

Permit

Environmental Protection Act 1994

Environmental authority EPML00773613

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

Environmental authority number: EPML00773613

Environmental authority takes effect on 8 April 2022

Environmental authority holder(s)

Name(s)	Registered address
Cromarty Resources Pty Ltd	Level 6 350 Collins Street MELBOURNE VIC 3000 Australia

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Ancillary 31 - Mineral processing 2: Processing, in a year, the following quantities of mineral products, other than coke (b) more than 100,000t	ML10186, ML1531, ML10185, ML10137, ML1392
Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (a-ii) 21 to 100EP otherwise	ML10137, ML1392, ML10186, ML1531, ML10185,
Ancillary 64 - Water treatment 4: Carrying out, in a day, advanced treatment of 5ML or more of water, allowing the release of waste (b) to waters other than seawater	ML1531, ML10185, ML10137, ML1392, ML10186

Environmentally relevant activity/activities	Location(s)
Ancillary 61 - Thermal waste reprocessing and treatment 1: Thermally reprocessing or treating, in a year, the following quantity of general waste- (a) not more than 5,000t	ML1392, ML10186, ML1531, ML10185, ML10137
Schedule 3 17: Mining copper ore	ML1392, ML10186, ML1531, ML10185, ML10137
Schedule 3 18: Mining lead, silver or zinc separately or in any combination	ML1392, ML10186, ML1531, ML10185, ML10137
Non-Scheduled – Mining Activity – Mining Lease (ML)	ML10277

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 *Sustainable Planning Act 2009* 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.

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.



Signature

8 April 2022

Date

Ayla Turner
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

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Date issued: 8 April 2022

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)

Conditions of environmental authority

Part 1 – For ML10277

General

- PG1 The conditions of this environmental authority are in force until surrender of the authority is accepted pursuant to the *Environmental Protection Act 1994*.
- PG2 Financial assurance. The environmental holder is to give the administering authority a financial assurance in the amount and form and at a time required by the administering authority.
- PG3 With the exception of any variations, the conditions of approval of this environmental authority for exploration activities are the standard conditions contained within the *Code of Environmental Compliance for Exploration and Mineral Development Projects* dated January 2001.
- PG4 The environmental authority does not take effect until the grant of tenure to the environmental authority holder, or until each environmental authority has become a holder, under the *Mineral resources Act 1989*, of each relevant mining tenements/
- PG5 With the exception of any variations, the conditions of approval of this environmental authority are the standard conditions contained within the *Code of Environmental Compliance for Mining Lease Projects* dated January 2001.

Agency Interest: Heritage

- PH1 Notwithstanding conditions 14 of the *Code of Environmental Compliance for Exploration and Mineral Development Projects dated January 2001*, the environmental authority holder is authorised to carry out exploration activities on the relevant tenement up to 20m from the historical sites located on the mining tenure.

Schedule A – General
Schedule B – Air
Schedule C – Land
Schedule D – Waste
Schedule E – Noise
Schedule F – Water
Schedule G – Definitions
Schedule H – Maps

Part 2 – for ML1392; ML1531; ML10137; ML10185; ML10186.

SCHEDULE A – GENERAL

Activity

- (A1-1) 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. The environmentally relevant activity(ies) conducted at the location as described above must be conducted in accordance with the following site-specific conditions of approval.
- (A1-2) In carrying out the mining activity, reasonable and practicable measures must be taken to prevent or minimise the likelihood of environmental harm being caused.
- (A1-3) All land subject to mining activities must be rehabilitated to a non-polluting, stable and self-sustaining landform.
- (A1-4) The environmental authority holder must:
- (a) Install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority and the general environmental duty;
 - (b) Maintain such measures, plant and equipment in a proper condition;
 - (c) Operate such measures, plant and equipment in a proper manner; and
 - (d) Ensure that all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority must be calibrated and appropriately operated and maintained.
- (A1-5) Contaminants must not be released to the receiving environment unless they are in accordance with the contaminant limits authorised by this environmental authority.
- (A1-6) Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable to minimise the release of wastes, contaminants or materials to any stormwater drainage system or receiving waters.

Risk management

- (A2-1) The environmental authority holder must prepare a risk management system for mining activities which conforms to the current version of the Australian Standard for Risk Management (AS/NZ 4360) (AS/NZS ISO 31000) and provide it to the administering authority upon request.
- (A2-2) All the elements of the risk management system developed in accordance with condition A3-1 must be documented and implemented including:
- (a) Identification and progressive assessment of the environmental aspects, impacts and key risk scenarios;
 - (b) A register of environmental aspects, impacts and risk;
 - (c) The risk evaluation criteria; and
 - (d) Actions taken to treat the unacceptable risk.
- (A2-3) An emergency response/contingency plan must be developed and implemented to manage the risks identified in the risk management system.
- (A2-4) The emergency response/contingency plan required under condition A3-3 must address the following matters as a minimum:
- (a) Response procedures to be implemented to prevent or minimise the risk of environmental harm arising from incidents;
 - (b) Response procedures to minimise the extent and duration of environmental harm caused by an incident;
 - (c) The practices and procedures to be employed to restore the environment or mitigate any environmental harm caused;
 - (d) The resources to be used in response to an incident;
 - (e) Procedures to investigate the cause of any incidents, including releases, and where necessary, implement remedial actions to reduce the likelihood of recurrence of similar events;
 - (f) The provision and availability of documented procedures to staff attending any incident to enable them to effectively respond;
 - (g) Training of staff that will be called upon to respond to incidents to enable them to effectively respond;
 - (h) Timely and accurate reporting of the circumstance and nature of incidents to the administering authority in accordance with conditions A4-1 to A4-3;
 - (i) Procedures for accessing monitoring points during incidents;
 - (j) Procedures to notify any person who may be affected by the event within 24 hours, with information to be provided at a minimum:
 - (i) The location of the release;
 - (ii) The date and time of the release;
 - (iii) The estimated quantity and type of any substances (if available concentrations) involved in the incident;
 - (iv) The potential impacts to environmental values caused by the release.

Notification

- (A3-1) The authority holder must, as soon as possible (no later than 12 hours) after becoming aware of:
- (a) 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; or
 - (b) Any monitoring result that indicates an exceedance of any environmental authority limit, notify the administering authority of the release by telephone or facsimile.
- (A3-2) The notification must include, but not be limited to, the following:
- (a) The environmental authority number and name of the holder.
 - (b) The name and telephone number of the designated contact person.
 - (c) The location of the emergency or incident.

- (d) The date and time of the incident.
- (e) The time the holder of the environmental authority became aware of the incident.
- (f) The estimated quantity and type of substances involved in the incident.
- (g) The actual or potential cause of the incident.
- (h) A description of the nature and effects of the incident including environmental risks, any risks to public health or livestock
- (i) Immediate actions taken to prevent or mitigate any further environmental harm caused by the release.
- (j) What notification of persons who may be affected by the event has occurred/is being undertaken

(A3-3) Within fourteen (14) days following the initial notification of an emergency or incident, 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.

(A3-4) For any water release event the authority holder must notify the administering authority as soon as possible (no later than 6 hours of having commenced releasing mine affected water to the receiving environment) and provide the following information in writing:

- (a) Release commencement date and time;
- (b) Expected release cessation date and time;
- (c) Release point/s;
- (d) Release volume (estimated);
- (e) Receiving water/s including the natural flow rate; and
- (f) Any details (including available data) regarding likely impacts on the receiving water(s).
- (g) Notification of persons who may be affected by the event has occurred/is being undertaken

Note: Notification to the administering authority must be addressed to the Manager and Project Manager of the local Administering Authority via phone or facsimile.

(A3-5) The authority holder must notify the administering authority as soon as possible (no later within twenty-four (24) hours) of the cessation of a water release and within 28 days provide the following information in writing:

- (a) Release cessation date and time;
- (b) The reason for the release;
- (c) The location of the release;
- (d) Natural flow volume in receiving water;
- (e) Volume of water released;
- (f) All water quality monitoring results;
- (g) Any general observations;
- (h) All calculations;
- (i) Details regarding the compliance of the release with the conditions of Agency Interest: Water of this environmental authority (i.e. contamination limits, natural flow, discharge volume);
- (j) Any other matters pertinent to the water release event.

Complaints

(A4-1) All complaints received about the mining activities must be recorded and include the following details:

- (a) Name, address and contact number for complainant;
- (b) Time and date of complaint;
- (c) Reasons for the complaint;
- (d) Investigations undertaken;
- (e) Conclusions formed;
- (f) Actions taken to resolve complaint; and
- (g) Person responsible for resolving the complaint.

This information must be made available for inspection by the administering authority on request.

- (A4-2) When requested the environmental authority holder must undertake monitoring within a reasonable and practicable timeframe nominated by the administering authority to investigate any potential or actual environmental nuisance at any sensitive place or commercial place, and the results, including an analysis of the results, must be provided to the administering authority within fourteen (14) days of the completion of monitoring.

Records

- (A5-1) Except where specified otherwise in another condition of this environmental authority, all monitoring records or reports required by this environmental authority must be kept for the life of the environmental authority.
- (A5-2) The environmental authority holder must demonstrate that monitoring results have been evaluated and used in the process of continuous improvement.

Third Party Auditing

- (A6-1) Compliance with the conditions of this environmental authority must be audited by a suitably qualified third-party auditor, nominated by the environmental authority holder and accepted by the administering authority once per year.
- (A6-2) The third-party auditor must submit a final version of the auditor's report to the administering authority within twenty-eight (28) days of completing the audit.

END OF CONDITIONS FOR SCHEDULE A

SCHEDULE B - AIR

Odour

- (B1-1) The release of noxious or offensive odour(s) or any other noxious or offensive contaminant(s) must not cause environmental harm at any sensitive or commercial place.
- (B1-2) When requested by the administering authority, odour monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive place, and the results must be notified within 14 days to the administering authority following completion of monitoring.
- (B1-3) If monitoring indicates that condition B1-1 is not being met then the environmental authority holder must:
- (a) Address the complaint including through the use of appropriate dispute resolution measures; and
 - (b) Immediately implement odour abatement measures so that emissions of noxious or offensive odour(s) or any other noxious or offensive airborne contaminant(s) from the activity do not result in further environmental harm.

Dust

- (B2-1) Subject to Conditions (B2-2) and (B2-3) the release of dust or particulate matter or both resulting from the mining activity must not cause an environmental nuisance, at any sensitive or commercial place.
- (B2-2) When requested by the administering authority, dust and particulate monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive place, and the results must be notified within 14 days to the administering authority following completion of monitoring.
- (B2-3) If the environmental authority holder can provide evidence through monitoring that the following limits are not being exceeded then the holder is not in breach of (B2-1):
- (a) Dust deposition of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with AS 3580.10.1 Methods for sampling and analysis of ambient air - Determination of particulates - Deposited matter - Gravimetric method of 1991; and
 - (b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometre (µm) (PM10) suspended in the atmosphere of 150 micrograms per cubic metre over a 24 hour averaging time, at a sensitive place downwind of the operational land, when monitored in accordance with:
 - (i) Particulate matter - Determination of suspended particulate PM10 high-volume sampler with size-selective inlet - Gravimetric method, when monitored in accordance with AS 3580.9.6 Methods for sampling and analysis of ambient air - Determination of suspended particulate matter - PM (sub) 10 high volume sampler with size-selective inlet - Gravimetric method of 1990; or
 - (ii) Any alternative method of sampling PM10, which may be permitted by the 'Air Quality Sampling Manual' as published by the administering authority.

NOTE: You must propose which monitoring method is appropriate in accordance with condition (B2-3) (a) or (b) or both.

- (B2-4) If monitoring indicates exceedance of the relevant limits in Condition (B2-3), then the environmental authority holder must:
- (a) Address the complaint including the use of appropriate dispute resolution if required; or
 - (b) Immediately implement dust abatement measures so that emissions of dust from the activity do not

result in further environmental nuisance.

Meteorological monitoring

- (B3-1) The environmental authority holder shall establish a permanent meteorological station to continuously measure and record wind, temperature and rainfall.

END OF CONDITIONS FOR SCHEDULE B

SCHEDULE C – LAND

(C1-1) Mining activities must comply and be rehabilitated in accordance with Schedule C – Table 1.

Schedule C – Table 1 (Mining activities and rehabilitation objectives)

Mining activities			Rehabilitation Objectives		
Tenure ID	Disturbance type	Maximum Surface area (ha)	Post mine land use and description	Land classification ¹	Analogue site identification
1392	Vomacka Waste Rock Dump (previously the Thalanga Pit)	12.0	Light grazing, disturbed native habitat	<i>Grazing VIII²</i>	Sites to be rehabilitated to a standard nominated in the rehabilitation program developed in accordance with condition C2-1 based on analogue sites.
	U/G Subsidence	9.0	Light grazing, disturbed native habitat	<i>Grazing VIII²</i>	
	Stockpiles/pads	4.0	Light grazing, disturbed native habitat	<i>Grazing VIII²</i>	
	Wetland Treatment Facility/ Waste rock dumps	20.0	Light grazing, disturbed native habitat	<i>Grazing VIII²</i>	
	Roads/tracks	5.0	Light grazing, disturbed native habitat	<i>Grazing VIII²</i>	
	Vomacka Open Pit	15.0	Residual Void	<i>N/A</i>	
1531	West 45 U/G	4.0	Light grazing, disturbed native habitat	<i>Grazing VIII²</i>	
	Far West U/G	TBA ³	Light grazing, disturbed native habitat	<i>Grazing VIII²</i>	
	U/G Subsidence Far West	9.0	Light grazing, disturbed native habitat	<i>Grazing VIII²</i>	
	Plant	13.0	Light grazing, disturbed native habitat	<i>Grazing VIII²</i>	
	Stockpiles/pads	9.0	Light grazing, disturbed native habitat	<i>Grazing VIII²</i>	
	Waste rock dumps	24.0	Light grazing, disturbed native habitat	<i>Grazing VIII²</i>	
	Dams	20.0	Light grazing, disturbed native habitat	<i>Grazing VIII²</i>	
	Roads/tracks	10.0	Light grazing, disturbed native habitat	<i>Grazing VIII²</i>	

	Irrigation area	31.6	Light grazing, disturbed native habitat	<i>Grazing VIII²</i>	
	Far West U/G, box cut & return air vent	0.3	Light grazing, disturbed native habitat	<i>Grazing VIII²</i>	
10137	Roads/tracks	2.5	Light grazing, disturbed native habitat	<i>Grazing VIII²</i>	
	Rail siding	5.0	Light grazing, disturbed native habitat	<i>Grazing VIII²</i>	
10185	Dam	10.0	Light grazing, disturbed native habitat	<i>Grazing VIII²</i>	
	Roads/tracks	2.5	Light grazing, disturbed native habitat	<i>Grazing VIII²</i>	
10186	Tailings Dam	98.0	Light grazing, disturbed native habitat	<i>Grazing VIII²</i>	

¹ Technical guidelines for the Environmental Management of Exploration and Mining in Queensland, 1995.

² Light grazing to be defined in the Rehabilitation Program.

³ Information to be provided by 31 May 2018.

Rehabilitation program

(C2-1) A Rehabilitation Program must be prepared and included in the Plan of Operations and updated with each subsequent Plan of Operations, describing how the rehabilitation objectives in Schedule C-Table 1 will be achieved. The Rehabilitation Program must include:

- (a) Schematic representation of final landform inclusive of drainage features; and
- (b) Slope designs; and
- (c) Cover design; and
- (d) Drainage design; and
- (e) Erosion controls proposed on reformed land; and
- (f) Description of experimental design for monitoring of analogue and rehabilitated areas inclusive of statistical design; and
- (g) Proposed revegetation criteria including:
 - (i) Species diversity, abundance and composition,
 - (ii) Projective cover,
 - (iii) Dry matter production and
 - (iv) Stocking rates to ensure self-sustaining vegetation is maintained; and
- (h) Proposed revegetation methods inclusive of plant species selection, re-profiling, resspreading soil, soil ameliorants/amendments, surface preparation and method of propagation; and
- (i) Materials balance including available topsoil and low permeability encapsulation media for capping; and
- (j) Research program and associated milestones.
- (k) Geotechnical, geochemical and hydrological studies (including water balances);
- (l) Chemical, physical and biological properties of soil and water;
- (m) Measurable completion criteria for each rehabilitation indicator that enables determination of rehabilitation success for each disturbance type; and
- (n) Rehabilitation monitoring program

- (C2-2) Areas that are, or are becoming, available for rehabilitation must be identified in the current Plan of Operations.
- (C2-3) Progressive rehabilitation must be carried out in accordance with the current Plan of Operations.
- (C2-4) Progressive rehabilitation must commence when areas become available within the operational land.

Rehabilitation monitoring program

- (C3-1) The holder of the environmental authority must conduct a Rehabilitation Monitoring Program on a yearly basis, which must include sufficient spatial and temporal replication to enable statistically valid conclusions as established under the rehabilitation program.
- (C3-2) The rehabilitation monitoring plan must be developed and implemented by a person possessing appropriate qualifications and experience in the field of rehabilitation management, nominated by the environmental authority holder and accepted by the administering authority, and the monitoring program design and who is able to competently make recommendations about these matters.

Infrastructure

- (C4-1) All infrastructure, mining equipment and plant erected and/or used for the mining activities must be removed from the mining lease(s) prior to surrender, except where agreed in writing by the administering authority, landowner and the Minister administering the *Mineral Resources Act 1989*.
- (C4-2) Vegetation must be cleared progressively for no more than twelve months prior to mining activities being undertaken on the cleared area.
- (C4-3) Topsoil and subsoils must be separately stripped and stockpiled ahead of mining and used in rehabilitation.
- (C4-4) All exploration activities carried out on the mining leases must comply with each of the Standard Environmental Conditions contained within the most recent version of the *Code of Environmental Compliance for Exploration and Mineral Development Projects*.

Grazing pasture outcome

- (C5-1) Areas that are to be rehabilitated to grazing pasture must comply with the following outcomes;
 - (a) Generate a self-sustaining vegetation with projective cover, species composition and species distribution at the relevant analogue site as identified in the rehabilitation program prepared in accordance with condition C2-1; and
 - (b) All areas disturbed by mining activities must be rehabilitated to a stable landform; and
 - (c) A measure of productivity (e.g. sustainable dry matter production, stock live weight gain) at the relevant analogue site as identified in the rehabilitation program prepared in accordance with condition C2-1.

Residual voids

- (C6-1) All reasonable and practical measures must be taken to minimise the number and size of voids remaining after mining activities cease.
- (C6-2) Residual voids, or the contents of residual voids, must not cause any environmental harm other than the environmental harm caused within the footprint of the residual void itself.

- (C6-3) In accordance with the rehabilitation program developed in condition C2-1 the Thalanga Central open pit must be filled and capped at the completion of activities at the Thalanga site to a final landform that is water shedding.

Abrasive Blasting

- (C7-1) Abrasive blasting and metal surface coating must be carried out inside buildings or spray booths if applicable, so as to contain spent blasting media and other material.
- (C7-2) Open air abrasive blasting and / or spray-painting activities must be carried out in a dedicated area using temporary shrouding, screens, polythene sheeting or other methods to prevent the release of contaminants that may cause a nuisance at any nuisance sensitive or commercial place or contamination of surrounding areas.
NOTE: Refer to the Department of Employment Training and Industrial Relations – Workplace Health and Safety for any safety requirements that may apply to your specific operations.
- (C7-3) Abrasive blasting activities must be carried out using measures that prevent contaminants, including abrasive blasting media, solvents and paint, being released to the receiving environment.
- (C7-4) Abrasive blasting waste consisting of garnet and surface coating wastes consisting of dried mastic paint flakes may be disposed of at the licensed place within the Tailings Storage Facility at the Thalanga site.
- (C7-5) Abrasive blasting and surface coating wastes must be collected, handled, stored and disposed in a manner that will prevent any escape off site.

Chemicals and flammable or combustible liquids

- (C8-1) All petroleum product storage, including associated piping and infrastructure, must be designed, constructed and maintained in accordance with *Australian Standard 1940 - Storage and Handling of Flammable and Combustible Liquids*.
- (C8-2) All chemical storage must be designed, constructed and maintained in accordance with the relevant Australian Standard. Where no relevant Australian Standard is available:
- (a) Chemical storage tanks must be bunded so that the capacity of the bund is sufficient to contain at least 110% of the largest storage tank.
 - (b) Chemical product drum storages must be bunded so that the capacity of the bund is sufficient to contain at least 25% of the maximum design storage volume within the bund.

Structures containing mine waste

- (C9-1) The construction and operation of any dam containing mine waste within the site must comply with Schedule C - Table 2.

Schedule C — Table 2 (Size and purpose of structures containing mine waste)

Name of dam containing mine waste	Tenure no.	Maximum surface area (Ha)	Maximum volume (ML)	Maximum depth (m)	Purpose
Tailings storage facility	10186, 1531	98.0	400,000	12	Tailings storage
East evaporation pond	10185	7.7	155,000	2	Evaporation

West evaporation pond	1392	2.3	44,000	2	Evaporation
Rail siding evaporation pond	10137	2.0	40,000	2	Evaporation
Rail siding first flush pond	10137	0.1	1,500	2	First flush
Sewage ponds	1531	1.3	1,500	2	Sewage treatment

(C9-2) The water level within the Vomacka Pit must not at any time exceed 280mAHD.

Location of Dam(s)

(C10-1) The construction and operation of any regulated structure - contained within the site must be located as defined in Schedule C - Table 3.

Schedule C – Table 3 (Location of regulated structures).

Name of structure containing hazardous waste	Easting GDA 94 MGA zone 55	Northing GDA 94 MGA zone 55
Tailings storage facility	370985 371021 372596 372543 372099 371883 371797 371782	7751359 7751781 7751648 7751118 7750987 7751041 7751169 7751274
East evaporation pond	372247 372527 372497 372217	7751049 7751019 7750689 7750709
West evaporation pond	372297 371537 371527 371317	7750249 7750199 7750019 7750039
Rail siding evaporation pond	368627 368667 368687 368647	7754079 7754099 7754049 7754069
Rail siding first flush pond	370827 370977 370957 370827	7751619 7751589 7751459 7751479
Sewage ponds	370827 370977 370957 370827	7751619 7751589 7751459 7751479

Standards and Criteria

(C11-1) All high hazard dams containing hazardous waste must comply with the Code of Environmental Compliance for High Hazard Dams Containing Hazardous Waste.

(C11-2) All low hazard dams containing hazardous waste must comply with the criteria outlined in Appendix B of the Code of Environmental Compliance for Mining Leases.

Inspection of regulated structures

(C12-1) A Registered Professional Engineer (RPEQ) must inspect all regulated structures containing hazardous waste annually before 1 November each year or at any time if any abnormal or otherwise unsatisfactory conditions are observed.

(C12-2) For each inspection, the engineer must assess the condition of the dam and its foundations, determine the hydraulic adequacy of the structure and assess the adequacy of the works with respect to safety.

(C12-3) For each inspection, two copies of the engineer's report and any recommendations relating to measures to be taken to ensure the integrity of the structure shall be forwarded to the administering authority within 60 days of the inspection.

End of Life of Dam Criteria

(C13-1) Dams containing hazardous waste must not be abandoned and must be dealt with in accordance with the conditions of this Environmental Authority.

Decommissioning of Tailings Storage Facility – Objective

(C14-1) The environmental authority holder must, prior to surrender of the mining leases on which the Tailings Storage Facility is located, implement either:

- (a) A plan for de-commissioning the tailings storage facility such that, amongst other things, contaminated water will no longer be stored in the facility, the containment embankment and its contents will be structurally stable and resistant to erosion and any seepage or other emissions will not cause environmental harm, or
- (b) A site management plan for the continued operation and maintenance of the tailings storage facility.

Groundwater Management

(C15-1) By 29 July 2022 the environmental authority holder must install, operate and maintain Seepage Management Systems to prevent contaminated groundwater moving beyond the site boundary and to ensure compliance with condition F9-8.

(C15-2) The Seepage Management Systems required by condition C15-1 must, at a minimum:

- a) include effective control measures to prevent contamination of groundwater; and
- b) include effective control measures to capture and pump-back seepage sufficient to prevent migration into surface waters; and
- c) include effective control measures to ensure seepage does not report to groundwater; and
- d) include effective control measures to ensure compliance with condition C15-1; and
- e) include adequate detection measures to analyse and confirm the effectiveness of all control measures required by this condition.

(C15-3) By 29 July 2022 the environmental authority holder must develop and implement a Seepage Management Plan (SMP). The SMP must, at a minimum:

- a) describe the Seepage Management Systems required by condition C15-1; and

- b) include adequate control measures to ensure groundwater quality in compliance bores listed in 'Schedule F, Table 8 – Groundwater monitoring locations and frequency' comply with all limits specified in 'Schedule F, Table 9 – Groundwater quality limits'; and
- c) include all measures necessary to ensure that the management intent for groundwater is achieved in accordance with condition C15-1; and
- d) include all measures necessary to ensure compliance with conditions C15-1; and
- e) include adequate measures to intercept seepage sufficient to prevent migration beyond the operational and compliance bores as specified in 'Schedule F, Table 8 – Groundwater monitoring locations and frequency'; and
- f) include adequate measures to determine if any additional control measures e.g. interception bores or interception trenches are required; and
- g) include an action plan to implement and/or install any additional control measures that are required; and
- h) include a map or figure that depicts the location and type of seepage control measures installed; and
- i) be reviewed annually for the effectiveness of the components and include details of improvements undertaken in the previous year; and
- j) address any comments made by the administering authority

The SMP must be made available to the administering authority annually from 29 July 2022.

Post Closure Management Plan

(C16-1) A Post Closure Management Plan for the site must be developed and implemented for a nominal period of:

- (a) At least thirty (30) years following final ore processing on site; or
- (b) A shorter period if the site is proven to be geotechnically and geochemically stable and it can be demonstrated to the satisfaction of the administering authority that no release of contaminants from the site will result in environmental harm and be prepared at least 18 months prior to final ore processing onsite.

(C17-2) The Post Closure Management Plan must include the following elements:

- (a) Operation and maintenance of:
 - (i) Wastewater collection and reticulation systems;
 - (ii) Wastewater treatment systems;
 - (iii) The groundwater monitoring network;
 - (iv) Final cover systems; and
 - (v) Vegetative cover.
- (b) Monitoring of:
 - (i) Surface water quality;
 - (ii) Groundwater quality;
 - (iii) Seepage rates;
 - (iv) Erosion rates;
 - (v) The integrity and effectiveness of final cover systems; and
 - (vi) The health and resilience of vegetative cover.

Irrigation program:

(C18-1) The Environmental Authority holder must develop and implement a management program by 1 September 2010 in conjunction with advice from an agronomist for the irrigation program which must include the following:

- (a) A representative monitoring program for soil testing at the following depths (0-10 cm, 10-30cm, 30-60cm, and 30 cm increments below this until bedrock is reached (i.e. maximum depth of approximately 150cm).
- (b) Analysis for plant nutrients, N, P, K, CA, Mg, S, and Zn should at a minimum be taken.
- (c) A representative monitoring program for groundwater conditions.

(d) Tissue testing of plant biomass must be undertaken to determine the level of contaminants within the biomass before decided on the end use/disposal of the crop.

(e) A commitment to prepare an annual report of the monitoring program findings by 1 October each year.

Subsidence

(C19-1) The environmental authority holder must develop a contingency plan in the event that subsidence was to occur as a result of underground mining at the West 45 Project and Far West underground project.

END OF CONDITIONS FOR SCHEDULE C

SCHEDULE D – WASTE

Storage of tyres

- (D1-1) Tyres stored awaiting disposal or transport for take-back and, recycling, or waste-to-energy options - should be stockpiled in volumes less than 3m in height and 200 m² in area and at least 10m from any other tyre storage area.
- (D1-2) All reasonable and practicable fire prevention measures must be implemented, including removal of grass and other materials within a 10m radius of the scrap tyre storage area.

Disposal of tyres

- (D2-1) Where practicable, scrap tyres resulting from the mining activities can be disposed of onsite provided this practice does not cause an unacceptable fire risk or compromise mine safety.
- (D2-2) Disposing of scrap tyres resulting from the mining activities in spoil emplacements in underground stopes is acceptable, provided tyres are placed as deep in the spoil as reasonably practicable.
- (D2-3) Scrap tyres resulting from the mining activities disposed within the operational land must not impede saturated aquifers or compromise the stability of the consolidated landform.

General waste disposal

- (D3-1) General waste may be disposed of in a trench facility constructed within the non-flooded area of the old open pit and must:
 - (a) Take effective measures to ensure that all wastes accepted for disposal at the licensed place are not disposed of:
 - (i) Beyond any active waste disposal trench; and
 - (ii) Into waters or leachate collected at the base of any active waste disposal trench
 - (b) Ensure that wastes deposited in the active waste disposal trench are consolidated, compacted and covered with a layer of inert earthen material or other non-combustible inert material as often as is necessary to effectively minimise the quantity of windblown litter, odour and fly nuisance as a result of exposure of putrescible waste.
 - (c) Provide relocatable litter screens or other methods of litter control at the active disposal trench in order to effectively capture paper or other windblown litter generated by waste disposal activities.
 - (d) Conduct waste disposal operations in a nuisance free manner, particularly regarding fly breeding, mosquito breeding and rat harbourage and breeding.
 - (e) Operate and manage the active waste disposal trench to minimise the generation of leachate including a system of suitable diversion drains or embankments to divert surface waters away from any area where contact with wastes or contaminants may occur.
 - (f) Cap any completed waste disposal trench with low permeability material and compact it to effectively minimise infiltration of stormwater.
 - (g) Maintain a record of location of trenches used for waste disposal.
- (D3-2) Incineration of explosive packaging and handling material may occur within the non-flooded area of the old open pit in accordance with documented Standard Operating Procedures that ensure:
 - (a) Only these materials will be incinerated on site;
 - (b) Incineration is conducted in an environmentally sound manner, in a designated area / facility;
 - (c) Practices are in place to minimise nuisance from smoke and ash;
 - (d) Procedures are developed and implemented on how ashes will be dealt with after incineration; and
 - (e) A contingency plan is developed and implemented if nuisance is caused by incineration.
- (D3-3) Waste must not be burnt or allowed to be burnt on site unless operating in accordance with condition D3-2.

- (D3-4) The environmental authority holder shall not cause, allow or permit any waste generated outside the mine to be received at the mine for storage, treatment, processing or disposal.

Tailings

- (D4-1) The management of tailings disposal must be in accordance with the following:
- (a) All tailings material must be progressively characterised during disposal for net acid producing potential (NAPP) and the following contaminants: arsenic, copper, lead, zinc, cadmium.
 - (b) Tailings characterisation must be undertaken at a minimum rate of 8 regularly spaced samples per 100,000 tonnes of tailings material.
 - (c) Records must be kept of the tailings disposal to indicate locations and characteristics of tailings stored within the tailings storage facility.
 - (d) Where the acid producing potential of tailings material has not been conclusively determined geochemical kinetic testing must be conducted to indicate oxidation rates, potential reaction products and effectiveness of control strategies.
 - (e) Maximum duration of surface exposure of potentially acid producing tailings to oxidising conditions is one (1) month.

Tailings disposal

- (D5-1) Tailings generated during the processing of ore at Thalanga Copper Mine may only be disposed of to:
- (a) The tailings dam, or
 - (b) To the underground voids described as the East Thalanga workings, Central Thalanga workings and West Thalanga workings.
- (D5-2) Tailings disposed of to the voids must maintain a saturation level of no less than 10% moisture by weight at all times, so as to prevent oxidation.
- (D5-3) On completion of tailings disposal to underground voids:
- (a) Notwithstanding condition (D5-1), the tailings must not have been allowed to accumulate above 300mRL;
 - (b) A report must be provided to the administering authority, within 6 months, detailing the outcomes of the underground disposal program and documenting compliance with licence conditions relating to the underground disposal of tailings; and,
 - (c) All drop boxes, vent rises, and declines associated with the underground workings must be backfilled with a minimum of 5m of clean materials.
- Note: 300mRL equates to approximately 24m below surface.
- (D5-4) The total volume of tailings remaining in the voids from 300mRL to surface, as a result of the tailings disposal method and any beaching, must not exceed 5,000m³.
- (D5-5) When an underground void is being utilised for tailings disposal, daily measurements must be taken and recorded to ensure that tailings are not deposited above an elevation of 300mRL.
- (D5-6) Construction of the Cell 9 (stage 2) tailings storage facilities must be in accordance with the following:
- (a) The design criteria as specified in the report "Kagara Copper Pty Limited Thalanga Project Tailings Storage Facility Cell 9 - Design Report. Prepared for Kagara Copper Pty Ltd by Allan Watson & Associated Pty Ltd. May 2010 (AWA PROJECT NO: 0332-KZL-001 (R001))".

Off Site Movement of Regulated Wastes

- (D6-1) Where regulated waste is removed from the licensed place (other than by a release as permitted under another schedule of this environmental authority), the holder of this environmental authority must ensure that:

- (a) The removal and transport of such wastes, where it constitutes an environmentally relevant activity under the *Environmental Protection Regulation 1998*, is carried out by a person licensed for carrying out this activity under the *Environmental Protection Act 1994*; and
- (b) Records are kept of the following:
 - (i) The date, quantity and type of waste removed; and
 - (ii) Name of the regulated waste transporter that removed the waste; and
 - (iii) The intended treatment/disposal destination of the waste.

Note: Records of documents maintained in compliance with a waste tracking system established under the *Environmental Protection Act 1994* or any other law for regulated waste will be deemed to satisfy this environmental authority condition.

Notification of Improper Disposal of Regulated Waste

- (D7-1) If the holder of this environmental authority becomes aware that a person has removed regulated waste from the licensed place and disposed of the regulated waste in a manner which is not authorised by this environmental authority or improper or unlawful, then the holder of this environmental authority must, as soon as practicable, notify the administering authority of all relevant facts, matters and circumstances known concerning the disposal.
- (D7-2) Regulated waste generated by maintenance of plant and equipment and absorbent materials used to clean up spills must:
 - (a) Only be disposed of at a facility whose operator is permitted to accept such waste in accordance with the requirements of the *Environmental Protection Act 1994*; and / or
 - (b) Be treated / remediated on site.

Disposal of contaminated vegetation biomass

- (D8-1) If vegetation tissue testing in accordance with condition C19 -1 (d) determines that the vegetation biomass grown by the Sorghum irrigation program contains high levels of metal contaminants not appropriate for animal consumption or crop sale, the environmental authority holder must dispose this contaminated vegetation biomass material within the waste rock dump or tailings dam.

Waste Rock Management

- (D9-1) The holder of the environmental authority must develop a waste rock management plan, together with the certification of an appropriately qualified person that the plan is compliant with the conditions in this environmental authority and in accordance with best practice environmental management. The waste rock management plan must incorporate the following items;
 - (a) Effective characterisation of the waste rock and spoil to predict under the proposed placement and disposal strategy the quality of runoff and seepage generated concerning potentially environmentally significant effects including salinity, acidity, seepage, leachate, alkalinity and dissolved metals, metalloids and non-metallic inorganic substances.
 - (b) A program of progressive sampling and characterisation to identify dispersive and non-dispersive spoil and the salinity, acid and alkali producing potential and metal concentrations of waste rock.
 - (c) A materials balance and disposal plan demonstrating how potentially acid forming and acid forming waste rock will be selectively placed and/or encapsulated to minimise the potential generation of acid mine drainage.
 - (d) Where relevant, a sampling program to verify encapsulation and/or placement of potentially acid forming and acid forming waste rock.
 - (e) How often the performance of the plan will be assessed.
 - (f) The indicators or other criteria on which the performance of the plan will be assessed.
 - (g) A rehabilitation strategy that must be in accordance with the Administering Authority's Guideline for *Rehabilitation Requirements for Mining Projects* to ensure waste rock dumps are safe, non-polluting, self-sustaining and geotechnically and geochemically stable.

- (h) Monitoring or rehabilitation, research and/or trials to verify the requirements and methods for decommissioning and final rehabilitation of the placed materials, including the prevention and management of acid mine drainage, erosion minimisation and establishment of vegetation cover.

(D9-2) Research undertaken in accordance with condition number (D9-1 above) must be finalised at least 36 months prior to mine closure.

Waste Rock

(D10-1) Waste rock dumps must be constructed to prevent any water other than incidental rainfall from entering the waste rock dump.

(D10-2) Any saline, acid and/or metalliferous mine drainage from the waste rock dump must be effectively intercepted and treated at the licensed place.

(D10-3) All Potentially Acid Forming (PAF) material produced by the Far West underground operation must be disposed of into the Far West underground.

(D10-4) Mineralised waste rock must not be used for construction or fill material around the site where it has the potential to release contaminated run off not in accordance condition F1-1 to the environment.

END OF CONDITIONS FOR SCHEDULE D

SCHEDULE E – NOISE

- (E1-1) Noise from the mining activity must not cause an environmental harm at any sensitive place or commercial place.
- (E1-2) In the event of a complaint made to the administering authority (which is neither frivolous or vexatious) about noise generated in carrying out the environmentally relevant activity, and the noise is considered by the administering authority to be an unreasonable noise, the holder of this Environmental Authority must take action to ensure that it is no longer an unreasonable noise.
- (E1-3) Noise is not considered to be a nuisance in accordance with condition number E1-1 if monitoring shows that noise does not exceed the following levels at the time periods specified in Schedule E- Table 1.

Schedule E-Table 1- Noise Limits (Sensitive Place)

Noise Level dB(A) measured as	Noise Measured at a “Sensitive Place” ¹					
	Monday to Saturday			Sundays and Public Holidays		
	7am - 6pm	6pm -10pm	10pm - 7am	9am - 6pm	6pm -10pm	10pm - 9am
LA _{A90,T}	40	35	30	40	35	30

¹AS1055.2-1997- Acoustics-Description and measurement of environmental noise-R1

(E1-4) The method of measurement and reporting of noise levels must comply with the latest edition of the Department of Environment and Resource Management’s Noise Measurement Manual.

Air Blast and Ground Vibration

- (E2-1) In the event of a complaint about blasting noise from the mining activities, the noise from the mining activities must not exceed:
- (a) If the complaint concerns ground vibration, the limits for peak particle velocity in Table E2;
 - (b) If the complaint concerns blasting noise, the limits for air blast overpressure in Table E2; and
 - (c) If the complaint concerns low frequency noise, the noise limit in Schedule E-Table E2.

Schedule E-Table E2 - Blasting Noise Limits

Blasting noise limits	Sensitive or commercial place
Airblast overpressure level	115 dB (Linear) Peak for nine (9) out of ten (10) consecutive blasts initiated and not greater than 120 dB (Linear) Peak at any time
Ground vibration peak particle velocity	5mm/second peak particle velocity for nine (9) out of ten (10) consecutive blasts and not greater than 10 mm/second peak particle velocity at any time
Low frequency noise	At or below 200 Hz measured on the linear weighting scale indoor sound pressure level of 50 dB (Linear), or an outdoor sound pressure level of 55 dB (Linear)

- (E2-2) The ground vibration transducer (or array) must be attached to a buried block so as to ensure good coupling with the ground. The mass shall be buried so that its upper most surface is at the same level as the ground surface.
- (E2-3) The ground vibration transducer (or array) must be placed at the same point at which the air blast is monitored.
- (E2-4) A Blast Management Plan must be developed, which
- (a) Provides for at least the following:
 - (i) Procedures for charging blasting holes.
 - (ii) Initiation and sequencing design guidelines.
 - (iii) Actions to be taken if levels of induced air over pressure or ground vibration approach the maximum permissible levels.
 - (iv) Monitoring is to be continued for each blast at any monitoring location where the peak particle velocity is expected to exceed 5 mm per second.
- (E2-5) When requested by the administering authority, noise monitoring and recording must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint of environmental nuisance at any sensitive place or commercial place, and the results must be notified within 14 days to the administering authority following completion of monitoring.

END OF CONDITIONS FOR SCHEDULE E

SCHEDULE F – WATER

Contaminant Releases

- (F1-1) Contaminants that will, or have the potential to cause, environmental harm must not be released directly or indirectly to any waters except as permitted under the conditions of this environmental authority.
- (F1-2) The release of contaminants to waters must only occur from the release points specified in Schedule F- Table 1 and depicted in Map 1 attached to this environmental authority.

Schedule F- Table 1 (Contaminant Release Points, Sources Monitoring Points and Receiving Waters and monitoring frequency)

Monitoring point	Easting MGA (GDA 94)	Northing MGA (GDA 94)	Contaminant Source and Location	Receiving waters description	Monitoring frequency
Release points					
Release Point 1 (TBA)	371110	7750035	Release point of wetland treatment system	Irrigation Area	Waters: - Event based sampling of discharge event¹. One sample must be taken within 12 hours of a discharge event¹ commencing. A second sample must be taken between 12 and 24 hours after the discharge event¹ commences. - Where a discharge event¹ has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter.
Release Point 2 (RP2)	368645	7754020	Rail siding first flush pond discharge point	Dingo Gully	Waters: - Event based sampling of discharge event². One sample must be taken within 12 hours of a discharge event² commencing. A second sample must be taken between 12 and 24 hours after the discharge event² commences. - Where a discharge event² has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter. Sediments: - Twice a year (Once in the wet season, and once in the dry season)
Release Point 3 (RP3)	369140	7754340	Railing siding Evaporation pond discharge point	Dingo Gully	Waters: Event based sampling of discharge event². One sample must be taken within 12 hours of a discharge event² commencing. A second sample must be taken between 12 and 24 hours after the discharge event² commences.

					- Where a discharge event² has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter. Sediments: - Twice a year (Once in the wet season, and once in the dry season)
Release Point 4 (EEP)	372525	7750985	East evaporation dam spillway	Dingo Gully Creek	Waters: - Event based sampling of discharge event². One sample must be taken within 12 hours of a discharge event² commencing. A second sample must be taken between 12 and 24 hours after the discharge event² commences. - Where a discharge event² has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter.
Receiving Waters - Impacted sites					
Receiving Waters 1 (J)	372690	7752280	Discharge point of Dingo gully Dam	Dingo Gully	Waters: For the routine monitoring of receiving waters: Monthly Event based sampling of discharge ² or flow events ³ : - One sample must be taken within 12 hours of a discharge event² or flow event³ commencing. A second sample must be taken between 12 and 24 hours after the discharge event² or flow event³ commences. - Where a discharge event² or a flow event³ has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter. Sediments: - Twice a year (Once in the wet season, and once in the dry season)
Receiving Waters 4 (A5)	370434	7754124	Dingo Gully-Downstream of rail siding	Dingo Gully	Waters: For the routine monitoring of receiving waters: Monthly Event based sampling of discharge ² or flow events ³ : - One sample must be taken within 12 hours of a discharge event² or flow event³ commencing. A second sample must be taken between 12 and 24 hours after the discharge event² or flow event³ commences. - Where a discharge event² or a flow event³ has a duration of 24 hours or greater, samples must be taken daily

					for one week, and once a week thereafter. Sediments: Twice a year (Once in the wet season, and once in the dry season).
Receiving Waters 5 (TC)	372396	7749617	Down-stream of the south section of the mine site.	Thalanga Creek	Waters: Event based sampling of discharge event ² . - One sample must be taken within 12 hours of a discharge event² commencing. A second sample must be taken between 12 and 24 hours after the discharge event² commences. - Where a discharge event² has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter. Sediments: - Twice a year (Once in the wet season, and once in the dry season)
Receiving Waters 6 (A7)	375667	7749572	Down-stream of the south section of the mine site.	Thalanga Creek	Waters: Event based sampling of discharge event ² . - One sample must be taken within 12 hours of a discharge event² commencing. A second sample must be taken between 12 and 24 hours after the discharge event² commences. - Where a discharge event² has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter. Sediments: - Twice a year (Once in the wet season, and once in the dry season)
Receiving Waters 7 (V)	374759	7751554	Down-stream of site in Dingo Gully Dam	Dingo Gully	Waters: Event based sampling of discharge event ² . - One sample must be taken within 12 hours of a discharge event² commencing. A second sample must be taken between 12 and 24 hours after the discharge event² commences. - Where a discharge event² has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter. Sediments: - Twice a year (Once in the wet season, and once in the dry season)
Receiving Waters - Reference Sites¹					
Reference Site 1 (A4)	368236	7754046	Dingo Gully – 10 m upstream of Flinders	Dingo Gully	Waters: Event based sampling of discharge event ² . One sample must be taken within 12 hours of a discharge event² commencing. A second sample must

			highway and railway		be taken between 12 and 24 hours after the discharge event² commences. - Where a discharge event² has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter. Sediments: - Twice a year (Once in the wet season, and once in the dry season)
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¹ Discharge event is a surface water discharge resulting from wetlands overflowing and/ or failure of the irrigation system.

² Discharge event is a surface water discharge from a water storages or contaminated areas onsite.

³ Flow event is a surface water flow that occurs as a result of rainfall.

⁴ Reference sites must:

- (a) be from the same biogeographic and climatic region; and
- (b) have similar geology, soil types and topography; and
- (c) contain a range of habitats similar to those at the test sites; and
- (d) a similar flow regime; and
- (e) not be so close to the test sites that any disturbance at the test site also results in a change at the reference site.

Note: Where discharge events^{1,2} or flow events³ occur simultaneously only one set of samples are required to be taken.

(F1-3) The release of contaminants to waters must not exceed the contaminant limits stated in Schedule F- Table 2 when measured at the release monitoring points specified in Schedule F -Table 1 for each quality characteristic.

Schedule F- Table 2 (Contaminant Release and Trigger Limits)

Quality Characteristic	Contaminant release limit (for metals (mg/L) based on total metal concentrations)	Trigger Levels (for metals (mg/L) based on filtered samples)
Electrical conductivity $\mu\text{S}/\text{cm}$	1493 ⁸	75 th percentile ^{1,2,3} of reference ⁴ sites or 271 $\mu\text{S}/\text{cm}$ ¹² , whichever is higher
pH (pH Unit)	5.0 (minimum) 9 ⁷ (maximum)	20 th percentile ^{1,2,3} of reference sites ⁴ or 6 ⁵ , whichever is lower. 80 th percentile ^{1,2,3} of reference sites ⁴ or 7.5 mg/L ⁵ , whichever is higher
Hardness	N/A for compliance for interpretation purposes only	N/A for compliance for interpretation purposes only
Sulphate (SO_4^{2-}) (mg/L)	500 ⁸	80 th percentile ^{1,2,3} of reference ⁴ sites or 400 mg/L ⁷ , whichever is higher
Fluoride (mg/L)	2 ⁹	80 th percentile ^{1,2,3} of reference ⁴ sites
Arsenic (mg/L)	0.05 ¹⁰	80 th percentile ^{1,2,3} of reference sites ⁴ or 0.007 mg/L ⁶ , whichever is higher
Cadmium (mg/L)	0.005 ¹¹	80 th percentile ^{1,2,3} of reference sites ⁴ or 0.0002 mg/L ⁵ , whichever is higher
Copper (mg/L)	1 ¹⁰	80 th percentile ^{1,2,3} of reference sites ⁴ or 0.0014 mg/L ⁵ , whichever is higher
Lead (mg/L)	0.05 ¹⁰	80 th percentile ^{1,2,3} of reference sites ⁴ or 0.0034 mg/L ⁵ , whichever is higher
Mercury (mg/L)	0.001 ⁸	80 th percentile ^{1,2,3} of reference sites ⁴ or 0.0006 mg/L ⁵ , whichever is higher

Quality Characteristic	Contaminant release limit (for metals (mg/L) based on total metal concentrations)	Trigger Levels (for metals (mg/L) based on filtered samples)
Molybdenum (mg/L)	0.15 ⁹	80 th percentile ^{1,2,3} of reference sites ⁴ or 0.05 mg/L ⁷ , whichever is higher
Selenium (mg/L)	0.02 ⁹	80 th percentile ^{1,2,3} of reference sites ⁴ or 0.01 mg/L ⁵ , whichever is higher
Zinc (mg/L)	3 ⁸	80 th percentile ^{1,2,3} of reference ⁴ sites or 0.008 ⁵ , whichever is higher
TPH	N/A	No visible film/odour ⁷

¹ Trigger levels based on the 20th, 75th or 80th or percentile of 18-24 consecutive reference site samples (as defined in schedule F – Table 1) derived using DERM (2006) methodology (section 3.4.3.1).

² An interim trigger limit can be derived from >8 but <17 consecutive reference site samples (as defined in Schedule F – Table 1), derived using DERM (2006) methodology (section 3.4.3.1)

³ 20th, 80th or 75th percentile trigger limits are calculated using ANZECC (2000) methodology (section 7.4.4.1)

⁴ Reference sites must:

- (a) be from the same biogeographic and climatic region; and
- (b) have similar geology, soil types and topography; and
- (c) contain a range of habitats similar to those at the test sites; and
- (d) a similar flow regime; and
- (e) not be so close to the test sites that any disturbance at the test site also results in a

⁵ Default trigger limits – from ANZECC (2000) trigger levels for aquatic ecosystems of slightly – moderately disturbed systems – table 3.4.1 level of protection 95% / Table 3.3.4 / 3.3.5 – tropical Australian upland rivers

⁶ Australian Drinking Water Guidelines, 2004

⁷ ANZECC (2000) guidelines – recreational water

⁸ Australian Drinking Water Guidelines, 2004

⁹ ANZECC (2000) guidelines – primary industries (stock)

¹⁰ ANZECC (2000) guidelines – recreational water

¹¹ ANZECC (2000) guidelines – recreational water

¹² DERM (2009) table G.4, 75th percentile for Burdekin Bowen zone.

(F1-4) The release of contaminants to waters from the release points must be monitored at the locations and frequency specified in Schedule F- Table 1 for each quality characteristics specified in Schedule F- Table 2.

(F1-5) If quality characteristics of the release exceed any of the trigger levels specified in Schedule F-Table 2 during a release event, the environmental authority holder must compare the results of the downstream site to the data from reference monitoring sites and:

- (a) If the level of contaminants at the downstream site does not exceed the reference monitoring site data, then no action is to be taken; and
- (b) If the level of contaminants at the downstream site is greater than the reference monitoring site data, complete an investigation in accordance with the ANZECC & ARM CANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority within 3 months, outlining:
 - (i) Details of the investigations carried out; and
 - (ii) Actions taken to prevent environmental harm.

Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with F1-5 b (ii) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic within the three month investigation period.

(F1-6) The holder must install, operate and maintain a stream flow gauging station to determine and record stream flows at the locations upstream of each Release Point as specified in Schedule F-Table3 for any receiving water into which a release occurs

Schedule F-Table 3 (Contaminant Release during Flow Events)

Receiving water description	Release Point	Gauging station			Minimum Flow in Receiving Water Required for a Release Event	Flow recording Frequency
		Description	Latitude or northing (GDA94)	Longitude or easting (GDA94)		
Dingo Gully	Rail siding & Eastern evaporation pond	Gauging station 1 Dingo Gully upstream of mine disturbance	TBA – 30 Nov 2011	TBA– 30 Nov 2011	TBA – 30 Nov 2011 Example: > or = 5 m ³ /sec	Continuous (minimum daily)
Shovel Creek	Shovel creek is a similar reference site which is not impacted by mine discharges	Gauging station 2 Shovel Creek upstream of mine disturbance	TBA– 30 Nov 2011	TBA– 30 Nov 2011	TBA – 30 Nov 2011 Example: > or = 5 m ³ /sec	Continuous (minimum daily)

- (F1-7) Notwithstanding any other condition of this environmental authority, the release of contaminants to waters must only take place during periods of natural flow events specified as minimum flow in Schedule F- Table 3 for the contaminant release point(s) specified in Schedule F- Table 1
- (F1-8) At the time of release the flow rate in the receiving water must be at least twenty (20) times the rate at which waters are released.
- (F1-9) The daily quantity of contaminants released from each release point must be measured and recorded at the monitoring points in Schedule F- Table 1.
- (F1-10) Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters or cause a material build-up of sediment in such waters.
- (F1-11) The release of contaminants directly or indirectly to waters:
- Must not produce any visible discolouration of receiving waters; nor
 - Must not produce any slick or other visible or odorous evidence of oil, grease or petrochemicals nor contain visible floating oil, grease, scum, litter or other objectionable matter.

Receiving Environment Monitoring and Contaminant Trigger Levels

- (F2-1) The quality of the receiving waters must be monitored at the locations and frequency specified in Schedule F-Table 1 for each quality characteristic stated in Schedule F-Table 2.
- (F2-2) If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in Schedule F- Table 2 the environmental authority holder must compare the downstream results to the reference results in the receiving waters and:
- if the level of contaminants at the downstream site is the same or a lower value than the reference value for the quality characteristic then no action is to be taken; and
 - if the level of contaminants at the downstream site is greater than the reference monitoring site data complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority within 3 months, outlining:
 - Details of the investigations carried out; and
 - Actions taken to prevent environmental harm.

Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with (F2-2) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic within the three-month investigation period.

Stream Sediment Contaminant Levels

(F3-1) Sediment quality of receiving waters and reference waters must be monitored twice a year (once at the end of the wet season and once at the end of the dry season) at the monitoring locations defined in Schedule F-Table 1 and Schedule H – Map 1 and for the parameters defined in Table 4.

Schedule F- Table 4 - Stream sediment trigger and contaminant levels

Parameter	Unit	Contaminant Limit	Trigger Level
Arsenic	mg/kg	70 ³ or three x the reference value ¹ , whichever is higher	Reference value ¹ or 20 ² , whichever is higher.
Cadmium	mg/kg	10 ³ or three x the reference value ² , whichever is higher	Reference value ¹ or 1.5 ³ , whichever is higher.
Copper	mg/kg	270 ³ or three x the reference value ¹ , whichever is higher	Reference ¹ or 65 ² , whichever is higher.
Lead	mg/kg	220 ³ or three x the reference value ¹ , whichever is higher	Reference value ¹ or 50 ² whichever is higher.
Mercury	mg/kg	1 ³ or three x the reference value ¹ , whichever is higher	Reference value ¹ or 0.15 ² whichever is higher.
Zinc	mg/kg	410 ³ or three x the reference value ¹ , whichever is higher.	Reference value ¹ or 200 ² or, whichever is higher.

¹ Reference sites are defined in Schedule F-Table 1.

² ANZECC (2000) Interim Sediment Quality Guidelines – low values based on total sediments

³ ANZECC (2000) Interim Sediment Quality Guidelines – high values based on total sediments

- (F3-2) If quality characteristics of the release exceed any of the trigger levels specified in Table 4, the environmental authority holder must compare the results of the downstream site to the data from reference monitoring sites and:
- (a) If the level of contaminants at the downstream site does not exceed the reference monitoring site data, then no action is to be taken; and
 - (b) If the level of contaminants at the downstream site is greater than the reference monitoring site data, complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority within 3 months, outlining:
 - (i) Details of the investigations carried out; and
 - (ii) Actions taken to prevent environmental harm.

Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with F3-2 b (ii) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic within the three-month investigation period.

(F3-3) If an exceedance in accordance with condition (F3-2) (b) (ii) is identified, the holder of the authority must notify the administering authority within 14 days of receiving the result.

(F3-4) Releases of contaminants must not result in an exceedance of sediment contaminant limits stated in Schedule F-Table 4 (Stream Sediment Trigger and contaminant levels).

(F3-5) All sediment sampling must be undertaken in compliance with AS 5667.12 Guidance on Sampling of Bottom Sediments of 1998 or subsequent versions of this publication.

Receiving Environment Monitoring Program (REMP)

- (F4-1) A REMP must be developed and implemented by 1 October 2010 to monitor and record the effects of the release of contaminants on the receiving environment periodically and whilst contaminants are being discharged from the site, with the aims of identifying and describing the extent of any adverse impacts to local environmental values, and monitoring any changes in the receiving water. A copy of the REMP must be provided to the administering authority prior to its implementation and due consideration given to any comments made on the REMP by the administering authority.
For the purposes of the REMP, the receiving environment is the waters of the Dingo Gully and Shovel Creek and connected waterways within 5km downstream of the release.
- (F4-2) The REMP must address (but not necessarily be limited to) the following:
- a) Description of potentially affected receiving waters including key communities and reference water quality and sediment characteristics based on accurate and reliable monitoring data that takes into consideration any temporal variation (e.g. seasonality); and
 - b) Description of applicable environmental values and water quality objectives to be achieved (i.e. as scheduled pursuant to the Environmental Protection (Water) Policy); and
 - c) Any relevant reports prepared by other governmental or professional research organisations that relate to the receiving environment within which the REMP is proposed; and
 - d) Water and sediment quality targets within the receiving environment to be achieved, and clarification of contaminant concentrations or levels indicating adverse environmental impacts during the REMP.
 - e) Monitoring for any potential adverse environmental impacts caused by the release;
 - f) Monitoring of stream flow and hydrology;
 - g) Monitoring of toxicants should consider the indicators specified in Table 2 to assess the extent of the compliance of concentrations with water quality objectives and/or the ANZECC & ARMCANZ 2000 guidelines for slightly to moderately disturbed ecosystems;
 - h) Monitoring of physical chemical parameters as a minimum those specified in Table 2 (in addition to dissolved oxygen saturation and temperature);
 - i) Monitoring biological indicators (for macroinvertebrates in accordance with the administering authorities' monitoring and sampling manual (AusRivas methodology) and metals/metalloids in sediments (in accordance with ANZECC & ARMCANZ 2000, BATLEY and/or the most recent version of AS5667.1 *Guidance on Sampling of Bottom Sediments*) for permanent, semi-permanent water holes and water storages;
 - j) The locations of monitoring points (including the locations specified in Table 1 which are reference/upstream and downstream impacted sites for each release point);
 - k) The frequency or scheduling of sampling and analysis sufficient to determine water quality objectives and to derive site specific reference values by 18 June 2011 in accordance with the *Queensland Water Quality Guidelines*. For ephemeral streams, this should include periods of flow irrespective of mine or other discharges;
 - l) Specify sampling and analysis methods and quality assurance and control;
 - m) Any historical datasets to be relied upon;
 - n) Description of the statistical basis on which conclusions are drawn; and
 - o) Any spatial and temporal controls to exclude potential confounding factors.
- (F4-3) A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with conditions F4-2 must be prepared and submitted in writing to the administering authority by 18 June 2011. This should include an assessment of reference water quality, any assimilative capacity for those contaminants monitored and the suitability of current discharge limits to protect downstream environment values.

Tailings and Process Water Dams

- (F5-1) The "design wet period - storage" on 1st November of each year for any tailings dam or process water dam with high or significant hazard rating constructed within the operational land must be equivalent to the run-off from the critical wet season in Schedule F - Table 5.

Schedule F - Table 5 (Storage Design)

Storage Type	Design Wet Period Storage	Spillway Critical Design Storm ¹	Mandatory Reporting Level
Process Water Dam ²	100 Year ARI 3 month wet season	1000 Year ARI	1:10 year ARI ³
Tailings Dam	100 Year ARI 3 month wet season	1000 Year ARI	1:10 year ARI ³

¹ The critical storm has a duration that produces the peak discharge for the catchment

² Applies to East evaporation pond, West evaporation pond, Rail siding evaporation pond, Rail siding first flush pond, decant pond.

³ Refers to volume below the spillway crest, either the 10 ARI 72 hour storm or the 10 ARI wave allowance, whichever is lower.

(F5-2) The spillway for any tailings dam or process water dam with high or significant hazard, constructed within the operational land must be designed and maintained to withstand the peak flow from the critical design storm in Schedule F - Table 5.

(F5-3) The holder of the environmental authority must notify the administering authority when the level of the tailings dam and/or process water dam reaches the mandatory reporting level defined in Schedule F - Table 5.

Water Management Plan

(F6-1) A Water Management Plan must be developed by an appropriately qualified person and implemented.

(F6-2) The Water Management Plan must be developed in accordance with Administering Authority's Guideline for Preparing a Water Management Plan 2009 or any updates that become available from time to time and must include at least the following components:

- a) Contaminant Source Study;
- b) Site Water Balance and Model;
- c) Water Management System;
- d) Saline and metalliferous Drainage Prevention and Management Measures;
- e) Acid Rock Drainage Prevention and Management Measures (if applicable);
- f) Emergency and Contingency Planning;
- g) Monitoring and Review.

(F6-3) Each year the holder of the environmental authority must undertake a review of the Water Management Plan prior to the wet season (and no later than 1 November) and a further review following the wet season (i.e. by 1 May the following year) to ensure that proper and effective measures, practices or procedures are in place so that the mine is operated in accordance with the conditions of this environmental authority and that environmental harm is prevented or minimised.

(F6-4) A copy of the Water Management Plan and/or a review of the Water Management Plan must be provided to the administering authority on request.

Water General

(F7-1) All determinations of water quality must be:

- (a) Performed by a person or body possessing appropriate experience and qualifications to perform the required measurements;
- (b) Made in accordance with methods prescribed in the latest edition of the Administering

- Authority's monitoring and sampling manual;
- (c) Collected from the monitoring locations identified within this environmental authority, within 2 hour of each other where possible; and
 - (d) Carried out on representative samples.
 - (e) Laboratory testing must be undertaken using a laboratory accredited (e.g. NATA) for the method of analysis being used.

Monitoring of Water Storage Quality

(F8-1) Waters onsite must be monitored at the locations and frequency defined in Schedule F- Table 6 for parameters in Schedule F-Table 7.

Schedule F – Table 6 (Water Storage Monitoring)

Water Storage Description	Latitude or northing (GDA94)	Longitude or easting (GDA94)	Monitoring Location	Frequency of Monitoring
Tailings storage facility	370985 371021 372596 372543 372099 371883 371797 371782	7751359 7751781 7751648 7751118 7750987 7751041 7751169 7751274	Monitoring of the storage is to be conducted at the spillway	For the routine monitoring of onsite water locations: Quarterly Event based sampling of discharge ¹ : - One sample must be taken within 12 hours of a discharge event¹ commencing. - Where a discharge event¹ has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter.
East evaporation pond	372247 372527 372497 372217	7751049 7751019 7750689 7750709	Monitoring of the storage is to be conducted at the spillway	For the routine monitoring of onsite water locations: Quarterly Event based sampling of discharge ¹ : - One sample must be taken within 12 hours of a discharge event¹ commencing. - Where a discharge event¹ has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter.
West evaporation pond	372297 371537 371527 371317	7750249 7750199 7750019 7750039	Monitoring of the storage is to be conducted at the spillway	For the routine monitoring of onsite water locations: Quarterly Event based sampling of discharge ¹ : - One sample must be taken within 12 hours of a discharge event¹ commencing. - Where a discharge event¹ has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter.

Rail siding evaporation pond	369057 369187 369217 369087	7754339 7754429 7754369 7754289	Monitoring of the storage is to be conducted at the spillway	For the routine monitoring of onsite water locations: Quarterly Event based sampling of discharge ¹ : - One sample must be taken within 12 hours of a discharge event¹ commencing. - Where a discharge event¹ has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter.
Rail siding first flush pond	368627 368667 368687 368647	7754079 7754099 7754049 7754069	Monitoring of the storage is to be conducted at the spillway	For the routine monitoring of onsite water locations: Quarterly Event based sampling of discharge ¹ : - One sample must be taken within 12 hours of a discharge event¹ commencing. - Where a discharge event¹ has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter.
Sewage ponds	370827 370977 370957 370827	7751619 7751589 7751459 7751479	Monitoring of the storage is to be conducted at the spillway	For the routine monitoring of onsite water locations: Quarterly Event based sampling of discharge ¹ : - One sample must be taken within 12 hours of a discharge event¹ commencing. - Where a discharge event¹ has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter.

¹ Discharge event is a surface water discharge from a water storage.

Note: Samples must be analysed for all parameters listed in Schedule F, Table 6

(F8-2) In the event that waters storages defined in Schedule F-Table 6 exceed the contaminant limits defined in Table 7, the holder of the environmental authority must implement measures to prevent access to waters by all livestock and minimise access by native fauna.

Schedule F – Table 7 (Onsite Storage Contaminant Limits)

Quality Characteristic	Test value	Contaminant Limit (for metals (mg/L) based on total metal concentrations)
EC (μ S/cm)	Maximum	4970 ¹
pH (pH unit)	Range	Greater than 4, Less than 9 ²
Arsenic (mg/L)	Maximum	0.5 ¹
Cadmium (mg/L)	Maximum	0.01 ¹

Copper (mg/L)	Maximum	1 ¹
Fluoride (mg/L)	Maximum	2 ¹
Lead (mg/L)	Maximum	0.1 ¹
Mercury (mg/L)	Maximum	0.002
Molybdenum (mg/L)	Maximum	0.15
Selenium (mg/L)	Maximum	0.02
Sulphate(mg/L)	Maximum	1000 ¹
Zinc (mg/L)	Maximum	20 ¹

Note:

¹ Contaminant limit based on ANZECC & ARMCANZ (2000) stock water quality guidelines.

² Page 4.2-15 of ANZECC & ARMCANZ (2000) "Soil and animal health will not generally be affected by water with pH in the range of 4–9".

Note: Total measurements (unfiltered) must be taken and analysed

Groundwater

- (F9-1) Groundwater quality and standing water level must be monitored at the locations and frequencies defined in Schedule F - Table 8 & Schedule H Map 2 for parameters identified in Schedule F- Table 9.
- (F9-2) Groundwater measured from any compliance bore specified in Schedule F – Table 8 – Groundwater monitoring bore locations and frequency must not exceed the corresponding Limit A specified in Schedule F – Table 9 – Groundwater contaminant limits on any five consecutive sampling occasions.
- (F9-3) Groundwater measured from any compliance bore specified in Schedule F – Table 8 – Groundwater monitoring bore locations and frequency must not exceed the corresponding Limit B specified in Schedule F – Table 9 – Groundwater quality limits on any three consecutive sampling occasions.
- (F9-4) If groundwater measured from any compliance bore specified in Schedule F – Table 8 – Groundwater monitoring bore locations and frequency exceeds the corresponding Limit B specified in Schedule F – Table 9 – Groundwater quality limits on any one sampling occasion the environmental authority holder must resample the groundwater within the compliance bore for all exceeding parameters within ten business days of receipt of results.
- (F9-5) If an exceedance in accordance with condition F9-2 and/or condition F9-3 is identified, the holder of the authority must notify the administering authority within 14 days of receiving the result.

Schedule F – Table 8 – Groundwater monitoring locations and frequency

Bore Identification	Bore Type	Aquifer Description	Easting ¹	Northing ¹	Surface RL (m) ⁶	Screened Interval (m)	Monitoring Frequency
V2	Operational ³	TBA ⁴	371117	7750282	330.05	TBA ⁴	Monthly
V3			371349	7750487	331.95	TBA ⁴	Monthly
V4			371692	7749773	323.12	TBA ⁴	Monthly
V6			372573	7750028	319.02	TBA ⁴	Monthly
V7			372374	7750350	320.85	TBA ⁴	Monthly
A1			371399	7751899	327.03	TBA ⁴	Monthly
A3			372240	7751708	323.82	TBA ⁴	Monthly
TH1			372064	7750935	324.16	TBA ⁴	Monthly
V7a			373058	7750765	318.04	TBA ⁴	Monthly
V7b			373065	7750767	318.04	TBA ⁴	Monthly
W45B4			7750815	370769	341.50	TBA ⁴	Monthly
East Evaporation Dam 5 ⁶			TBA ⁴	TBA ⁴	TBA ⁴	TBA ⁴	Monthly
Campaspe Channel 6 ⁶			TBA ⁴	TBA ⁴	TBA ⁴	TBA ⁴	Monthly
FWMB1			370581	7750587	340.07	TBA ⁴	Monthly
FWMB2			371053	7751109	336.21	TBA ⁴	Monthly
FWMB4			370845	7751742	333.70	TBA ⁴	Monthly
FWMB5			370854	7750304	331.00	TBA ⁴	Monthly
A4			372090	7751828	323.77	TBA ⁴	Monthly
TH4			372550	7751048	321.09	TBA ⁴	Monthly
TH5			372622	7751667	321.51	TBA ⁴	Monthly
V1			371066	7750981	338.54	TBA ⁴	Monthly
W45B2			7751195	369985	362.60	TBA ⁴	Monthly
W45B3			7751429	370437	345.40	TBA ⁴	Monthly
L	Interpretation ²	TBA ⁴	373036	7752959	322.84	TBA ⁴	Monthly
O			375621	7749885	311.76	TBA ⁴	Monthly
P			375931	7748003	312.72	TBA ⁴	Monthly
North Bore 1 ⁶			TBA ⁴	TBA ⁴	TBA ⁴	TBA ⁴	Monthly
C1	Compliance	TBA ⁴	373896	7750152	312.85	TBA ⁴	Monthly
C2			374660	7751016	315.51	TBA ⁴	Monthly
CC7			TBA ⁴	TBA ⁴	TBA ⁴	TBA ⁴	Monthly
W45B1			7751457	369913	363.20	TBA ⁴	Monthly
V5			372421	7750411	319.03	TBA ⁴	Monthly
M			374719	7751481	313.11	TBA ⁴	Monthly
South Bore 1 ⁶			TBA ⁴	TBA ⁴	TBA ⁴	TBA ⁴	Monthly
Wetland 1 ⁶			TBA ⁴	TBA ⁴	TBA ⁴	TBA ⁴	Monthly
North West 1 ⁶			TBA ⁴	TBA ⁴	TBA ⁴	TBA ⁴	Monthly
FWMB3			370067	7750831	350.77	TBA ⁴	Monthly

¹ GDA 94 MGA zone 55

² Observational sites must:

- (a) be from the same biogeographic and climatic region; and
- (b) have similar geology, soil types and topography; and not be so close to the test sites that any disturbance at the test site also results in a change at the reference site; and
- (c) not be so close to the test sites that any disturbance at the test site also results in a change at the reference site."

³ The concentration of contaminants in operational bores must be maintained, or decrease, over time. If the level of contaminants at an operational bore site is observed to increase, the environmental authority holder must complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority within 3 months, outlining:

- (i) Details of the investigations carried out; and
- (ii) Actions taken to prevent environmental harm.

⁴ Information to be provided within three months of the bore being established. For established bores, information to be provided within 3 months of issue of the amended authority.

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

⁶ Bore must be established within 20 metres of the location detailed in Schedule H Map 2, and the exact location as per Schedule F Table 8 and surface RL (m) provided to the administering authority, by 30 September 2022.

(F9-6) Groundwater monitoring bores must be constructed and operated in accordance with methods prescribed in the latest edition of the Agriculture and Resource Management Council of Australia and New Zealand manual titled *Minimum Construction Requirements for Water Bores in Australia*.

- (F9-7) Annual groundwater monitoring reports analysing groundwater chemistry and hydro-geological status of all groundwater bores and groundwater conditions must be prepared once every 12 months.
- (F9-8) By 20 January 2023 the environmental authority holder must ensure that groundwater quality is maintained or improved when measured in operational bores specified in Schedule F, Table 8 – Groundwater monitoring locations and frequency’.
- (F9-9) A Groundwater Management Program must be developed, documented and implemented by an appropriately qualified person by 29 July 2022.
- (F9-10) The Groundwater Management Program required by condition F9-9 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) incorporate 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 F9-2 and F9-3;
 - (iv) determine trends in groundwater quality; and
 - (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 addresses any comments provided by the administering authority.
- (F9-11) A copy of the Groundwater Plan Monitoring Program must be provided to the administering authority on implementation and when otherwise requested by the administering authority.
- (F9-12) The Groundwater Management 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 F9-10.
- (F9-13) Bore CC7 must be established at a location:
- (i) within the shaded oval area depicted in Schedule H Map 2; and
 - (ii) in such a manner that it will detect any groundwater contamination before it enters the Campaspe aquifer.

Schedule F – Table 9- Groundwater contaminant limits

Bore Identification	Bore Type	Limit Type ¹	pH	Electrical Conductivity (uS/cm)	Quality Characteristic ⁴									
					Sulphate (mg/L)	Fluoride (mg/L)	Arsenic (mg/L) ²	Cadmium (mg/L)	Copper (mg/L)	Lead (mg/L) ²	Mercury (mg/L) ²	Molybdenum (mg/L)	Selenium (mg/L)	Zinc (mg/L)
C1	Compliance	Limit A	6.5 - 8.2	6545.6	490.0	0.8	N/A	0.0003	0.003	N/A	N/A	N/A	0.005	0.02
		Limit B	N/A	6613.3	500.0	1.0	0.013	0.0005	0.01	0.0034	0.0006	0.034	0.01	0.04
C2		Limit A	6.5 - 8.2	3071.7	57.6	0.8	N/A	0.0003	0.003	N/A	N/A	N/A	0.005	0.02
		Limit B	N/A	3214.8	60.4	1.0	0.013	0.0005	0.01	0.0034	0.0006	0.034	0.01	0.04
CC7		Limit A	6.5 - 8.2	6545.6	490.0	0.8	N/A	0.0003	0.003	N/A	N/A	N/A	0.005	0.02
		Limit B	N/A	6613.3	500.0	1.0	0.013	0.0005	0.01	0.0034	0.0006	0.034	0.01	0.04
W45B1		Limit A	6.5 - 8.2	2000.9	61.0	2.2	N/A	0.0003	0.003	N/A	N/A	N/A	0.005	0.02
		Limit B	N/A	2141.7	63.4	2.5	0.013	0.0005	0.01	0.0034	0.0006	0.034	0.01	0.04
V5		Limit A	6.5 - 8.2	4674.0	253.0	0.8	N/A	0.0003	0.003	N/A	N/A	N/A	0.005	0.02
		Limit B	N/A	4830.0	262.0	1.0	0.013	0.0005	0.01	0.0034	0.0006	0.034	0.01	0.04
M		Limit A	6.5 - 8.2	3071.7	57.6	0.8	N/A	0.0003	0.003	N/A	N/A	N/A	0.005	0.02
		Limit B	N/A	3214.8	60.4	1.0	0.013	0.0005	0.01	0.0034	0.0006	0.034	0.01	0.04
O		Limit A	6.5 - 8.2	2689.9	102.7	0.8	N/A	0.0003	0.003	N/A	N/A	N/A	0.005	0.02
		Limit B	N/A	2866.7	110.6	1.0	0.013	0.0005	0.01	0.0034	0.0006	0.034	0.01	0.04
P		Limit A	6.5 - 8.2	5540.7	274.0	0.8	N/A	0.0003	0.003	N/A	N/A	N/A	0.005	0.02
		Limit B	N/A	6033.2	294.0	1.0	0.013	0.0005	0.01	0.0034	0.0006	0.034	0.01	0.04
South Bore 1 ³		Limit A	6.5 - 8.2	4674.0	253.0	0.8	N/A	0.0003	0.003	N/A	N/A	N/A	0.005	0.02
		Limit B	N/A	4830.0	262.0	1.0	0.013	0.0005	0.01	0.0034	0.0006	0.034	0.01	0.04
Wetland 1 ³		Limit A	6.5 - 8.2	4674.0	253.0	0.8	N/A	0.0003	0.003	N/A	N/A	N/A	0.005	0.02
		Limit B	N/A	4830.0	262.0	1.0	0.013	0.0005	0.01	0.0034	0.0006	0.034	0.01	0.04
North West 1 ³		Limit A	6.5 - 8.2	2000.9	61.0	0.8	N/A	0.0003	0.003	N/A	N/A	N/A	0.005	0.02
		Limit B	N/A	2141.7	63.4	1.0	0.013	0.0005	0.01	0.0034	0.0006	0.034	0.01	0.04
FWMB3		Limit A	6.5 - 8.2	2013.3	24.0	0.8	N/A	0.0003	0.003	N/A	N/A	N/A	0.005	0.02
		Limit B	N/A	2100.0	25.0	1.0	0.013	0.0005	0.01	0.0034	0.0006	0.034	0.01	0.04

1. Unless indicated otherwise, value is based on the 80th percentile (Limit A) and 95th percentile (Limit B) of site-specific data determined in accordance with the guideline DSITI (2021) Using monitoring data to assess groundwater quality and potential environmental impacts (Version 2).

2. Values are based on ANZG 2018 Australian and New Zealand Guidelines for Fresh and Marine Water Quality.

3. Limits to be revised once sufficient monitoring data is obtained in accordance with the guideline DSITI (2021) Using monitoring data to assess groundwater quality and potential environmental impacts. Version 2. The method for assessing groundwater quality must be consistent with the guideline DSITI (2021) Using monitoring data to assess groundwater quality and potential environmental impacts (Version 2), Department of Environment and Science, Information Technology and Innovation (DSITI), Queensland Government, Brisbane or a later version.

4. Limit is based on total concentrations.

Water Monitoring Reporting

- (F10-1) The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority and submitted to the administering authority in the specified format when requested:
- a) The date on which the sample was taken;
 - b) The time at which the sample was taken;
 - c) The monitoring point at which the sample was taken;
 - d) The measured or estimated daily quantity of the contaminants released from all release points;
 - e) The release flow rate at the time of sampling for each release point;
 - f) The results of all monitoring and details of any exceedances with the conditions of this environmental authority; and
 - g) Water quality monitoring data must be provided to the administering authority in the specified electronic format upon request.

Saline, acid and metalliferous drainage

- (F11-1) The holder of this environmental authority must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of saline, acid and/or metalliferous mine drainage as a result of mining operations.

Stormwater, Sediment and Erosion controls

- (F12-1) 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 prevent or minimise erosion and the release of sediment to receiving waters and the contamination of storm water.
- (F12-2) The Erosion and Sediment Control Plan must be provided to the department on request, and provide for at least the following stormwater management functions:
- (a) Prevent or minimise the contamination of stormwater;
 - (b) Diverting uncontaminated stormwater run-off around areas disturbed by mining activities or where contaminants or wastes are stored or handled;
 - (c) Contaminated stormwater runoff, incident rainfall and leachate is collected; and treated, reused, or released in accordance with the conditions of this environmental authority;
 - (d) Roofing or minimising the size of areas where contaminants or wastes are stored or handled;
 - (e) Using alternate materials and or processes (such as dry absorbents) to clean up spills that will minimise the generation of contaminated waters, and;
 - (f) Erosion and sediment control structures are placed to minimise erosion of disturbed areas and prevent the contamination of any waters.
 - (g) Procedures to ensure that erosion and sediment control structures are maintained and adequate storage is available in sediment dams in accordance with design criteria.
 - (h) Training of staff that will be responsible for maintenance and operations of sediment and erosion control structures.
- (F12-3) Erosion protection measures and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment and contamination of storm water.
- (F12-4) The maintenance and cleaning of any vehicles, plant or equipment must not be carried out in areas from which contaminants can be released into any receiving waters.

Sewage Treatment

- (F13-1) Sewage effluent from sewage treatment facilities must be reused or evaporated and must not be directly released from the sewage treatment pond to any water way or drainage line.

END OF CONDITIONS FOR SCHEDULE F

Definitions

Key terms and/or phrases used in this document are defined in this section and **bolded** throughout this document. Applicants should note that where a term is not defined, the definition in the *Environmental Protection Act 1994*, its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

SCHEDULE G – DEFINITIONS

Words and phrases used throughout this licence are defined below except where identified in the EP Act or subordinate legislation. Where a word or term is not defined, the ordinary English meaning applies, and regard should be given to the Macquarie Dictionary.

Interpretation

Word definitions

"acceptance criteria" means the measures by which the actions implemented to rehabilitate the land are deemed to be complete (same as completion criteria).

"acid mine drainage" means any low pH waters, contaminated as a result of the mining activities.

"ambient (or total) noise" at a place, means the level of noise at the place from all sources (near and far), measured as the Leq for an appropriate time interval.

"ARD" means acid rock drainage and refers to the low pH, high heavy metal pollutant typical of sulfidic mine wastes, and most commonly associated with the production of ferrous iron and sulphuric acid through the oxidation of sulphide minerals.

"authority" means environmental authority (mining activities) under the Environmental Protection Act 1994.

"blasting" means the use of explosive materials to fracture-

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

"commercial place" means a place used as an office or for business or commercial purposes, other than a place within the boundaries of the operational land.

"dam" means a land-based structure or a void that is designed to contain, divert or control flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void and associated works. However; a dam does *not* mean a fabricated or manufactured tank or container designed to a recognised standard, *nor* does a dam mean a land-based structure where that structure is designed to an Australian Standard. In case there is any doubt, a levee (dyke or bund) is a dam, but (for example) a bund designed for spill containment to AS1940 is *not* a dam.

'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.

"environmental authority holder" means the holder of this environmental authority.

" $L_{A90,T}$ " is the A-weighted sound pressure level exceeded 90% of the sample duration T.

"land" in the 'land schedule' of this document means land excluding waters and the atmosphere "noise sensitive place" or a "commercial place"

"land capability" as defined in the DME 1995 Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland "noise sensitive place" or a "commercial place"

"land suitability" as defined in the DME 1995 Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland.

"land use" term to describe the selected post mining use of the land, which is planned to occur after the cessation of mining operations.

"leachate" means a liquid that has passed through or emerged from, or is likely to have passed through or emerged from, a material stored, processed or disposed of at the operational land which contains soluble, suspended or miscible contaminants likely to have been derived from the said material.

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

"metalliferous mine drainage" means any waters, contaminated with metals / metalloids or other contaminants as a result of the mining activities.

"natural flow" means the flow of water through waters caused by nature.

"noxious" means harmful or injurious to health or physical wellbeing, other than trivial harm.

"non-polluting" means having no adverse impacts upon the receiving environment.

"offensive" means causing reasonable offence or displeasure; is disagreeable to the sense; disgusting, nauseous or repulsive, other than trivial harm.

"peak particle velocity (ppv)" means a measure of ground vibration magnitude which is the maximum rate of change of ground displacement with time, usually measured in millimetres/second (mms)

"progressive rehabilitation" means rehabilitation (defined below) undertaken progressively OR a staged approach to rehabilitation as mining operations are ongoing.

"receiving waters" means all groundwater and surface water that are not disturbed areas authorised by this environmental authority.

"rehabilitation" the process of reshaping and revegetating land to restore it to a stable landform and in accordance with the acceptance criteria set out in this environmental authority and, where relevant, includes remediation of contaminated land.

"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.

"self-sustaining" means an area of land which has been rehabilitated and has maintained the required acceptance criteria without human intervention for a period nominated by the administering authority.

"sensitive place" means:

- A dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
- An educational institution; or
- A medical centre or hospital; or
- A protected area under the Nature Conservation Act 1992, the Marine Parks Act 1992 or a World Heritage Area; or
- A public park or gardens; or
- A place used as a workplace, an office or for business or commercial purposes which is not part of the mining activity and does not include employee's accommodation or public roads.

"Site boundary" means the land surface area extent of locations authorised under this environmental authority

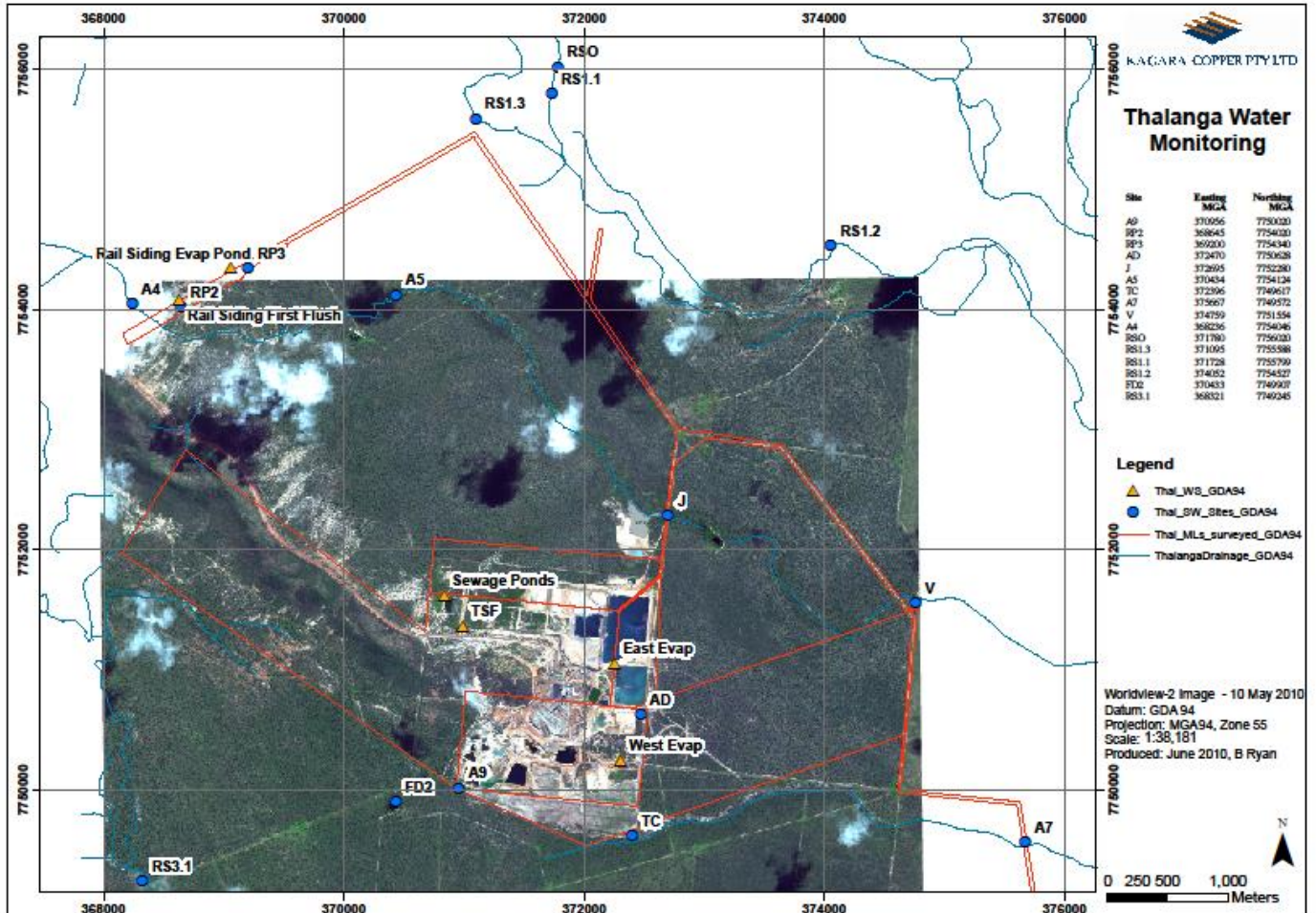
"stable" means geotechnical stability of the rehabilitated landform where instability related to the excessive settlement and subsidence caused by consolidation / settlement of the wastes deposited and sliding / slumping instability has ceased.

"waters" includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, and groundwater and any part thereof.

"water release event" means release of any waters that are or maybe contaminated by the mining activity.

END OF CONDITIONS FOR SCHEDULE G

SCHEDULE H – MAPS/FIGURES
Map 1- Thalanga Water Monitoring



Map 2- Thalanga Ground Water Monitoring.



Figure 1- Site Plan for the Far West Underground & waste rock/PAF above ground storage location TBA (To be provided by 29 July 2022).

END OF CONDITIONS FOR SCHEDULE H

END OF PERMIT