosion and Sediment Control Plan must be reviewed by an appropriately qualified person by each year by 30 September. The review must be documented and must:
- (a) include a statement that the Erosion and Sediment Control Plan has been reviewed by an appropriately qualified person.
 - (b) assess the plan against the requirements of condition C21.
 - (c) include recommended actions to ensure actual and potential environmental impacts are effectively managed.
 - (d) provide details and timelines of the actions to be taken.
 - (e) identify any amendments made to the Erosion and Sediment Control Plan.
- C23 A copy of the Erosion and Sediment Control Plan and the annual reviews must be provided to the administering authority on request.

Groundwater

- C24 Contaminants must not be released to groundwater.
- C25 The taking of or interference with groundwater must not cause environmental harm to any groundwater dependant ecosystems.
- C26 Groundwater quality and standing water level must be monitored:
- a) at the locations specified in Table C5 – Groundwater monitoring locations and frequency and Schedule K – Figure #1 (Groundwater Bore Monitoring Locations); and
 - b) at the frequencies specified in Table C5 – Groundwater monitoring locations and frequency; and
 - c) for the quality characteristics identified in Table C6 – Groundwater quality limits for the hydrogeological feature in which the bore is located.

Table C5 – Groundwater Monitoring Locations and Frequency

Monitoring Point	Location (GDA94 – Zone 56)		Surface RL ¹ (m)	Screened interval RL (m)	Monitoring Frequency	
	Latitude	Longitude			Standing Water Level	Groundwater Quality
Aquifer description Toole Creek Volcanics/b						
Compliance bores						
GW02	-20.98003	140.74006	254.8	214.4- 142.4	Quarterly	Quarterly
GW05R/A	-20.98354	140.73573	273.2	248.4- 230.4	Quarterly	Quarterly
GW05R/B	-20.98354	140.73573	273.2	258.5- 252.5	Quarterly	Quarterly
GW06A	-20.97939	140.73197	268.3	258.2- 254.2	Quarterly	Quarterly
GW06B	-20.97940	140.73187	268.3	243.9- 231.9	Quarterly	Quarterly
GW07A	-20.97794	140.73285	256.8	248.1- 243.1	Quarterly	Quarterly
GW07B	-20.97798	140.73281	256.3	232.1- 220.1	Quarterly	Quarterly
GW08A	-20.97742	140.74062	252.4	243.2- 238.2	Quarterly	Quarterly
GW08B	-20.97758	140.74059	252.0	234.4- 208.4	Quarterly	Quarterly
GW09	-20.98243	140.73839	259.7	235.0- 223.0	Quarterly	Quarterly
GW09R	-20.98534	140.73766	264	249.5- 237.5	Quarterly	Quarterly
GW11A	-20.97844	140.73397	257	238.5- 219.5	Quarterly	Quarterly
GW11B	-20.97844	140.73397	257	247.4- 241.4	Quarterly	Quarterly
GW13A	-20.97517	140.73623	257	235.4- 217.4	Quarterly	Quarterly
GW13B	-20.97517	140.73623	257	245.2- 239.2	Quarterly	Quarterly
Operational bores						
GW10	-20.98078	140.73578	268.8	243.8-231.8	Quarterly	Quarterly
Interpretation bores						
GW01	-20.97794	140.74357	241.5	TBA ¹	Quarterly	Quarterly
GW12	-20.97973	140.74152	256	241.1- 205.1	Quarterly	Quarterly

¹ TBA – Groundwater monitoring details must be provided by 31 October 2022.

² RL must be measured at the top of the bore casing to the nearest 5cm

Table C6 – Groundwater quality limits

Quality Characteristic	Units	Monitoring Bore	Limit A ¹	Limit B ¹
pH	pH units	All monitoring bores	7.7-8.2	7.6-8.5
EC	µS/cm	All monitoring bores	1,200	1,300
Sulphate (SO ₄ ²⁻)	mg/L	All monitoring bores	86	119
Dissolved aluminium	mg/L	All monitoring bores	0.021	0.028
Dissolved arsenic	mg/L	All monitoring bores	0.014	0.017
Dissolved boron	mg/L	All monitoring bores	0.045	0.058

Quality Characteristic	Units	Monitoring Bore	Limit A ¹	Limit B ¹
Dissolved cadmium	mg/L	All monitoring bores	N/A	0.0002 ²
Dissolved chromium	mg/L	All monitoring bores	N/A	0.001 ²
Dissolved cobalt	mg/L	All monitoring bores	0.007	0.02
Dissolved copper	mg/L	All monitoring bores	0.0040	0.0043
Dissolved lead	mg/L	All monitoring bores	N/A	0.0034 ²
Dissolved mercury	mg/L	All monitoring bores	N/A	0.006 ²
Dissolved molybdenum	mg/L	All monitoring bores	0.007	0.010
Dissolved nickel	mg/L	All monitoring bores	0.0020	0.0023
Dissolved selenium	mg/L	All monitoring bores	N/A	0.005 ²
Dissolved uranium	mg/L	All monitoring bores	0.008	0.012
Dissolved zinc	mg/L	All monitoring bores	N/A	0.008 ²
Dissolved fluoride	mg/L	All monitoring bores	N/A	2.4 ²
Nitrate as N (NO ₃)	mg/L	All monitoring bores	0.95	1.79
Cyanide (Free)	mg/L	All monitoring bores	N/A	0.007 ²
Dissolved barium	mg/L	GW6A and GW9	0.23	0.29
	mg/L	All other monitoring bores, except GW6A and GW9	0.052	0.057
Dissolved manganese	mg/L	GW6A and GW9	N/A	1.9 ²
	mg/L	All other monitoring bores, except GW6A and GW9	0.10	0.12
Cyanide WAD	mg/L	All monitoring bores	For interpretation only	
Major ions (bicarbonate, calcium, chloride, potassium, magnesium, sodium)	mg/L	All monitoring bores	For interpretation only	
Total hardness	mg/L	All monitoring bores	For interpretation only	
Standing water level	m	All monitoring bores	For interpretation only	

¹Where no footnote exists for value in column, this relates to a Site-Specific limit derived using site specific data provided by the environmental authority holder in September 2021.

²Aquatic ecosystem default guideline values, ANZG 2018. Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia.

- C27 Groundwater measured from any compliance bore specified in Table C5 – Groundwater Monitoring Locations and Frequency must not exceed the corresponding Limit A specified in Table C6 – Groundwater quality limits on any five consecutive sampling occasions.
- C28 Groundwater measured from any compliance bore specified in Table C5 – Groundwater Monitoring Locations and Frequency must not exceed the corresponding Limit B specified in Table C6 – Groundwater quality limits on any three consecutive sampling occasions.
- C29 The environmental authority holder must ensure that groundwater quality is improved when measured in operational bore specified in Table C5 – Groundwater Monitoring Locations and Frequency.

Groundwater Monitoring Program

- C30 By 16 February 2022 or prior to mining activities commence, a Groundwater Monitoring Program must be developed, documented and implemented by appropriately qualified person/s.
- C31 The Groundwater Monitoring Program required by condition C30 must:
- a) identify potential sources of contamination to groundwater from the activity; and
 - b) ensure that all potential groundwater impacts due to the activity are identified, monitored and mitigated; and
 - c) document sampling and monitoring methodology; and
 - d) ensure that adequate groundwater monitoring and data analysis is undertaken to achieve the following objectives:
 - i. detect any impacts to groundwater levels due to the activity;
 - ii. detect any impacts to groundwater quality due to the activity;
 - iii. determine compliance with condition C10, C15, C18, C21, C22 and C23;
 - iv. determine trends in groundwater quality;
 - e) include an appropriate quality assurance and quality control program; and
 - f) include a conceptual groundwater model; and
 - g) include a review process to identify improvements to the program that includes addressing any comments provided by the administering authority.
- C32 From 16 February 2022, the Groundwater Monitoring Program must be reviewed on an annual basis by an appropriately qualified person to determine if it continues to meet the requirements stated in condition C31.

Bore Construction and Maintenance and Decommissioning

- C33 The construction, maintenance and decommissioning of groundwater monitoring bores must be undertaken in a manner that:
- a) prevents contaminants entering the groundwater; and
 - b) ensures the integrity of the bores to obtain representative groundwater samples from the target aquifer; and
 - c) maintains the hydrogeological environment within the aquifer.

- C34 A bore drill log must be kept for each compliance, observation and interpretation groundwater monitoring bore which includes:
- a) bore identification reference and geographic coordinate location;
 - b) specific construction information including but not limited to depth of bore, depth and length of casing, depth and length of screening and bore sealing details;
 - c) standing groundwater level and water quality characteristics including physical characteristics and results of laboratory analysis for the possible trigger characteristics;
 - d) lithological data and stratigraphic interpretation by an appropriately qualified person to identify important features associated with groundwater monitoring; and
 - e) target hydrogeological feature of the bore.

Monitoring and reporting

- C35 Monitoring and sampling must be carried out in accordance with written procedures and must address the requirements of the latest version of the following documents unless otherwise approved by the administering authority:
- a) waters and aquatic environments, Monitoring and Sampling Manual: Environmental Protection (Water) Policy, (Department of Environment and Science 2018).
 - b) for groundwater, Groundwater Sampling and Analysis – A Field Guide (2009:27 GeoCat#6890.1) and Australian Standard AS/NZS 5667.11:1998 Water quality—Sampling - Part 11: Guidance on sampling of groundwaters;
 - c) for subterranean aquatic fauna, the Guideline for the Environmental Assessment of Subterranean Aquatic Fauna.
- C36 All groundwater monitoring data, plans, programs, and reports are to be submitted to the administering authority via WaTERS.
- C37 A groundwater hydrogeological model must be developed and validated by an appropriately qualified person to determine the pit water level and groundwater level during the operation, end of pit cut back and at the end of mine life.
- C38 All requirements in condition C37 and C39 must be prepared by and summarised in a report format by an appropriately qualified person.
- C39 The water balance model in condition C37 must:
- (a) be validated annually;
 - (b) take into consideration the site's water management to date; and
 - (c) be provided to the administering authority upon request.

END OF CONDITIONS FOR SCHEDULE C

Schedule D - Noise

- D1 Unless otherwise authorised by this environmental authority, noise from the mining activities must not cause environmental harm at any sensitive place or commercial place.
- D2 The holder of this environmental authority must ensure that noise generated by the mining activities does not cause the criteria in Table D1 – Noise limits to be exceeded at a sensitive place or commercial place.

Table D1 – Limit noises for sensitive areas

Noise Level (d(b)A measured as:	Monday to Saturday			Sundays and Public Holidays		
	7am~6pm	6pm~10pm	10pm~7am	9am~6pm	6pm~10pm	10pm~9am
L _{Aeq} , adj, 15 mins	CV = 50 AV = 5	CV = 45 AV = 5	CV = 40 AV = 0	CV = 45 AV = 5	CV = 40 AV = 5	CV = 35 AV = 0
L _{A1} , adj, 15 mins	CV = 55 AV = 10	CV = 50 AV = 10	CV = 45 AV = 5	CV = 50 AV = 10	CV = 45 AV = 10	CV = 40 AV = 5

Notes:

1. CV = Critical Value
2. AV = Adjustment Value
3. bg = background noise level (L_{A90}, adj, 15 mins) measured over 3-5 days at the nearest sensitive receptor
4. To calculate noise limits in Table D1:
If $bg \leq (CV - AV)$: Noise limit = $bg + AV$
If $(CV - AV) < bg \leq CV$: Noise limit = CV
If $bg > CV$: Noise limit = $bg + 0$
5. In the event that measured bg (L_{A90}, adj, 15 mins) is less than 30 dB(A), then 30 dB(A) can be substituted for the measured background level
6. If the project is unable to meet the noise limits as calculated above alternative limits may be calculated using the processes outlined in the "Planning for Noise Control" guideline.

Airblast overpressure

- D3 The holder of this environmental authority must ensure that blasting does not cause the limits for peak particle velocity and air blast overpressure in Table D2—Blasting noise limits to be exceeded at a sensitive place or commercial place.

Table D2—Blasting noise limits

Blasting noise limits	Sensitive or commercial blasting noise limits place limits	
	7am to 6pm	6pm to 7am
Airblast overpressure	115 dB (Linear) Peak for 9 out of 10 consecutive blasts initiated and not greater than 120 dB (Linear) Peak at any time	Blasting not permitted
Ground vibration peak particle velocity	5mm/second peak particle velocity for 9 out of 10 consecutive blasts and not greater than 10 mm/second peak particle velocity at any time	

Monitoring and reporting

- D4 When requested by the administering authority, noise monitoring and reporting must be undertaken within a timeframe nominated by the administering authority to investigate any complaint, considered in the opinion of an authorised officer to be neither frivolous or vexatious, at any sensitive place and the results must be provided to the administering authority within fourteen (14) days following completion of monitoring.
- D5 Noise monitoring and recording must include the following descriptor characteristics and matters:
- (a) $L_{AN,T}$ (where N equals the statistical levels of 1, 10 and 90 and T = 15 mins)
 - (b) background noise LA90
 - (c) the level and frequency of occurrence of impulsive or tonal noise and any adjustment and penalties to statistical levels
 - (d) atmospheric conditions including temperature, relative humidity and wind speed and directions
 - (e) effects due to any extraneous factors such as traffic noise
 - (f) location, date and time of monitoring
 - (g) if the complaint received under condition A11 concerns low frequency noise, Max $L_{pLIN,T}$ and one third octave band measurements in dB(LIN) for centre frequencies in the 10 – 200 Hz range.
- D6 A blast monitoring program must be developed by an appropriately qualified person and implemented by the environmental authority holder prior to undertaking blasting activities to ensure compliance with Table D2—Blasting noise limits at any sensitive place or commercial place.
- D7 The method of measurement and reporting of noise levels must comply with the most recent edition of the administering authority's Noise Measurement Manual or the most recent version of AS1055 Acoustics – Description and measurement of environmental noise.

END OF CONDITIONS FOR SCHEDULE D

Schedule E - Waste

- E1 All waste material must be managed and disposed of in a manner that minimises the potential generation and/or release of contaminants to the receiving environment.
- E2 Unless otherwise permitted by the conditions of this environmental authority or with prior approval from the administering authority and in accordance with a relevant standard operating procedure, waste must not be burnt.
- E3 All waste generated from the mining activities must be disposed of at an off-site facility that is lawfully able to accept the waste, with the exception of:
- (a) waste rock generated at the licenced place, which must be disposed of in the waste rock dumps listed in Schedule A - Table A1 – Authorised Mining Activities and Locations and shown in Schedule J – Figure 1 (Project Infrastructure Layout);
 - (b) spent ore generated at the licenced place, which must be disposed of in the Spent Ore Storage Facility (SOSF), listed in Schedule A - Table A1 – Authorised Mining Activities and Locations and shown in Schedule J – Figure 1 (Project Infrastructure Layout);
 - (c) tailings generated at the licenced place, which must be disposed of in the Tailings Storage Facility, listed in Schedule A - Table A1 – Authorised Mining Activities and Locations and shown in Schedule J – Figure 1 (Project Infrastructure Layout); and
 - (d) General waste must only be disposed of into the waste disposal trench facility identified in Schedule A - Table A1 – Authorised Mining Activities and Locations and shown in Schedule J – Figure 1 (Project Infrastructure Layout).

Waste Management Program

- E4 By 16 May 2022, the holder of this environmental authority must develop, document and implement a waste management program for all mining activities at the licenced place.
- E5 The waste management program required under condition E4 must be regularly reviewed and updated at intervals of no greater than five (5) years. The program must include:
- (a) a description of the mining activity that may generate waste; and
 - (b) waste management control strategies including:
 - (i) recording of the types and amounts of wastes generated by the mining activity;
 - (ii) segregation of the wastes;
 - (iii) storage of the wastes;
 - (iv) transport of the wastes;
 - (v) monitoring and reporting matters concerning the waste;
 - (c) the hazard characteristics of the wastes generated including disposal procedures for regulated wastes; and
 - (d) a program for reusing, recycling or disposing of all wastes; and
 - (e) how the waste will be dealt with in accordance with the waste and resource management hierarchy, including a description of the types and amounts of waste that will be dealt with

under each of the waste management practices in the waste management hierarchy (i.e. avoidance, reuse, recycling, energy recovery, disposal); and

- (f) how the waste will be stored, handled and transferred in a proper and effective manner; and
- (g) procedures for identifying and implementing opportunities to minimise the amount of waste generated, promote efficiency in the use of resources and improve the waste management practices employed; and
- (h) procedures for dealing with accidents, spills, and other incidents that may impact on waste management; and
- (i) details of any accredited management system employed, or planned to be employed, to deal with the waste; and
- (j) how often the performance of the waste management practices will be assessed; and
- (k) the indicators or other criteria on which the performance of the waste management practices will be assessed; and
- (l) staff training and induction to the waste management program.

Vat Leach Facility

- E6 Contaminants must not be released from the Vat Leach Facility.
- E7 The design and construction (or reconstruction) of the Vat Leach Facility must be undertaken by an appropriately qualified person and must include, but not be limited to:
- (a) a liner which is chemically compatible with the fluids it will be exposed to;
 - (b) adequate sizing of launders, perimeter drains and containment bunds to prevent the release of contaminants to the receiving environment; and
 - (c) a leak detection system
- E8 The holder of this environmental authority must install, operate and maintain a leak detection system for the Vat Leach Facility.
- E9 The Vat Leach Facility must meet the following hydraulic performance criteria listed in Table E1 – Hydraulic performance criteria for that structure.

Table E1 – Hydraulic performance criteria

Vat Leach Facility	Hydraulic performance criteria		
	Spillway Capacity	Design Storage Allowance (DSA)	Extreme Storm Storage (ESS) Allowance
Vat 1 Vat 2 Pregnant Liquor Solution (PLS) Pond, Barren Liquor Solution (BLS) Pond	1 in 100 AEP to 1 in 1,000 AEP	1:20 AEP	1:10 AEP, 72 hr duration

Vat Leach Facility	Hydraulic performance criteria		
	Spillway Capacity	Design Storage Allowance (DSA)	Extreme Storm Storage (ESS) Allowance
Raw Water Pond (RWP)			

Vat Leach Facility Operational Plan

- E10 Prior to commencement of vat leach operations commencing, the holder of this environmental authority must:
- (a) develop and implement a Vat Leach Facility Operational Plan certified by an appropriately qualified person;
 - (b) undertake a review of the Vat Leach Facility Operational Plan at a minimum frequency of every three (3) years.
- E11 The Vat Leach Facility Operational Plan (as required under condition E10) must address the following:
- (a) regular inspections of the Vat Leach Facility liner and an assessment of its ability to contain contaminants;
 - (b) sizing of launders, perimeter drains and containment bunds to prevent the release of contaminants or potentially contaminated waters;
 - (c) diversion of uncontaminated stormwater away from the Vat Leach Facility and minimising catchment size;
 - (d) procedures to prevent tears and leaks in the liner;
 - (e) contingency plans in the event of the release of contaminants;
 - (f) records of 'as constructed' and design plans, all pipes and infrastructure associated with the Vat Leach Facility operation; and
 - (g) procedures to minimise erosion of the Vat Leach Facility and exclude ore from entering the launders and/or perimeter drains.
 - (h) a monitoring program that is capable of detecting any potential releases of contaminants to the receiving environment.
- E12 All material characterised as having acid forming potential must be removed to a facility that is licensed to accept the material.

Mine Material Management Plan

- E13 By 16 May 2022, the holder of this environmental authority must develop, document and implement a Mine Material Management Plan, which includes:
- (a) a program of progressive sampling to validate pre-mine waste rock characterisation. The waste rock sampling program must include validation of salinity, acidity, alkalinity, dissolved metals, metalloids and non-metallic inorganic substances; and

- (b) geochemical kinetic testing must be conducted to indicate oxidation rates, potential reaction products and effectiveness of control strategies for acid mine drainage and neutral mine drainage potential; and
- (c) records must be maintained of all waste rock characterisation and disposal including contingency planning for the management of acid rock/neutral mine drainage; and
- (d) a materials balance and disposal plan demonstrating how waste rock that has a potential to generate neutral and/or saline mine drainage or is potentially acid forming and acid forming will be selectively placed and/or encapsulated to minimise the generation of acid or neutral mine drainage; and
- (e) how often the performance of the plan will be assessed; and
- (f) waste rock characterisation must be undertaken at a minimum rate of eight (8) regularly spaced samples per 100,000 tonnes of waste rock.

Spent Ore Material Management Plan

- E14 The design and construction of Spent Ore Storage Facility (SOSF) must be undertaken by an appropriately qualified person.
- E15 Spent ore must be managed in accordance with procedures contained within the Mine Material Management Plan required under condition E13. These procedures must include provisions for:
- (a) containment of spent ore in accordance with the approved design plan(s); and
 - (b) the management of liquid waste both during operation and post closure; and
 - (c) the control of fugitive emissions to air; and
 - (d) a program of progressive sampling and characterisation to identify non-acid and acid producing potential and metal concentrations of spent ore that must include:
 - (i) progressive characterisation of all spent ore during disposal for contaminants; and
 - (ii) spent ore characterisation must be undertaken at a minimum rate of eight (8) regularly spaced samples per 100,000 tonnes of spent ore material discharged; and
 - (iii) geochemical kinetic testing where the acid and neutral mine drainage producing potential of spent ore material has not been conclusively determined to indicate oxidation rates, potential reaction products and effectiveness of control strategies; and
 - (e) management of spent ore in order to minimise the potential for environmental harm.

END OF CONDITIONS FOR SCHEDULE E

Schedule F - Land and Rehabilitation

Rehabilitation Requirements

- F1 All exploration activities carried out under this environmental authority must comply with each of the standard environmental conditions contained in the most recent version of the Eligibility criteria and standard conditions for exploration and mineral development projects.
- F2 Land disturbed by mining must be rehabilitated in accordance with Table F1 – Rehabilitation Requirements.

Table F1 – Rehabilitation Requirements

Mine domain	Mine feature name	Rehabilitation goal	Rehabilitation objectives	Indicators	Completion criteria
Voids	Mt Freda Pit Raw Water Dam	Safe	Safe for humans and animal	Structural, geotechnical and hydraulic adequacy Perimeter bunding in place	Geotechnical engineer sign off
		Non-Polluting	No off site environmental harm to surface waters, groundwater or stream sediments	Pit water quality	Monitoring shows consistent compliance with EA limits
		Stable	Pit perimeter geotechnical stability	Structural, geotechnical and hydraulic adequacy	Geotechnical engineer sign off
		Self-sustaining land use	Target post mine land use: Water storage, safe for stock access	Perimeter bunding and stock access	Perimeter bunding and stock access in place Landholder requested infrastructure retained
Hazardous Waste Dams	Tailings Storage Facility	Safe	Safe for humans and animals	Structural, geotechnical and hydraulic adequacy	Dam engineer sign off of safety
		Non-Polluting	Soil Contamination	Surface water, groundwater, stream sediments	Meets NEPM soil and sediment guidelines targets
	Vat Leach Facility (Vats and ponds)		No off site environmental harm to surface waters, groundwater or stream sediments	Technical capping design if necessary to meet completion criteria	Monitoring shows consistent compliance with EA limits Cap design to minimise release of seepage or contaminants to the receiving environment
	Spent Ore Storage Facility (SOSF)	Stable	Minimise soil erosion	Engineered structures to control run off	Surface armour, shedding landform
	¹ Western LGO Stockpile			Soil Cover (total)	Geotechnical engineer sign off >60% of analogue site
	¹ Eastern LGO Stockpile	Self-sustaining land use	Target post mine land use: low intensity grazing	Vegetative ground cover % Persistence of landholder preferred pasture grasses Canopy cover and diversity	>60% of analogue site Targets met for at least 3 consecutive years >60% of analogue site Capability ≥ analogue site

Mine domain	Mine feature name	Rehabilitation goal	Rehabilitation objectives	Indicators	Completion criteria
				Land capability	
Waste Rock Dump	NE WRD NW WRD Plant WRD SE WRD	Safe	Safe for humans and animals	Structural, geotechnical and hydraulic adequacy	Geotechnical engineer sign off
		Non-Polluting	Soil Contamination No off site environmental harm to surface waters, groundwater or stream sediments	Surface water, groundwater, stream sediments Technical capping design if necessary to meet completion criteria	Meets NEPM soil and sediment guidelines targets Monitoring shows consistent compliance with EA limits
		Stable	Minimise soil erosion	Engineered structures to control run off Soil Cover (total)	Surface armour, shedding landform, compliance with Erosion and Sediment Control Plan (ESCP) >60% of analogue site
		Self-Sustaining land use	Target post mine land use: low intensity grazing	Vegetative ground cover % Persistence of landholder preferred pasture grasses Canopy cover and diversity Land capability	>60% of analogue site Targets met for at least 3 consecutive years >60% of analogue site Capability ≥ analogue site

Mine domain	Mine feature name	Rehabilitation goal	Rehabilitation objectives	Indicators	Completion criteria
Infrastructure	Plant areas (mosaic) Run of Mine (ROM)/Crusher Infrastructure (processing plant, fuel Storage/Power/Laydown, camp/office, Magazine) Waste trench/pit Septic leach trench Core storage area	Safe	Safe for humans and animals	Disturbed landforms recontoured to safe slopes	Geotechnical engineer sign off
		Non-Polluting	Soil Contamination No off site environmental harm to surface waters, groundwater or stream sediments	Surface water, groundwater, stream sediments	Meets NEPM soil and sediment guidelines targets Monitoring shows consistent compliance with limits
		Stable	Minimise erosion	Engineered structures to control run off Soil cover (total) Stable batters	Permanent clean water diversions in place Landform and stormwater management as per erosion and sediment control plan (ESCP) >60% of analogue site Capability ≥ analogue site
		Self-sustaining land use	Target post mine land use: low intensity grazing	Landholder requested infrastructure Vegetative ground cover % Persistence of landholder preferred pasture grasses Canopy cover and diversity Land Capability	Landholder requested infrastructure retained >60% of analogue site Targets met for at least 3 consecutive years >60% of analogue site Capability ≥ analogue site
Exploration Areas	'Evening Star'	Safe	Safe for humans and animals	Disturbed landforms recontoured to safe slopes	Bore holes capped, costeans backfilled and reprofiled
Roads Access and Tracks	Drill pads, costeans and tracks	Non-polluting	No off site environmental harm to surface waters, groundwater or stream sediments	Surface water and stream sediments	Landholder requested infrastructure retained
Topsoil Stockpiles	Access Tracks				Sediment and erosion controls in place as per ESCP
Water Management	On Lease Haul Rd Topsoil Stockpiles 1, 2, 3, 4 Sediment Ponds 1, 2, 3, 4, 5, 6, 7				Meets NEPM soil and sediment guidelines; targets Monitoring show consistent compliance with limits

Mine domain	Mine feature name	Rehabilitation goal	Rehabilitation objectives	Indicators	Completion criteria
		Stable	Minimise erosion	Soil Cover (total) Stable batters	>60% of analogue Permanent clean water diversions and sediment and erosion controls in place as per ESCP
		Self-sustaining land use	Target post mine land use: low intensity grazing	Landholder requested infrastructure Vegetative ground cover % Persistence of landholder referred pasture grasses Canopy cover and diversity Land Capability	Landholder requested infrastructure retained >60% of analogue site Targets met for at least 3 consecutive years >60% of analogue site Capability ≥ analogue site

¹The western and eastern low grade ore stockpiles are located where the ROM/crusher and Vats 1 and 2 will be located.

F3 Rehabilitation must commence progressively.

Contaminated Land

F4 Before applying for surrender of a mining lease, the holder must (if applicable) provide to the administering authority a site investigation report under the Act, in relation to any part of the mining lease which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of that report to ensure that the land is suitable for its final land use.

F5 Before applying for progressive rehabilitation certification for an area, the holder must (if applicable) provide to the administering authority a site investigation report under the Act, in relation to any part of the area the subject of the application which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of that report to ensure that the land is suitable for its final land use under condition F1.

F6 Minimise the potential for contamination of land by hazardous contaminants.

Chemical and flammable or combustible liquids

F7 Spillage of all chemicals, waste oils and flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm.

F8 All piping and infrastructure associated with the loading and unloading of all flammable and combustible liquids must be designed, constructed and maintained in accordance with the latest edition of the Australian Standard AS1940—*The storage and handling of flammable and combustible liquids*.

- F9 The storage and handling of sodium cyanide must be in accordance with the latest edition of Australian Standard AS NZS4452: 1997 - *The storage and handling of toxic substances*.
- F10 All waste materials, explosives, hazardous chemicals, corrosive substances, toxic substances, gases and dangerous goods must be stored and handled in accordance with the relevant Australian standard. Where no relevant Australian Standard exists, all materials must be stored within an effective on-site containment system that prevents contamination of land or waters.

Topsoil

- F11 The holder of this environmental authority must ensure that:
- (a) topsoil is removed and stockpiled prior to carrying out any activity; and
 - (b) measures are implemented to ensure that the mixing and erosion of topsoil stockpiles is prevented; and
 - (c) a topsoil inventory is maintained and provide to the administering authority on request.

END OF CONDITIONS FOR SCHEDULE F

Schedule G - Nature Conservation

Impacts to Prescribed Environmental Matters

- G1 Significant residual impacts to prescribed environmental matters are not authorised under this environmental authority or the *Environmental Offsets Act 2014*.
- G2 Records demonstrating that each impact to a prescribed environmental matter did not, or is not likely to, result in a significant residual impact to that matter must be:
- a) completed by an appropriately qualified person; and
 - b) kept for the life of the environmental authority.

END OF CONDITIONS FOR SCHEDULE G

Schedule H - Regulated Structures

Assessment of consequence category

- H1 An application to amend this environmental authority must be lodged with the administering authority within thirty (30) days of:
- a) completion of construction of a new regulated dam; or
 - b) augmentation to existing dams; or
 - c) where the details recorded in Table H1 are no longer accurate.
- H2 The consequence category of any structure must be assessed by a suitably qualified and experienced person in accordance with the latest edition of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)* at the following times:
- d) prior to the design and construction of the structure; or
 - e) prior to any change in its purpose or the nature of its stored contents.
- H3 A consequence assessment report and certification must be prepared for each structure assessed and the report may include a consequence assessment for more than one structure.
- H4 Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)*.

Design and construction of a regulated structure

- H5 All regulated structures must be designed by, and constructed under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)*.
- H6 Construction of a regulated structure is prohibited unless:
- (a) the holder has submitted a consequence category assessment report and certification to the administering authority; and
 - (b) certification for the design, design plan and the associated operating procedures has been certified by a suitably qualified and experienced person in compliance with the relevant conditions of this authority.
- H7 Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*.
- H8 Regulated structures must:
- (a) be designed, constructed and operated in accordance with the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)*; and
 - (b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of:
 - (i) floodwaters from entering the regulated dam from any watercourse or drainage line;

- (ii) wall failure due to erosion by floodwaters arising from any watercourse or drainage line;
- (iii) have the floor and sides of the dam designed and constructed to prevent or minimise the passage of the wetting front and any entrained contaminants through either the floor or sides of the dam during the operational life of the dam and for any period of decommissioning and rehabilitation of the dam; and
- (c) meet the hydraulic performance criteria stated in Table H1—Hydraulic performance criteria for regulated structures.

Table H1—Hydraulic performance criteria for regulated structures

Name of Regulated Structure	Spillway Capacity AEP	Design Storage Allowance AEP	Mandatory Reporting Level AEP
TBA ¹	TBA ¹	TBA ¹	TBA ¹
TBA ¹	TBA ¹	TBA ¹	TBA ¹
TBA ¹	TBA ¹	TBA ¹	TBA ¹

Notes:

¹. If required, to be provided to the administering authority as part of an amendment application to the environmental authority.

- H9 Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, that meets the requirements for certifications under the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)* and state that;
- a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure; and
 - b) construction of the regulated structure in accordance with the design plan.

Notification of affected persons

- H10 All affected persons must be provided with a copy of the emergency action plan in place for each regulated structure:
- a) prior to the operation of the new regulated structure; and
 - b) if the emergency action plan is amended, within 5 business days of it being amended.

Operation of a regulated structure

- H11 Operation of a regulated structure is prohibited unless the holder of this environmental authority has submitted to the administering authority in respect of regulated structure, all of the following:
- (a) one paper copy and one electronic copy of the design plan and certification of the 'design plan', and
 - (b) a set of 'as constructed' drawings and specifications, and
 - (c) certification of the 'as constructed drawings and specifications' in accordance with condition H9, and

- (d) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan.
- (e) the requirements of this authority relating to the construction of the regulated structure have been met; and
- (f) there is a current operational plan for the regulated structures.

H12 Operation of any regulated structure, is prohibited unless:

- (a) the details of the structure are listed in Table H1—Hydraulic performance criteria for regulated structures; and
- (b) there is a current operational plan for the regulated structure.

H13 Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in compliance with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.

Mandatory Reporting Level

H14 Conditions H15 to H16 inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.

H15 The Mandatory Reporting Level (the MRL) must be marked on a regulated dam in such a way that during routine inspections of that dam, it is clearly observable.

H16 The holder of this environmental authority must, as soon as practical and within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.

H17 The holder of this environmental authority must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated structure.

Design storage allowance

H18 The holder of this environmental authority must assess the performance of each regulated structure or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated structure or linked containment system taken prior to 1 July of each year.

H19 By 1 November of each year, storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the Design Storage Allowance (DSA) volume for the dam (or network of linked containment systems).

H20 The holder of this environmental authority must notify the administering authority, within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not meet the Design Storage Allowance by 1 November of any year.

H21 If the holder of this environmental authority immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.

Annual inspection report

- H22 Each regulated structure must be inspected by 1 November each calendar year by a suitably qualified and experienced person.
- H23 At each annual inspection required under condition H22, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include recommended actions to ensure the integrity of the regulated structure or a positive statement that no recommendations are required.
- H24 The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)*.
- H25 The holder of this environmental authority must within twenty (20) business days of receipt of the annual inspection report, provide to the administering authority:
- a) The recommendations section of the annual inspection report; and
 - b) If applicable, any actions being taken in response to those recommendations; and
 - c) If, following receipt of the recommendations and (if applicable) actions, the administering authority requests a copy of the annual inspection report from the holder, provide this to the administering authority within 10 business days of receipt of the request.

Transfer Arrangements

- H26 The holder of this environmental authority must provide a copy of any reports, documentation and certifications prepared under this environmental authority, including but not limited to consequence category assessment, design plan and supporting documentation relating to regulated structures, to a new holder on transfer of this authority.

Decommissioning and rehabilitation

- H27 Regulated structures must not be abandoned but be either:
- (a) decommissioned and rehabilitated to achieve compliance with condition H29; or
 - (b) be left in-situ for a use by the landholder provided that:
 - (i) it no longer contains contaminants that will migrate into the environment; and
 - (ii) it contains water of a quality that is demonstrated to be suitable for its intended use(s); and
 - (c) the environmental authority holder and the landholder agree in writing that the:
 - (i) dam will be used by the landholder following the cessation of the environmentally relevant activity(ies); and
 - (ii) landholder is responsible for the dam, on and from an agreed date.
- H28 Before surrendering this environmental authority the site must be rehabilitated to achieve a safe, stable, non-polluting landform in accordance with Table F1 – Rehabilitation Requirements.

END OF CONDITIONS FOR SCHEDULE H

Schedule I - Definitions

Words and phrases used throughout this environmental authority are defined below. Where a definition for a term used in this environmental authority is not provided within this environmental authority, but is provided in the EP Act 1994 or subordinate legislation, the definition in the EP Act or subordinate legislation must be used.

‘Acid rock drainage’ means any contaminated discharge emanating from a mining activity formed through a series of chemical and biological reactions, when geological strata is disturbed and exposed to oxygen and moisture.

‘Administering Authority’ is the agency that administers the environmental authority provisions under the *Environmental Protection Act 1994*.

‘Affected person’ is someone whose drinking water can potentially be impacted as a result of discharges from a dam or their life or property can be put at risk due to dwellings or workplaces being in the path of a dam break flood.

‘Airblast overpressure (or airblast level)’ is the energy transmitted from the blast site within the atmosphere in the form of pressure waves. As these waves pass a given position, the pressure of the air rises very rapidly then falls more slowly then returns to the ambient value after a number of oscillations. The pressure wave consists of both audible (noise) and inaudible (concussion) energy. The maximum excess pressure in this wave is known as the peak air overpressure, generally measured in decibels using the linear frequency-weighting.

‘Annual exceedance probability or AEP’ the probability that at least one event in excess of a particular magnitude will occur in any given year.

‘Annual inspection report’ means an assessment prepared by a suitably qualified and experienced person containing details of the assessment against the most recent consequence assessment report and design plan (or system design plan);

- a) against recommendations contained in previous annual inspections reports;
- b) against recognised dam safety deficiency indicators;
- c) for changes in circumstances potentially leading to a change in consequence category;
- d) for conformance with the conditions of this authority;
- e) for conformance with the ‘as constructed’ drawings;
- f) for the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year, of accumulated sediment, state of the containment barrier and the level of liquids in the dam (or network of linked containment systems);
- g) for evidence of conformance with the current operational plan.

‘ANZG (2018)’ means Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2018). Published by the Australian and New Zealand Governments and Australian state and territory governments or any equivalent update/replacement guidelines.

‘Appropriately qualified person’ means a person who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis on performance relating to the subject matter using the relevant protocols, standards, methods or literature.

“Assessed or assessment” by a suitably qualified and experienced person in relation to a consequence assessment of a dam, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit of the assessment:

- a) exactly what has been assessed and the precise nature of that determination;
- b) the relevant legislative, regulatory and technical criteria on which the assessment has been based;
- c) the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and
- d) the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

‘Associated works’ in relation to a dam, means:

- a) operations of any kind and all things constructed, erected or installed for that dam; and
- b) any land used for those operations.

‘Authorised activity’ for a mining tenement is an activity that its holder is, under this Act or the tenement, entitled to carry out in relation to the tenement.

‘Authority’ means environmental authority (mining activities) under the *Environmental Protection Act 1994*.

‘Blasting’ means the use of explosive materials to fracture:

- a) rock, coal and other minerals for later recovery, or
- b) structural components or other items to facilitate removal from a site or for reuse.

‘Certification, Certifying or Certified’ by an appropriately qualified and experienced person in relation to a design plan or an annual report regarding dams/structures, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit at any time:

- a) exactly what is being certified and the precise nature of that certification
- b) the relevant legislative, regulatory and technical criteria on which the certification has been based
- c) the relevant data and facts on which the certification has been based, the source of that material, and the efforts made to obtain all relevant data and facts
- d) the reasoning on which the certification has been based using the relevant data and facts, and the relevant criteria.

Chemical’ means:

- a) an agricultural chemical product or veterinary chemical product within the meaning of the *Agricultural and Veterinary Chemicals Code Act 1994* (Commonwealth), or
- b) a dangerous good under the Australian Code for the Transport of Dangerous Goods by Road and Rail approved by the Australian Transport Council, or
- c) a lead hazardous substance within the meaning of the Workplace Health and Safety Regulation 1997, or

- d) a drug or poison in the Standard for the Uniform Scheduling of Drugs and Poisons prepared by the Australian Health Ministers' Advisory Council and published by the Commonwealth, or
- e) any substance used as, or intended for use as:
 - (i) a pesticide, insecticide, fungicide, herbicide, rodenticide, nematocide, miticide, fumigant or related product, or
 - (ii) a surface active agent, including, for example, soap or related detergent, or
 - (iii) a paint solvent, pigment, dye, printing ink, industrial polish, adhesive, sealant, food additive, bleach, sanitiser, disinfectant, or biocide, or
 - (iv) a fertiliser for agricultural, horticultural or garden use, or
 - (v) a substance used for, or intended for use for mineral processing or treatment of metal, pulp and paper, textile, timber, water or wastewater, or
 - (vi) manufacture of plastic or synthetic rubber.

'Commercial place' means a workplace used as an office or for business or commercial purposes, which is not part of the mining activity and does not include employees' accommodation or public roads.

'Commissioning' means all components of the construction of a structure, such as a tailings storage facility or mine infrastructure area, have been completed.

'Certification' means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*, including design plans, 'as constructed' drawings and specifications, construction, operation or an annual report regarding regulated structures, undertaken in accordance with the Board of Professional Engineers of Queensland Policy Certification by RPEQs (ID: 1.4 (2A)).

'Certifying, certify or certified' have a corresponding meaning as 'certification'.

'Construction or constructed' in relation to a regulated structure includes building a new regulated structure and lifting or otherwise modifying an existing regulated structure, but does not include investigations and testing necessary for the purpose of preparing a design plan.

'Consequence' in relation to a structure as defined, means the potential for environmental harm resulting from the collapse or failure of the structure to perform its primary purpose of containing, diverting or controlling flowable substances.

'Consequence category' means a category, either low, significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*. The relevant category is specified in Table H1—Hydraulic performance criteria for regulated structures

'Contaminants' means any prescribed water contaminants listed under Schedule 9 of the *Environmental Protection Regulations 2008*.

'Dam' means a land-based structure or a void that contains, diverts or controls flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void and associated works.

'Dam crest volume' means the volume of material (liquids and/or solids) that could be within the walls of a dam at any time when the upper level of that material is at the crest level of that dam. That is, the instantaneous maximum volume within the walls, without regard to flows entering or leaving (for example, via spillway).

Design plan is a document setting out how all identified consequence scenarios are addressed in the planned design and operation of a regulated structure.

‘Design storage allowance or DSA’ means an available volume, estimated in accordance with the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* published by the administering authority, must be provided in a dam as at 1 November each year in order to prevent a discharge from that dam to an annual exceedance probability (AEP) specified in that Manual. The applicable DSA for regulated structures authorised under this environmental authority are detailed in Table H1—Hydraulic performance criteria for regulated structures.

‘Designer’ for the purposes of a regulated dam, means the certifier of the design plan for the regulated dam.

‘Development approval’ means a development approval under the *Planning Act 2016* (or under the repealed *Sustainable Planning Act 2009* or *Integrated Planning Act 1997*) in relation to a matter that involves an environmentally relevant activity under the *Environmental Protection Act 1994*.

‘Disturbance’ of land includes:

- a) compacting, removing, covering, exposing or stockpiling of earth
- b) removal or destruction of vegetation or topsoil or both to an extent where the land has been made susceptible to erosion
- c) carrying out mining within a watercourse, waterway, wetland or lake
- d) the submersion of areas by tailings or hazardous contaminant storage and dam/structure walls
- e) temporary infrastructure, including any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be removed after the mining activity has ceased
- f) releasing of contaminants into the soil, or underlying geological strata.

However, the following areas are not included when calculating areas of ‘disturbance’:

- a) areas off lease (e.g. roads or tracks which provide access to the mining lease)
- b) areas previously disturbed which have achieved the rehabilitation outcomes
- c) by agreement with the administering authority, areas previously disturbed which have not achieved the rehabilitation objective(s) due to circumstances beyond the control of the mine operator (such as climatic conditions)
- d) areas under permanent infrastructure. Permanent infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be left by agreement with the landowner
- e) disturbance that pre-existed the grant of the tenure.

‘dB (Linear) Peak’ is the maximum reading in decibels (dB) in Linear scale (Z) or unfiltered; obtained using the “P” time – weighting characteristic as specified in AS 1259.1 – 1990 with all frequency weighted networks inoperative.

‘EC’ means electrical conductivity.

‘Environmental authority holder’ means the holder of an environmental authority issued under section 195 that approves an environmentally relevant activity applied for in an application or any others works conducted by a another entity on the approved leases.

‘Environmental offset’ has the meaning in section 7 of the *Environmental Offsets Act 2014*.

‘Emergency action plan’ means documentation forming part of the operational plan held by the holder or a nominated responsible officer, that identifies emergency conditions that sets out procedures and actions that will be followed and taken by the dam owner and operating personnel in the event of an emergency. The actions are to minimise the risk and consequences of failure, and ensure timely warning to affected persons and the implementation of protection measures. The plan must require dam owners to annually review and update contact information where required.

‘Extreme Storm Storage’ means a storm storage allowance determined in accordance with the criteria in the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* published by the administering authority.

‘Flowable substance’ means matter or a mixture of materials which can flow under any conditions potentially affecting that substance. Constituents of a flowable substance can include water, other liquids fluids or solids, or a mixture that includes water and any other liquids fluids or solids either in solution or suspension.

‘General waste’ means:

- a) Construction wastes and demolition waste;
- b) Solid inert waste;
- c) Putrescible wastes and domestic garbage;
- d) Green wastes; and
- e) General recyclable wastes, consisting of paper, cardboard, recyclable plastics, glass, aluminium, and steel cans.

Note:

- *Paper covered plasterboard must only be received at the approved place if it is generated by construction and demolition activities and delivered to the approved place as part of a mixed load of materials;*
- *Drums containing any residual regulated wastes are themselves a regulated waste and must not be accepted for disposal at the approved place unless they have been triple rinsed or thoroughly cleaned.*

‘Hazard category’ means a category, either low significant or high, into which a dam is assessed as a result of the application of tables and other criteria in *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*.

‘Hazardous waste’ means a contaminant that, if improperly treated, stored, disposed of or otherwise managed, is likely to cause environmental harm because of—

- a) its quantity, concentration, acute or chronic toxic effects, carcinogenicity, teratogenicity, mutagenicity, corrosiveness, explosiveness, radioactivity or flammability; or
- b) its physical, chemical or infectious characteristics.

‘Holder’, for a mining tenement, means a holder of the tenement under the *Mineral Resources Act 1989*, and the holder of the associated environmental authority under the *Environmental Protection Act 1994*.

‘Hydraulic performance’ means the capacity of a regulated dam to contain or safely pass flowable substances based on the design criteria specified for the relevant consequence category in the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*.

‘Infrastructure’ means water storage dams, levees, roads and tracks, buildings and other structures built for

the purpose of the mining activity.

‘Land’ in the ‘land schedule’ of this document means land excluding waters and the atmosphere, that is, the term has a different meaning from the term as defined in the *Environmental Protection Act 1994*. For the purposes of the *Acts Interpretation Act 1954*, it is expressly noted that the term ‘land’ in this environmental authority relates to physical land and not to interests in land.

‘Land use’ means the selected post mining use of the land, which is planned to occur after the cessation of mining operations.

‘Licensed place’ means the mining activities carried out at the mining tenements detailed in this environmental authority.

Levee means an embankment that only provides for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from releases from other works, during the progress of those stormwater or flood flows or those releases; and does not store any significant volume of water or flowable substances at any other times.

‘Low consequence dam’ means any dam that is not a high or significant consequence category as assessed using the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*.

‘Mandatory reporting level or MRL’ means a warning and reporting level determined in accordance with the criteria in the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* published by the administering authority.

‘Manual’ means the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* published by the administering authority, as amended from time to time.

‘Measures’ includes any measures to prevent or minimise environmental impacts of the mining activity such as bunds, silt fences, diversion drains, capping, and containment systems.

‘Mine waste’ includes any waste produced from mining activities and includes but is not limited to spoil, overburden, waste rock and tailings.

‘Minimum’ means that the measured value of the quality characteristic or contaminant must not be less than the release limit stated.

‘Minimise’ is to reduce to the smallest possible amount or degree.

‘Modification or modifying’ (see definition of ‘construction’)

‘Operational plan’ in relation to regulated structures must include:

- (a) normal operating procedures and rules (including clear documentation and definition of process inputs in the DSA);
- (b) contingency and emergency action plans including operating procedures designed to avoid and/or minimise environmental impacts including threats to human life resulting from any overtopping or loss of structural integrity of the regulated structure.

‘Peak particle velocity’ is a measure of ground vibration magnitude and is the maximum instantaneous particle velocity at a point during a given time interval in mms⁻¹. (Peak particle velocity can be taken as the vector sum of the three component particle velocities in mutually perpendicular directions).

‘Potentially acid forming (PAF) waste rock’ means potentially acid forming waste rock and includes any mined material with the potential for net generation of acidity; where there is uncertainty regarding the materials acid-forming potential, it must be treated as PAF waste rock until demonstrated otherwise.

‘Prescribed environmental matters’ has the meaning in section 10 of the *Environmental Offsets Act 2014*, limited to the matters of State environmental significant listed in schedule 2 of the Environmental Offsets Regulation 2014.

‘Progressive Rehabilitation’ means Rehabilitation (defined below) undertaken progressively or a staged approach to Rehabilitation as mining operations are ongoing.

‘Protected area’ means – a protected area under the *Nature Conservation Act 1992*, or

- a) marine park under the *Marine Parks Act 1992*, or
- b) a World Heritage Area.

‘Range’ means that the measured value of the quality characteristic or contaminant must not be greater than the higher release limit stated nor lower than the lower release limit stated.

‘Receiving environment’ in relation to an activity that causes or may cause environmental harm, means the part of the environment to which the harm is, or may be, caused. The receiving environment includes (but is not limited to):

- a) a watercourse
- b) groundwater
- c) an area of land that is not specified in Schedule A – Table A1 – Authorised Mining Activities and Locations of this environmental authority.

The term does not include land that is specified in Schedule A – Table A1 – Authorised Mining Activities and Locations of this environmental authority.

‘Receiving waters’ means the waters of the receiving environment.

‘Regulated structure’ means any structure in the significant or high consequence category as assessed using the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* published by the administering authority. A regulated structure does not include:

- a fabricated or manufactured tank or container, designed and constructed to an Australian Standard that deals with strength and structural integrity of that tank or container;
- a sump or earthen pit used to store residual drilling material and drilling fluid only for the duration of drilling and well completion activities;
- a flare pit.

‘Rehabilitation’ the process of reshaping and revegetating land to restore it to a stable landform.

‘Release event’ means a surface water discharge from mine affected water storages or contaminated areas on the licensed place.

‘Representative’ means a sample set which covers the variance in monitoring or other data either due to natural changes or operational phases of the mining activities.

‘RL’ means reduced level, relative to mean sea level as distinct from depths to water.

‘Saline Drainage’ The movement of waters, contaminated with salts, as a result of the mining activity.

‘Self-sustaining’ means not requiring on-going intervention and maintenance to maintain functional riverine processes and characteristics

‘Sensitive place’ means:

- a) a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises, or
- b) a motel, hotel or hostel, or
- c) an educational institution, or
- d) a medical centre or hospital, or
- e) a protected area under the Nature Conservation Act 1992, the Marine Parks Act 1992 or a World Heritage Area, or
- f) a public park or gardens.

Note: The definition of ‘sensitive place’ and ‘commercial place’ is based on Schedule 1 of EPP Noise. That is, a sensitive place is inside or outside on a dwelling, library and educational institution, childcare or kindergarten, school or playground, hospital, surgery or other medical institution, commercial & retail activity, protected area or an area identified under a conservation plan under *Nature Conservation Act 1992* as a critical habitat or an area of major interest, marine park under *Marine Parks Act 2004*, park or garden that is outside of the mining lease and open to the public for the use other than for sport or organised entertainment. A commercial place is inside or outside a commercial or retail activity.

A mining camp (i.e., accommodation and ancillary facilities for mine employees or contractors or both, associated with the mine the subject of the environmental authority) is not a sensitive place for that mine or mining project, whether or not the mining camp is located within a mining tenement that is part of the mining project the subject of the environmental authority. For example, the mining camp might be located on neighbouring land owned or leased by the same company as one of the holders of the environmental authority for the mining project, or a related company. Accommodation for mine employees or contractors is a sensitive place if the land is held by a mining company or related company, and if occupation is restricted to the employees, contractors and their families for the particular mine or mines which are held by the same company or a related company.

For example, a township (occupied by the mine employees, contractors and their families for multiple mines that are held by different companies) would be a sensitive place, even if part or all of the township is constructed on land owned by one or more of the companies.

‘Significant residual impact’ has the meaning in section 8 *Environmental Offsets Act 2014*.

‘Stable’ means geotechnical stability of the rehabilitated landform where instability related to the excessive settlement and subsidence caused by consolidation/settlement of the wastes deposited, and sliding/slumping instability has ceased.

“Stormwater” means all surface water runoff from rainfall.

‘Spillway’ means a weir, channel, conduit, tunnel, gate or other structure designed to permit discharges from the dam, normally under flood conditions or in anticipation of flood conditions.

‘Structure’ means dam or levee.

‘Suitably qualified and experienced person’ means a person who is a Registered Professional Engineer of Queensland under the provisions of the Professional Engineers Act 2002, who has an appropriate level of expertise in the structures, geomechanics, hydrology, hydraulics and environmental impact of watercourse diversions.

An **appropriate level of expertise** includes:

- demonstrable competency, experience and expertise in:
 - o investigation, design or construction of watercourses diversions
 - o operation and maintenance of watercourse diversions

- geomechanics with particular emphasis on channel equilibrium, geology and geochemistry
- hydrology with particular reference to flooding, estimation of extreme storms, water management or meteorology
- hydraulics with particular reference to sediment transport and deposition and erosion control
- hydrogeology with particular reference to seepage and groundwater
- solute transport processes and monitoring thereof, or
- sufficient knowledge and experience to certify that where the suitably qualified and experienced person has relied on advice and information provided by other persons with relevant expertise*:
- they consider it reasonable to rely on that advice and information
- the expert providing the advice and information has knowledge, competency, suitable experience and demonstrated expertise in the matters related to watercourse diversions.

Persons with relevant expertise include:

- Geomorphologist: person who has demonstrated competency and relevant experience in stream geomorphology and watercourse diversions.
- Geotechnical Expert: person who has demonstrated competency and relevant experience in geotechnical assessment of soil characteristics suitable for watercourse diversions.
- Vegetation Expert: person who has demonstrated competency and relevant experience in the identification, role and function of vegetation with watercourses and adjoining floodplains, and has demonstrated competency and relevant experience in revegetation of watercourse diversions and adjoining floodplains. .
- Groundwater Expert: person who has demonstrated competency and relevant experience in groundwater systems.
- Surface Water Expert: person who has demonstrated competency and relevant experience in hydrology.
- Engineer: person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the Professional Persons Act 2002 or has similar qualifications under a respected professional registration association, and has demonstrated competency and relevant experience in design and construction of watercourse diversions.
- Soils Expert: person who has demonstrated competency and relevant experience in soil classification including the physical, chemical and hydrologic analysis of soil.

‘System design plan’ means a plan that manages an integrated containment system that shares the required DSA and/or ESS volume across the integrated containment system.

‘the Act’ means the *Environmental Protection Act 1994*

‘μS/cm’ means micro siemens per centimetre.

‘Void’ means any constructed, open excavation in the ground.

‘Water’ is defined under Schedule 4 of the *Water Act 2000*.

‘Watercourse’ has the same meaning given in the *Water Act 2000*.

‘Water quality’ means the chemical, physical and biological condition of water.

‘Waters’ includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined

natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), storm water channel, storm water drain, and groundwater and any part thereof.

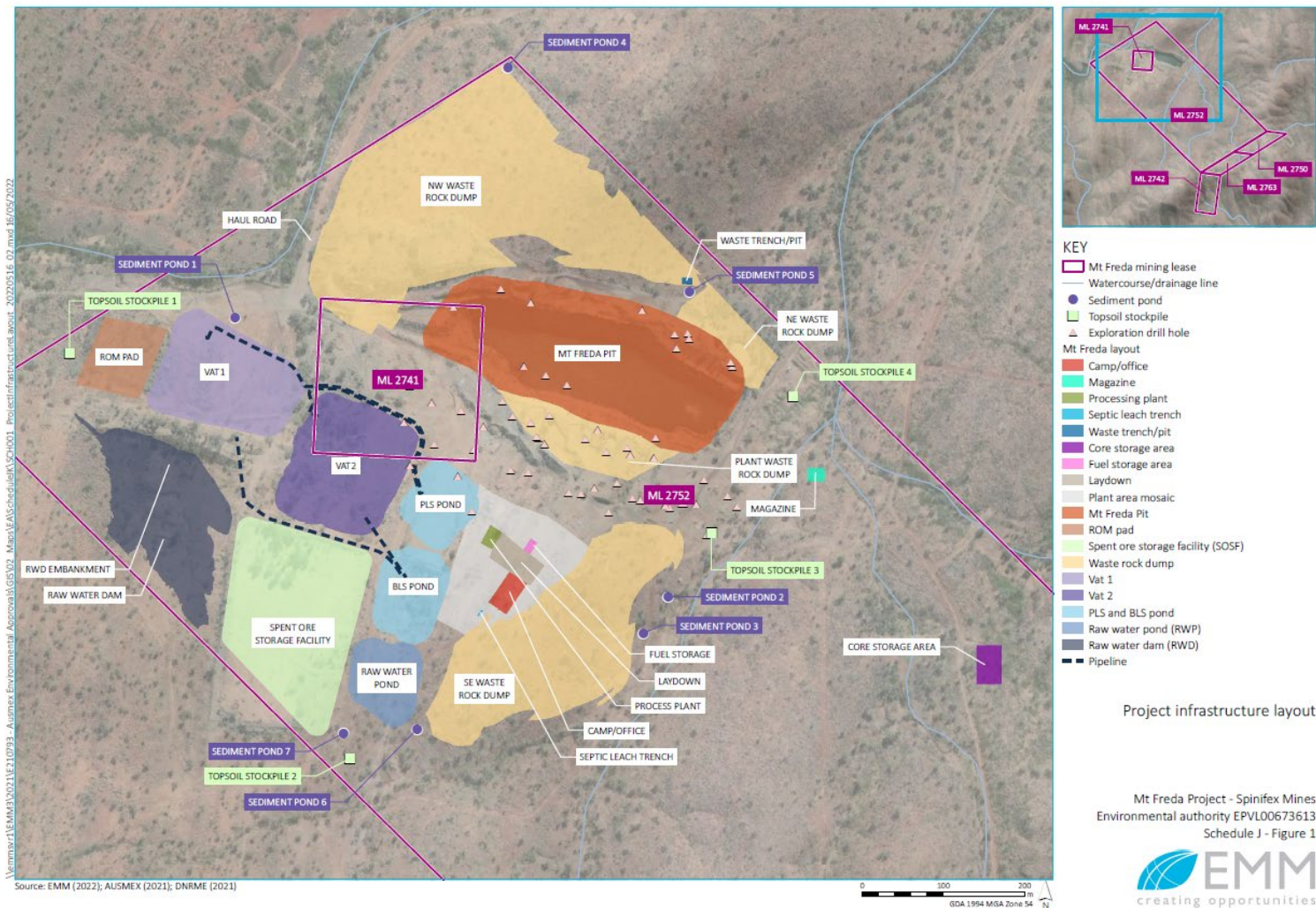
‘WaTERS’ – Water Tracking and Electronic Reporting System or subsequent updated system, used to submit monitoring data and notify the Queensland Government. [<https://waters.des.qld.gov.au/>] or contact psd.help@qld.gov.au

‘Wet season’ means the time of year, covering one or more months, when most of the average annual rainfall in a region occurs. For the purposes of DSA determination this time of year is deemed to extend from 1 November in one year to 31 May in the following year inclusive.

END OF CONDITIONS FOR SCHEDULE I

Schedule J - Locations for Authorised Mining Activities

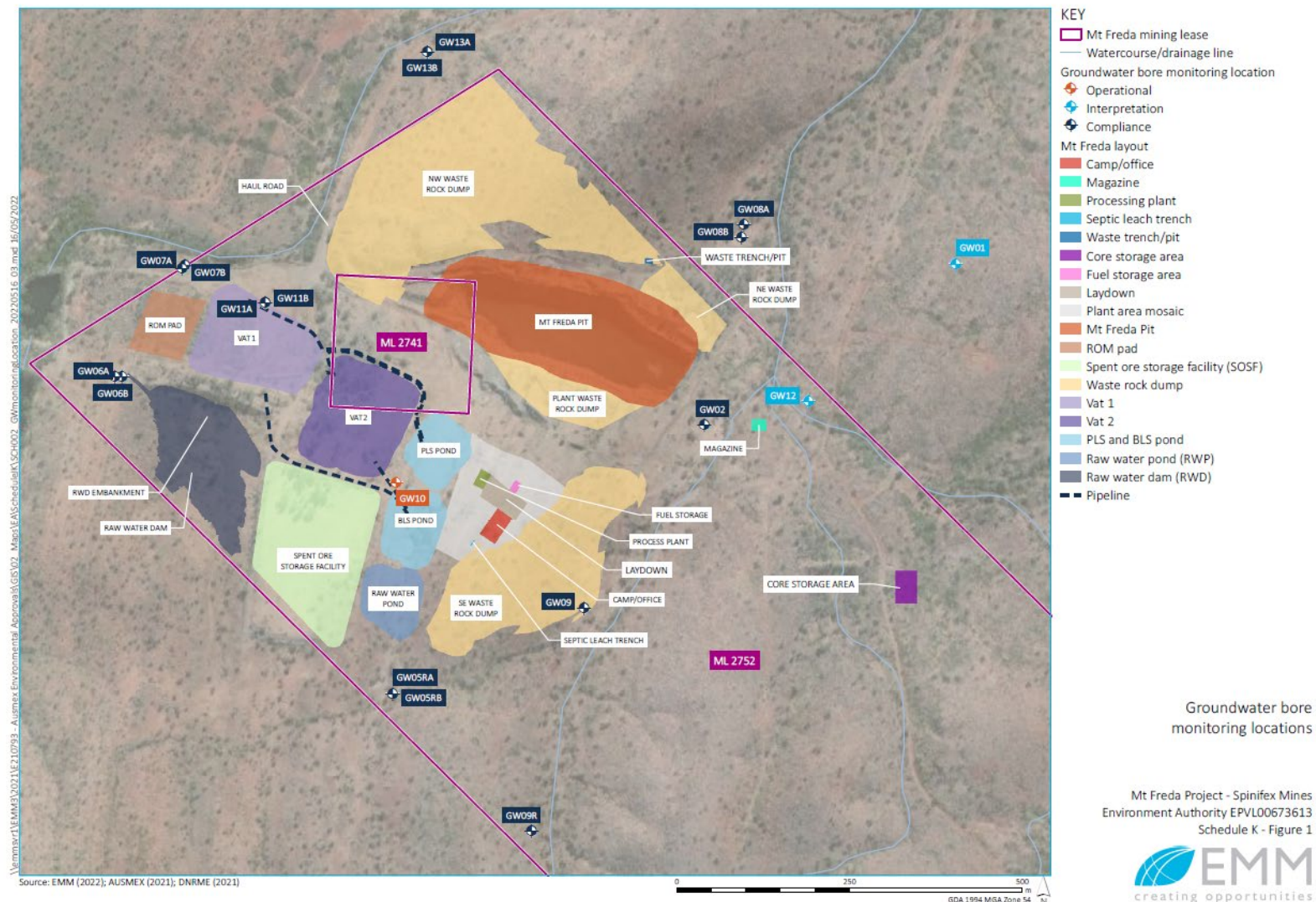
Schedule J – Figure 1 (Project Infrastructure Layout)



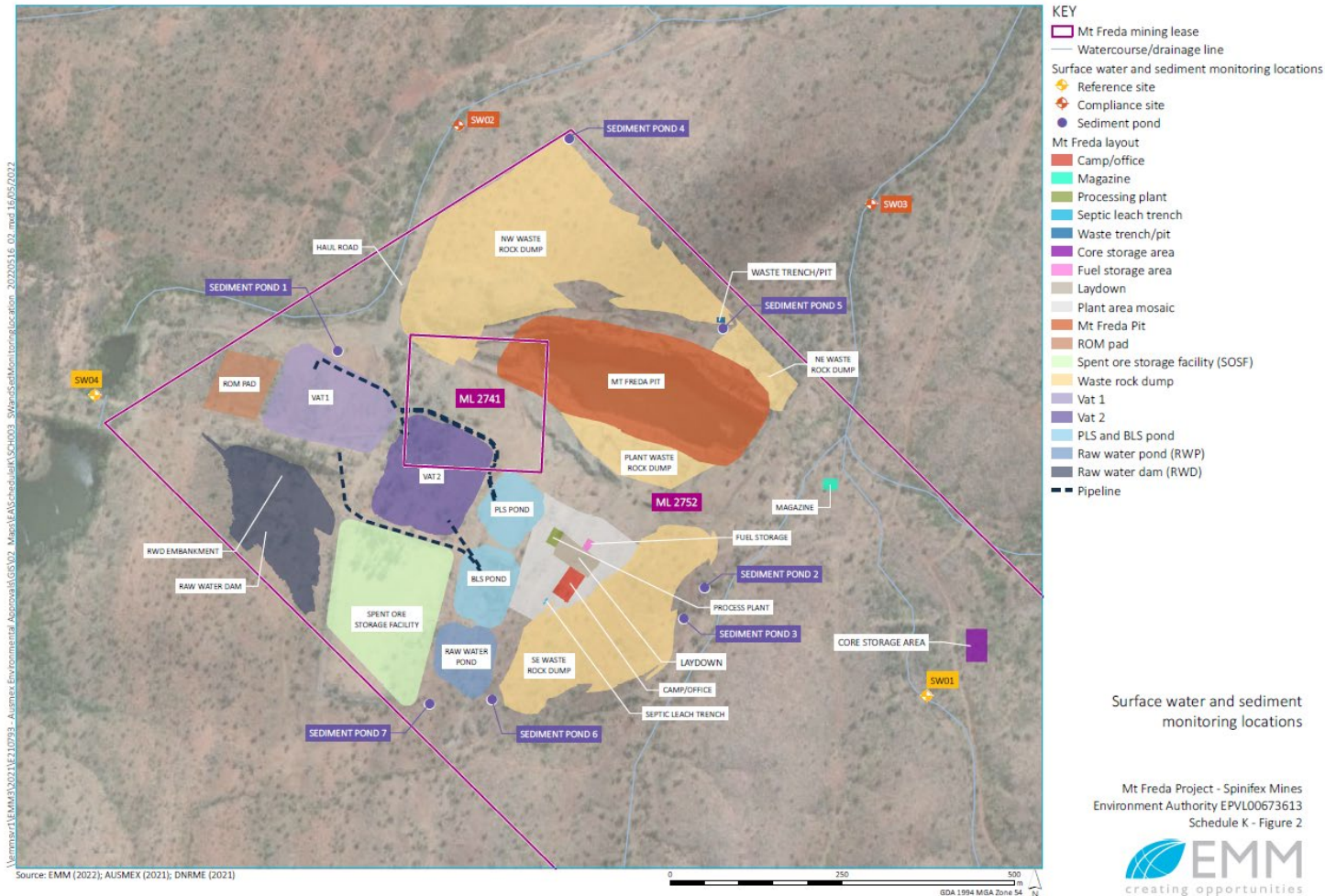
END OF CONDITIONS FOR SCHEDULE J

Schedule K - Monitoring Locations

Schedule K – Figure #1 (Groundwater Bore Monitoring Locations)



Schedule K – Figure #2 (Surface water and sediment monitoring locations)



END OF CONDITIONS FOR SCHEDULE K
END OF ENVIRONMENTAL AUTHORITY