Permit

Environmental Protection Act 1994

Environmental authority EPML00612113

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

Environmental authority number: EPML00612113

Environmental authority takes effect on 11 November 2024.

Environmental authority holder(s)

Name(s)	Registered address
Cape Commodities Pty Ltd	2A Union Street KEW VIC 3101 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 (a) 1000t to 100,000t	ML20669
Schedule 3 12: Mining mineral sand	ML20737
Schedule 3 12: Mining mineral sand	ML20669
Ancillary 31 - Mineral processing 2: Processing, in a year, the following quantities of mineral products, other than coke (a) 1000t to 100,000t	ML20737

Queensland Government

ABN 46 640 294 485

Additional information for applicants

Environmentally relevant activities

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

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

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

Contaminated land

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

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

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

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

Take effect

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

a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority-on the nominated day; or

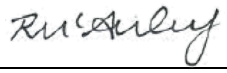
b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or

c) otherwise-on the day the authority is issued.

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

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

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.

	11 November 2024
Signature	Date

Rebecca McAuley

Department of the Environment, Tourism, Science and Innovation

Delegate of the administering authority

Environmental Protection Act 1994

Enquiries:
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Date issued: 11 November 2024

Queensland Government

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)

Location:

Urquhart Point, approximately 3 kilometres south-west of Weipa, in Far North Queensland, on ML20669 and ML20737.

Relevant activity/ies:

Table 1 - Prescribed Environmentally Relevant Activities (ERAs) Authorised Under This Environmental Authority

ERA Number	ERA Description	Aggregate Environmental Score
Schedule 2, *Environmental Protection Regulation 2008*		
31(2)(a)	Mineral processing – processing, in a year, the following quantities of mineral products, other than coke—1000t to 100000t.	179
Schedule 2A, *Environmental Protection Regulation 2008*		
12	Mining mineral sand	120

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.

Conditions of environmental authority

This **environmental authority** incorporates the following schedules:

Schedule	Issue	Page
Schedule A	General	2
Schedule B	Air	5
Schedule C	Land and Rehabilitation	6
Schedule D	Water	11
Schedule E	Noise and Vibration	20
Schedule F	Definitions	21
Schedule G	Figures	24

Schedule A – General

Activity

A1 This environmental authority authorises environmental harm referred to in the conditions. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence does not authorise environmental harm.

A2 In carrying out the mining activity authorised by this environmental authority, the holder of this environmental authority must comply with 'Table A1 - Schedule of disturbance' and 'Schedule G – Figure 1 (Project Infrastructure Layout)'.

A3 The holder of this environmental authority must:

a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority;

b) maintain such measures, plant and equipment in a proper and efficient condition;

c) operate such measures, plant and equipment in a proper and efficient manner; and

d) ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are calibrated.

Table A1 - Schedule of disturbance

Mine Feature Name	Tenure ID	Maximum disturbance area (ha)
Mine Infrastructure Area and stockpiles	ML20669	1.57
Access tracks	ML20669, ML20737	2.23
Pits	ML20669, ML20737	43.76

Monitoring

A4 Except where specified otherwise in another condition of this authority, all monitoring records or reports required by this environmental authority must be kept for a period of not less than 5 years.

A5 An environmental monitoring program sufficient to demonstrate compliance with the conditions of this environmental authority must be developed by an appropriately qualified person and implemented by 1 November 2013.

A6 All analyses and tests required to be conducted under this environmental authority must be carried out by an appropriately qualified person and analysed by a laboratory that has NATA accreditation for such analyses and test, expect as otherwise authorised by the administering authority.

A7 Monitoring and analyses required by this environmental authority must be undertaken in accordance with the requirements of the administering authority's latest guidelines, unless otherwise agreed by the administering authority in writing.

Financial Assurance

A8 Provide to the administering authority financial assurance for the amount and in the form acceptable to the administering authority in accordance with the most recent edition of the administering authority's Guideline – *Calculating Financial Assurance for Mining Projects*, before the proposed mining activities can commence.

A9 The amount of financial assurance must be reviewed by the holder of this environmental authority when a plan of operations is amended or replaced or the authority is amended.

Risk Management

A10 The holder of this environmental authority must develop and implement a risk management system for mining activities which mirrors the content requirement of the Standard for Risk Management (ISO31000:2009),or the latest edition of an Australian standard for risk management, to the extent relevant to environmental management by 1 October 2013.

Notification of Emergencies, Incidents and Exceptions

A11 The holder of this environmental authority must notify the administering authority by written notification within 24 hours, after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority.

A12 Within 10 business days following the initial notification of an emergency or incident, or receipt of monitoring results, whichever is the latter, further written advice must be provided to the administering authority, including the following:

a) results and interpretation of any samples taken and analysed;

b) outcomes of actions taken at the time to prevent or minimise unlawful environmental harm; and

c) proposed actions to prevent a recurrence of the emergency or incident.

Complaints

A13 The holder of this environmental authority must record all environmental complaints received about the mining activity including 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 the complaint;

g) Any abatement measures implemented; and

h) Person responsible for resolving the complaint.

A14 The holder of this environmental authority must, when requested by the administering authority, undertake relevant specified monitoring within a reasonable timeframe nominated or agreed to by the administering authority to investigate any complaint of environmental harm. The results of the investigation (including an analysis and interpretation of the monitoring results) and abatement measures, where implemented, must be provided to the administering authority within 10 business days of completion of the investigation, or no later than 10 business days after the end of the timeframe nominated by the administering authority to undertake the investigation.

Third Party Reporting

A15 The holder of this environmental authority must:

a) within 1 year of the commencement of this authority, obtain from a suitably qualified and experienced third party a report on compliance with the conditions of this environmental authority;

b) obtain further such reports at regular intervals not exceeding 3 years from the completion of the report referred to above; and

c) provide each report to the administering authority within 90 days of its completion.

A16 Where a condition of this environmental authority requires compliance with a standard, policy or guideline published externally to this environmental authority and the standard is amended or changed subsequent to the issue of this environmental authority the holder of this environmental authority must:

a) comply with the amended or changed standard, policy or guideline within 2 years of the amendment or change being made, unless a different period is specified in the amended standard or relevant legislation.

b) until compliance with the amended or changed standard, policy or guideline is achieved, continue to remain in compliance with the corresponding provision that was current immediately prior to the relevant amendment or change.

Regard for Comment

A17 Where comments are provided by the administering authority with respect to any reports, plans or programs required to be developed by a condition of this environmental authority then the environmental authority holder must have due regard for these comments and incorporate these comments into the reports, plans or programs.

Investigation

A18 If monitoring results indicate an exceedance of any quality objectives specified in a condition of this environmental authority, the holder of this environmental authority must notify the administering authority in accordance with condition A11 and:

a) complete an investigation to identify the potential cause of the exceedance;

b) if the investigation demonstrates that the exceedance is not attributable to the mining activities, then no further action is required; or

c) if the cause of the exceedance is inconclusive or attributable to the mining activities, provide a written report to the administering authority within 3 months of the date of receiving the monitoring results showing an exceedance, outlining:

(i) all pertinent details of the investigation carried out; and

(ii) actions taken or planned to minimise environmental harm.

END OF CONDITIONS FOR SCHEDULE A

Schedule B – Air

General

B1 Unless authorised by this environmental authority, the release of noxious or offensive odour, dust or any other airborne contaminant resulting from the mining activity must not cause environmental harm beyond the boundary of the licensed place.

Dust and Particulate Matter Monitoring

B2 Dust and particulate matter must not exceed the following levels at any sensitive or commercial place:

a) Dust deposition of 120 milligrams per square metre per day, averaged over 1 month, when monitored in accordance with the most recent version of Australian Standard AS3580.10.1 Methods for sampling and analysis of ambient air—Determination of particulate matter—Deposited matter – Gravimetric method.

b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometres (PM10) suspended in the atmosphere of 50 micrograms per cubic metre over a 24-hour averaging time, when monitored in accordance with the most recent version of either:

(i) Australian Standard AS3580.9.6 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM_{10} high volume sampler with size-selective inlet – Gravimetric method, or

(ii) Australian Standard AS3580.9.9 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM_{10} low volume sampler—Gravimetric method.

c) A concentration of particulate matter suspended in the atmosphere of 90 micrograms per cubic metre over a 1 year averaging time, when monitored in accordance with the most recent version of AS/NZS3580.9.3:2003 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—Total suspended particulate matter (TSP)—High volume sampler gravimetric method.

END OF CONDITIONS FOR SCHEDULE B

Schedule C – Land and Rehabilitation

Land and Rehabilitation Objectives

C1 Unless authorised by this environmental authority contaminants that will or may cause environmental harm must not be directly or indirectly released to land.

C2 Land outside the authorised disturbance area specified in condition A2 and Schedule G – Figure 4 (Project Area Layout) of this environmental authority must not be disturbed or contaminated.

C3 When carrying out the mining activity the holder of this environmental authority must:

a) avoid, minimise or mitigate (in order of preference) any impacts on areas of sensitive vegetation or other areas of ecological value;

b) minimise the risk of injury, harm; or entrapment of wildlife and stock;

c) minimise disturbance to land that may otherwise result in land degradation; and

d) if significant disturbance to land is unavoidable, the holder of this environmental authority must clear vegetation in a way that maintains connectivity.

C4 Land disturbed by mining must be progressively rehabilitated in accordance with the most recent edition of the administering authority's guideline "*Rehabilitation Requirements for Mining Projects (EM1122)"* to ensure areas disturbed by mining are rehabilitated to a state that:

a) is non-polluting;

b) is geo-technically and geochemically stable with no subsidence or erosion gullies for at least (3) years;

c) has established groundcover to ensure erosion is minimised;

d) has established vegetation of floristic species composition found in analogue sites and which are not weed species;

e) maintenance requirements for rehabilitated land is no greater than that required for the land prior to its disturbance caused by carrying out the mining activity (ies); and

f) is safe to humans and wildlife.

C5 A Rehabilitation Monitoring Program (RMP) must be developed and implemented by an appropriately qualified person by 1 July 2014. The RMP must include but not be limited to:

a) a detailed description of how the rehabilitation objectives referred to in condition C4 will be achieved; and

b) an on-going rehabilitation monitoring plan for rehabilitation activities. This plan will include details on sufficient spatial and temporal replication to enable scientifically justifiable conclusions to be made. The plan will also include details on the verification of rehabilitation success to be carried out for each domain. Monitoring must be carried out for each domain at a minimum sampling intensity of 1:15,000 and must include sufficient replication to enable statistical analysis of results at an acceptable power as established in the rehabilitation monitoring program.

Biodiversity

C6 Prior to commencement of vegetation clearing, the holder of this environmental authority must prepare a Biodiversity Management Plan (BMP), which is to include but not be limited to:

a) an appropriately qualified person undertaking a comprehensive fauna survey;

b) an appropriately qualified person undertaking a comprehensive flora survey in accordance with the latest version of the administering authority's *Guidelines for Flora Survey and Assessment in Northern Queensland* to accurately identify the present ecology;

c) a report, in accordance with the latest version of the administering authority's *Guidelines for Flora Survey and Assessment in Northern Queensland*, to the administering authority;

d) assessment of the potential impact of activities on threatened species; and

e) detailed control strategies and monitoring actions addressing any potential impacts on threatened species.

C7 If the report required by condition C6 indicates the presence of prescribed native wildlife and breeding places, an appropriately qualified spotter/catcher must be engaged to work ahead of vegetation clearing.

Note: This environmental authority does not authorise the taking of native wildlife or the tampering with a breeding place that is being used by prescribed native wildlife to incubate or rear the animal's offspring.

C8 In the event of identification of rare or threatened species on the licensed place, a diagrammatic representation of the species occurrence relative to the mining activity together with a management and monitoring strategy for species conservation must be develop, implemented and lodged with the administering authority prior to clearing.

Environmental Offsets

C9 Where the project application identifies that the proposed Mining Activity of the project will potentially impact on a State Significant Biodiversity Value(s), the holder of the environmental authority must deliver environmental offset(s):

a) in accordance with the *Queensland Biodiversity Offset Policy,* or subsequent equivalent document; or

b) an alternative approach approved by the administering authority.

NOTE: Mining Activity is defined under s110 of the EPAct 1994.

Assessment of State Significant Biodiversity Values

C10 The assessment of potential impacts to a State Significant Biodiversity Value(s) must:

a) demonstrate that the assessor is an Appropriately Qualified Person;

b) identify the presence, type and extent of State Significant Biodiversity Value(s), including an Ecological Equivalence Assessment for those areas to be impacted;

c) include assessments or every stage where the project application identifies stages within the project; and

d) be submitted to the administering authority at least 2 months prior to the commencement of Mining Activities or disturbance associated with Mining Activities.

NOTE: where an offset payment is the chosen offset delivery option the Queensland Biodiversity Offset Policy does not require an Ecological Equivalence Assessment.

NOTE: commencement of a stage of mining includes undertaking any disturbance associated with the Mining Activity.

Offsets Delivery

C11 Where impacts are identified in condition C9, the authority holder must:

a) for a direct offset: provide a Legally Secured direct offset for any State Significant Biodiversity Value identified in condition C9 in accordance with the *Queensland Biodiversity Offset Policy,* or an alternative approach approved by the administering authority, within 12 months of the environmental authority being issued, or within 12 months of the commencement of Mining Activities for stages of the project identified under conditions C10.

b) for an offset transfer: The holder must enter into an agreement with the administering authority to provide an offset transfer for State Significant Biodiversity Value(s) identified in condition C9 in accordance with the *Queensland Biodiversity Offset Policy,* or an alternative approach approved by the administering authority, within 12 months of the environmental authority being issued, or within 12 months of the commencement of Mining Activities for stages of the project identified under conditions C10.

c) for an offset payment: The holder must provide an offset payment(s) for State Significant Biodiversity Value(s) identified in condition C9 in accordance with the *Queensland Biodiversity Offset Policy* or an alternative approach approved by the administering authority, within 4 months of the environmental authority being issued, or within 4 months of the commencement of Mining Activities for stages of the project identified under condition C10. An official receipt must be provided to the administering authority prior to the commencement of Mining Activities.

d) For an indirect offset: The holder must provide an indirect offset(s), being a component of either a direct offset or offset transfer package, in accordance with the *Queensland Biodiversity Offset Policy* or an alternative approach approved by the administering authority.

Legally Secured Direct Offsets

C12 The holder must develop an Offset Area Management Plan for the land that is Legally Secured under C11 a) in the format specified by the administering authority.

C13 Land Legally Secured under C11 a) must be managed in accordance with the Offset Area Management Plan as approved by the administering authority.

C14 The Offset Area Management Plans must be submitted to the Administering Authority within 3 months of the land being Legally Secured under condition C11 a).

C15 The Offset Area Management Plan required under condition C12 must contain the following information:

a) a map that shows spatially the areas subject to the Offset Area Management Plan;

b) an Ecological Equivalence Assessment, undertaken by an Appropriately Qualified Person, of the offset area(s) to which the Offset Area Management Plan applies.
c) The Ecological Equivalence assessment of the impacted State Significant Biodiversity values identified in C9, with the results analysed and a comparison of the impact area(s) and offset area(s) presented, including the date undertaken.
d) management and environmental objectives and outcomes, performance criteria and monitoring requirements and how they relate to the values impacted;
e) an analysis of the risks to achieve the objectives and outcomes;

f) any restrictions imposed on the use of the offset area, including the management/control of weeds, cattle and site access;
g) the activities that will be undertaken to achieve the objectives and outcomes, including the management/control of weeds, site access, erosion and sediment and fire management; and
h) an annual monitoring and reporting programme, including estimated time until the achievement of management objectives and outcomes.

Infrastructure

C16 All buildings, structures, mining equipment and plant erected and/or used for the mining activities must be removed from the site prior to surrender, except where agreed in writing by the administering authority and the landowner.

Waste Management

C17 All general and regulated waste must be removed from the licensed place to a facility that is lawfully able to accept the waste.

C18 Unless otherwise permitted by the conditions of this environmental authority or with prior approval from the administering authority and in accordance with a relevant standard operating procedure, waste must not be burnt.

C19 The holder of this environmental authority may burn vegetation cleared in the course of carrying out extraction activities provided the activity does not cause environmental harm at any sensitive place or commercial place.

Tailings Disposal

C20 Tailings must be managed in accordance with procedures contained within the current plan of operations. These procedures must include provisions for:

a) containment of tailings;

b) the management of seepage and leachates both during operation and the foreseeable future; c) the control of fugitive emissions to air;

d) a program of progressive sampling and characterisation to identify acid producing potential and metal concentrations of tailings;

e) maintaining records of the relative locations of any other waste stored within the tailings; f) rehabilitation strategy;

g) monitoring of rehabilitation, research and/or trails to verify the requirements and methods for decommissioning and final rehabilitation of tailings, including the prevention and management of acid mine drainage, erosion minimisation and establishment of vegetation cover.

Mineral Concentrate Storage and Handling

C21 Mineral concentrate storage, handling and loading facilities must be constructed, maintained and operated in a manner that prevents any unauthorised release of contaminants to the receiving environment.

Acid Sulphate Soils

C22 The holder of this Environmental Authority must submit an Acid Sulphate Soils Management Plan (ASSMP) prior to commencement of excavation activities. The ASSMP must include but not be limited to:

a) all laboratory and field results used to test for acid sulphate soils;

b) locations of all samples taken used to test for acid sulphate soils;

c) a review and independent verification of any acid sulphate soil field and laboratory results in relation to elevation (m AHD);

d) justification for a maximum extraction depth in relation to acid sulphate soils location; and

e) treatment and management procedures in accordance with the latest edition of the Queensland Government's Instructions for the treatment and management of acid sulphate soils, in the event that acid sulphate soils are encountered.

Rehabilitation Trials

C23 Within 1 month of commencement of mineral processing, the environmental authority holder must commence trials to establish suitable revegetation on the licensed place.

C24 Following the commencement of mineralised sand extraction activity, and once every year thereafter the environmental authority holder must submit a report to the administering authority detailing the success and findings from the revegetation trials.

C25 By 10 October 2019 the environmental authority holder must submit to the administering authority a report nominating the most appropriate revegetation system based on results from trials required in condition C23.

END OF CONDITIONS FOR SCHEDULE C

Schedule D – Water

D1 The holder of this environmental authority must not release contaminants to surface waters.

D2 Prior to undertaking any disturbance on the licensed place, data must be collected in accordance with ANZECC (2000) to enable calculation of the 80th percentile of reference site concentration water quality objectives, for the parameters in Table D1 (Receiving Waters Objectives) and Table D4 (Groundwater Quality Objectives) where an alternative water quality value is not specified.

D3 The mining activities must not cause an exceedance of any Water Quality Objective or Sediment Quality Objective specified in Table D1 (Receiving Waters Objectives) beyond the boundary of the licensed place.

Table D1 (Receiving Waters Objectives)

Parameter[1]	**Surface Water Quality Objective [1] (mg/L unless otherwise specified)**	**Sediment Quality Objective[2] (mg/kg unless otherwise specified)**
Freshwater		
pH (pH units) (range)	6.0[3] or 20th percentile[6] of reference site[7] concentration, whichever is lower. 8.0[3] or 80th percentile[6] of reference site[7] concentration, whichever is higher.	Reference site[7] concentration
EC (µS/cm)	118[4]	
Dissolved oxygen (%)	85 - 120[3]	
Turbidity (NTU)	15[5] or 80th percentile[6] of reference site[7] concentration, whichever is higher	
Major cations	For interpretive purposes only	
Major anions		
Total Hardness	For interpretive purposes only	
Temperature (°C)	For interpretive purposes only	
Ammonia (NH_3-N)[8]	0.01[10] or 80th percentile[6] of reference site[7] concentration, whichever is higher	
Oxidized Nitrogen[8]	0.03[10]or 80th percentile[6] of reference site[7] concentration, whichever is higher	
Total Nitrogen (TN)[8]	0.24[10] or 80th percentile[6] of reference site[7] concentration, whichever is higher	
Total Phosphorus (TP)[8]	0.01[10] or 80th percentile[6] of reference site[7] concentration, whichever is higher	
Reactive Phosphorus (FRP)[8]	0.004[10] or 80th percentile[6] of reference site[7] concentration, whichever is higher	
Total petroleum hydrocarbons	No detectable film or odour	
Aluminium	0.027[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher	
Arsenic[11]	0.0008[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher	20[12]
Barium[13]	80th percentile[6] of reference site[7] concentration	Reference site[7] concentration
Beryllium[13]	80th percentile[6] of reference site[7] concentration	Reference site[7] concentration

Cadmium	0.00006[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher	1.5[12]

Parameter[1]	**Surface Water Quality Objective [1] (mg/L unless otherwise specified)**	**Sediment Quality Objective[2] (mg/kg unless otherwise specified)**
Cobalt[13]	80th percentile[6] of reference site[7] concentration	Reference site[7] concentration
Chromium[11]	0.00001[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher	80[12]
Copper	0.001[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher	65[12]
Iron[13]	80th percentile[6] of reference site[7] concentration	Reference site[7] concentration
Lead	0.001[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher	50[12]
Manganese	1.2[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher	Reference site[7] concentration
Nickel	0.008[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher	21[12]
Vanadium[13]	80th percentile[6] of reference site[7] concentration	Reference site[7] concentration
Zinc	0.0024[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher	200[12]
Mercury	0.00006[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher	0.15[12]
Marine		
pH (pH units)	6.5[10] or 20th percentile[6] of reference site[7] concentration, whichever is lower. 8.4[10] or 80th percentile[6] of reference site[7] concentration, whichever is higher.	Reference site[7] concentration
Dissolved oxygen (%)	85 - 105[10]	
Turbidity (NTU)	10[5] or 80th percentile[6] of reference site[7] concentration, whichever is higher	
Major cations	For interpretive purposes only	
Major anions	For interpretive purposes only	
Total Hardness	For interpretive purposes only	
Temperature (°C)	For interpretive purposes only	
Ammonia (NH_3-N)[8]	0.015[10] or 80th percentile[6] of reference site[7] concentration, whichever is higher	
Oxidized Nitrogen[8]	0.03[10] or 80th percentile[6] of reference site[7] concentration, whichever is higher	
Total Nitrogen (TN)[8]	0.25[10] or 80th percentile[6] of reference site[7] concentration, whichever is higher	
Total Phosphorus (TP)[8]	0.02[10] or 80th percentile[6] of reference site[7] concentration, whichever is higher	
Reactive Phosphorus (FRP)[8]	0.005[10] or 80th percentile[6] of reference site[7] concentration, whichever is higher	

Total petroleum hydrocarbons	No detectable film or odour	
Aluminium[13]	80th percentile[6] of reference site[7] concentration	
Arsenic[11,13]	80th percentile[6] of reference site[7] concentration	20[12]
Barium[13]	80th percentile[6] of reference site[7] concentration	Reference site[7] concentration
Beryllium[13]	80th percentile[6] of reference site[7] concentration	Reference site[7] concentration
Parameter[1]	**Surface Water Quality Objective [1] (mg/L unless otherwise specified)**	**Sediment Quality Objective[2] (mg/kg unless otherwise specified)**
Cadmium	0.0007[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher	1.5[12]
Cobalt	0.000005[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher	Reference site[7] concentration
Chromium[11]	0.00014[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher	80[12]
Copper	0.0003[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher	65[12]
Iron[13]	80th percentile[6] of reference site[7] concentration	Reference site[7] concentration
Lead	0.0022[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher	50[12]
Manganese[13]	80th percentile[6] of reference site[7] concentration	Reference site[7] concentration
Nickel	0.007[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher	21[12]
Vanadium	0.05[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher	Reference site[7] concentration
Zinc	0.007[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher	200[12]
Mercury	0.0001[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher	0.15[12]

1. For water quality objectives parameters, all metals and metalloids must be measured and reported as dissolved (field filtered) levels, with one in ten samples at a nominated sample site to include both total (unfiltered) and dissolved (field filtered) for quality assurance purposes.
2. All stream sediment sampling must be undertaken in accordance with AS 5667.12 *Guidance on Sampling of Bottom Sediments of 1998*.
3. ANZECC/ARMCANZ (2000) values for physical and chemical stressors indicative of slightly disturbed tropical Australian lowland river ecosystems Table 3.3.4.
4. Queensland Water Quality Guidelines 2009, 75th percentile of rateable reference data, Cape York (Appendix G), Table G.4.
5. ANZECC/ARMCANZ (2000) default trigger values indicative of slightly disturbed tropical Australian lowland river ecosystems Table 3.3.5.
6. Must be determined in accordance with QWQG (2009) and ANZECC (2000) methodology.
7. Reference sites are specified in Table D2 (Receiving Waters Monitoring Locations).
8. Along with all other parameters, Ammonia, Oxidized Nitrogen, Total Nitrogen, Total Phosphorus and Reactive Phosphorus are only to be measured at monitoring point 15 as specified in Table D2 (Receiving Waters Monitoring Locations), in relation to identifying impacts from the sewage effluent irrigation.
9. ANZECC/ARMCANZ (2000) values for aquatic ecosystems indicative of slightly-to-moderately disturbed tropical Australian lowland river ecosystems Tables 3.3.4 and Table 3.4.1 (*high reliability* trigger values) (99% protection) and *moderate* or *low* reliability trigger values (Section 8.3) if no value available in Table 3.4.1.
10. Queensland Water Quality Guidelines 2009, Wet Tropics region fresh and estuarine waters, Table 3.3.1a.

11. Routine analysis for this parameter is based on combined/total species of the element, where the exceedance of the WQO is identified, an additional sample must be taken and analysed as soon as practicable to determine and quantify speciated forms of this element. This does not apply to sediment analysis.
12. ANZECC (2000) Interim Sediment Quality Guidelines – low values based on total sediments.
13. Refer to condition D2.

NOTE: Where the water quality objective (WQO)/sediment quality objective (SQO) is exceeded at a receiving water site and the reference site also exceeds this concentration during the flow event, the value of the reference site applies as the WQO/SQO for the duration of the event.

Receiving Environment Monitoring Program (REMP)

D4 The environmental authority holder must develop and implement a Receiving Environment Monitoring Program (REMP) sufficient to monitor, identify and describe any adverse impacts to surface water environmental values, quality and flows due to the authorised mining activity. For the purposes of the REMP, the receiving environment is the waters of Wooldrum Creek, Roberts Creek, Central Saltmarsh, Ephemeral Creek, Albatross Bay and connected or surrounding waterways within 3km downstream of the licensed place. At minimum, the REMP must include:

a) Monitoring of all parameters specified in Table D1 (Receiving Waters Objectives) at all locations specified in Table D2 (Receiving Waters Monitoring Locations) and at the following minimum frequency:

(i) for receiving waters sediment quality, biannually (once at the end of the wet season and once at the end of the dry season);

(ii) for water quality of receiving waters during a flow event, one sample must be taken within twelve (12) hours of the event commencing. Another sample must be taken within seventy-two (72) hours and fortnightly thereafter for six (6) weeks or until the flow event ceases; and

(iii) quarterly for receiving waters.

b) Monitoring of suitable biological indicators of aquatic ecosystem health.

Note: the administering authority will take into consideration any extenuating circumstances prior to determining an appropriate enforcement response in the event condition D4(a)(ii) is contravened due to a temporary lack of safe or practical access. The administering authority expects the environmental authority holder to take all reasonable and practicable measures to maintain safe and practical access to designated monitoring locations.

D5 A REMP design document that addresses the requirements of the REMP must be prepared and made available on request to the administrating authority.

D6 A report outlining the findings of the REMP, including all monitoring results and interpretations must be prepared annually and made available on request to the administrating authority. This must include an assessment of background reference water quality, the condition of downstream water quality compared against water quality objectives, and the suitability of current discharge limits to protect downstream environmental values.

Table D2 (Receiving Waters Monitoring Locations)

Monitoring Point	Description	Coordinates (GDA94 MGA ZONE 55)	
		Easting	Northing
Receiving Water Monitoring Points[1]			
Freshwater			
1	Catchment D with ephemeral wetland draining the process area. Freshwater up-gradient from wetland.	589190	8598403

2	Ephemeral wetland/area of temporary inundation (during wet season) in Catchment D Freshwater. Receiving waters for process area.	589126	8598265
3	Ephemeral creek draining wetland in Catchment D. Freshwater. Adjacent to area of mine processing.	589565	8598383
4	Local Creek draining ephemeral wetland in Catchment D during wet season. Freshwater. Adjacent to area of mine processing.	589700	8598507
5	Ephemeral wetland in Catchment E Freshwater/brackish. Receiving waters for fringe process area.	589401	8597864
6	Local flow path in Catchment C Freshwater. Receiving waters for fringe process area and strip mining operation.	587955	8598071
7	Embley River receiving water for local creek draining Catchment D marine water.	589776	8598563
9	Outlet from ephemeral flow path in Catchment C.	588294	8598678
13[2]	Ephemeral saltmarsh – Catchment A.	588090	8596997
Marine			
Monitoring Point	**Description**	**Coordinates (GDA94 MGA ZONE 55)**	
		Easting	**Northing**
8	Roberts Creek clear of the development impacts - estuary.	589368	8597475
10	Mouth of Wooldrum Creek – Catchment B.	587648	8598279
11	Wooldrum Creek – Catchment B.	587540	8597960
12	Headwater of Wooldrum Creek – Catchment B.	587170	8594905
13[2]	Ephemeral saltmarsh – Catchment A.	588090	8596997
14a	Original barge landing area Catchment C – Embley River.	589647	8598665
14b	Proposed barge landing area – Embley River.	588536	8598722
15[3]	Embley River adjacent to process bore – Catchment D.	589081	8598964
16	Roberts Creek – clear of disturbance.	589735	8597487

1. All sites are classed as reference sites until disturbance occurs within the relevant catchment area. Following disturbance in the relevant catchment they will become compliance sites.
2. Site 13 monitors both fresh and marine water in the salt pan, depending on the tides and rainfall. At the time of sampling it must be specified whether the sample represents freshwater or marine (and must be justified). The sample will then be compared to the relevant water quality objectives in Table D1 (Receiving Waters Objectives).
3. Monitoring Point 15 must include monitoring for Ammonia, Oxidized Nitrogen, Total Nitrogen, Total Phosphorus and Reactive Phosphorus, as specified in Table D1 (Receiving Waters Objectives).

Groundwater

D7 The holder of this environmental authority must not release contaminants to groundwater.

D8 The construction, maintenance and management of groundwater bores (including groundwater monitoring bores) must be undertaken in a manner that prevents or minimises impacts to the environment and ensures the integrity of the bores to obtain accurate monitoring.

D9 Groundwater quality and water table level (mAHD) must be monitored at the locations and frequencies defined in Table D3 (Groundwater Monitoring Locations and Frequency) and Schedule G – Figure 3 (Groundwater Bore Monitoring Locations) for quality characteristics identified in Table D4 (Groundwater Quality Objectives).

Table D3 (Groundwater Monitoring Locations and Frequency)

Monitoring Point	Description	Coordinates (GDA94 MGA ZONE 55)		Surface RL[1]	Monitoring Frequency
		Easting	Northing		
Monitoring Bores[2,3]					
Freshwater					Quarterly
PBB	Catchment C3	589064	8598886	4.76	
PBD	Catchment E1	589761	8598084	2.27	
PBE	Catchment A	588870	8598031	4.75	
PBG	Catchment C2	588477	8598610	4.18	
PBH	Catchment C1	587709	8597779	4.27	
PBH9	Catchment C1	587567	8596695	5.26	
PBH10	Catchment A	587652	8596123	4.42	
PBH11	Catchment B	587397	8595514	5.51	
Marine					
PBA[4]	Catchment D	589029	8598307	1.62	
PBC	Catchment E2	589386	8597786	2.19	
PBH12	Catchment A	587594	8595116	2.04	
PBH13	Catchment A	587293	8594657	4.53	

1. RL must be measured to the nearest 0.05 metres from the top of the bore casing in m AHD.
2. All 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.*
3. All sites are classed as reference sites until disturbance occurs within the relevant catchment area. Following disturbance in the relevant catchment they will become compliance sites.
4. Monitoring Point PBA must include monitoring for Ammonia, Oxidized Nitrogen, Total Nitrogen, Total Phosphorus and Reactive Phosphorus, as specified in Table D4 (Groundwater Quality Objectives).

D10 Results of monitoring of groundwater from monitoring bores identified in Table D3 (Groundwater Monitoring Locations and Frequency), must not exceed any of the limits defined in Table G4 (Groundwater Quality Objectives).

Table D4 (Groundwater Quality Objectives)

Parameter[1]	Groundwater Quality Objective [1] (mg/L unless otherwise specified)
Freshwater	
pH (pH units) (range)	6.0[3] or 20th percentile[6] of reference site[7] concentration, whichever is lower. 8.0[3] or 80th percentile[6] of reference site[7] concentration, whichever is higher.
EC (µS/cm)	488[4]
Dissolved oxygen (%)	85 - 120[3]

Turbidity (NTU)	15[5] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Major cations	For interpretive purposes only
Major anions	
Total Hardness	For interpretive purposes only
Temperature (°C)	For interpretive purposes only
Ammonia (NH_3-N)[8]	0.01[10] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Oxidized Nitrogen[8]	0.03[10]or 80th percentile[6] of reference site[7] concentration, whichever is higher
Total Nitrogen (TN)[8]	0.24[10] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Total Phosphorus (TP)[8]	0.01[10] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Reactive Phosphorus (FRP)[8]	0.004[10] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Total petroleum hydrocarbons	No detectable film or odour
Aluminium	0.027[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Arsenic[11]	0.0008[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Barium[12]	80th percentile[6] of reference site[7] concentration
Beryllium[12]	80th percentile[6] of reference site[7] concentration
Cadmium	0.00006[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Cobalt[12]	80th percentile[6] of reference site[7] concentration

Parameter[1]	**Groundwater Quality Objective [1] (mg/L unless otherwise specified)**
Chromium[11]	0.00001[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Copper	0.001[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Iron[12]	80th percentile[6] of reference site[7] concentration
Lead	0.001[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Manganese	1.2[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Nickel	0.008[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Vanadium[12]	80th percentile[6] of reference site[7] concentration
Zinc	0.0024[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Mercury	0.00006[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Marine	
EC (µS/cm)	For interpretive purposes only

pH (pH units)	6.5[10] or 20th percentile[6] of reference site[7] concentration, whichever is lower. 8.4[10] or 80th percentile[6] of reference site[7] concentration, whichever is higher.
Dissolved oxygen (%)	85 – 105[10]
Turbidity (NTU)	10[5] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Major cations	For interpretive purposes only
Major anions	For interpretive purposes only
Total Hardness	For interpretive purposes only
Temperature (°C)	For interpretive purposes only
Ammonia (NH_3-N)[8]	0.015[10] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Oxidized Nitrogen[8]	0.03[10] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Total Nitrogen (TN)[8]	0.25[10] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Total Phosphorus (TP)[8]	0.02[10] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Reactive Phosphorus (FRP)[8]	0.005[10] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Total petroleum hydrocarbons	No detectable film or odour
Aluminium[12]	80th percentile[6] of reference site[7] concentration
Arsenic[11,12]	80th percentile[6] of reference site[7] concentration
Barium[12]	80th percentile[6] of reference site[7] concentration
Beryllium[12]	80th percentile[6] of reference site[7] concentration
Cadmium	0.0007[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Cobalt	0.000005[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Chromium[11]	0.00014[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Copper	0.0003[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Parameter[1]	**Groundwater Quality Objective [1] (mg/L unless otherwise specified)**
Iron[12]	80th percentile[6] of reference site[7] concentration
Lead	0.0022[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Manganese[12]	80th percentile[6] of reference site[7] concentration
Nickel	0.007[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Vanadium	0.05[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Zinc	0.007[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher
Mercury	0.0001[9] or 80th percentile[6] of reference site[7] concentration, whichever is higher

1. For water quality objectives parameters, all metals and metalloids must be measured and reported as dissolved (field filtered) levels, with one in ten samples at a nominated sample site to include both total (unfiltered) and dissolved (field filtered) for quality assurance purposes.

3. ANZECC/ARMCANZ (2000) values for physical and chemical stressors indicative of slightly disturbed tropical Australian lowland river ecosystems Table 3.3.4.
4. Site specific groundwater quality objective, based on 80th percentile of available reference site data.
5. ANZECC/ARMCANZ (2000) default trigger values indicative of slightly disturbed tropical Australian lowland river ecosystems Table 3.3.5.
6. Must be determined in accordance with QWQG (2009) and ANZECC (2000) methodology.
7. Reference sites are specified in Table D2 (Receiving Waters Monitoring Locations).
8. Along with all other parameters, Ammonia, Oxidized Nitrogen, Total Nitrogen, Total Phosphorus and Reactive Phosphorus are only to be measured at monitoring point PBA as specified in Table D3 (Groundwater Monitoring Locations and Frequency), in relation to identifying impacts from the sewage effluent irrigation.
9. ANZECC/ARMCANZ (2000) values for aquatic ecosystems indicative of slightly-to-moderately disturbed tropical Australian lowland river ecosystems Tables 3.3.4 and Table 3.4.1 (high reliability trigger values) (99% protection) and moderate or low reliability trigger values (Section 8.3) if no value available in Table 3.4.1.
10. Queensland Water Quality Guidelines 2009, Wet Tropics region fresh and estuarine waters, Table 3.3.1a.
11. Routine analysis for this parameter is based on combined/total species of the element, where the exceedance of the WQO is identified, an additional sample must be taken and analysed as soon as practicable to determine and quantify speciated forms of this element. This does not apply to sediment analysis.
12. Refer to condition D2.

NOTE: Where the water quality objective (WQO)/sediment quality objective (SQO) is exceeded at a receiving water site and the reference site also exceeds this concentration during the flow event, the value of the reference site applies as the WQO/SQO for the duration of the event.

Water Management Plan

D11 A Water Management Plan must be developed by an appropriately qualified person and implemented prior to commencing mining activities. The Water Management Plan must be reviewed annually to assess the adequacy of the plan, ensure actual and potential environmental impacts are managed, and identify any necessary amendments to the plan to ensure compliance with this environmental authority.

Erosion and Sediment Control

D12 An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented prior to commencing mining activities, to minimise erosion, contamination of stormwater and the release of sediment to receiving waters.

END OF CONDITIONS FOR SCHEDULE D

Schedule E Noise and Vibration

General

E1 The holder of this environmental authority must ensure that noise and vibration from the mining activity does not cause environmental harm beyond the boundary of the licensed place.

Monitoring

E2 The holder of the environmental authority must ensure that noise and vibration generated by mining activities does not cause the criteria in Table E1 (Noise Limits) to be exceeded beyond the boundary of the licensed place.

Table E1 (Noise Limits)

Noise Level dB(A) measured as:	Monday to Saturday			Sundays and Public Holidays		
	7am to 6pm	6pm to 10pm	10pm to 7am	9am to 6pm	6pm to 10pm	10pm to 9am
$L_{A10, adj, 10 mins}$	BG+5	BG+5	BG+3	BG+5	BG+5	BG+0
$L_{A1, adj, 10 mins}$	BG+10	BG+10	BG+5	BG+10	BG+10	BG+5

Note: In the event that the measured background noise level (BG) is less than 25 dB(A), then 25 dB(A) can be substituted for the measured background level.

E3 The method of measurement and reporting of noise levels must comply with the most recent edition of the administering authority's *Noise Measurement Manual* or the most recent version of Australian Standard AS 1055.1 *Acoustics – Description and Measurement of Environmental Noise.*

END OF CONDITIONS FOR SCHEDULE E

Schedule F Definitions

Definitions

Key terms and/or phrases used in this document are defined in this section. 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.

"administering authority" means:

(a) for a matter, the administration and enforcement of which has been devolved to a local government under section 514 - the local government; or,
(b) for another matter - the chief executive.

"AHD" means 'Australian Height Datum' which is the Australian national standard of geodetic datum for altitude measurements and is measured in meters (m). The level of 0.0 meters (m) AHD approximates the mean sea level (as previously measured for the period 1966-1968).

"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.

"ANZECC (2000)" means *the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000)* published by the *Australian and New Zealand Environment and Conservation Council* and *the Agriculture and Resource Management Council of Australia and New Zealand* or any equivalent update/replacement guidelines.

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

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

"chief executive" means the chief executive of the Department of the Environment, Tourism, Science and Innovation or its successor.

"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.

"environmental authority" means a licence or approval issued pursuant to the *Environmental Protection Act 1994.*

"flow event" means a surface water flow in a drainage feature or watercourse that occurs as a result of rainfall.

"in situ" in relation to water quality monitoring, means sampling a population variable (e.g., the concentration of an aquifer groundwater quality parameter) as close as possible to it's origin. Unless otherwise specified under a condition of this environmental authority, in situ water quality parameters must include pH, electrical conductivity, dissolved oxygen (% saturation) and total suspended solids.

"infrastructure" means dams, roads and tracks, buildings and other structures built for the purpose of mining activities but does not include facilities required for the long-term management of mining impacts or the protection of potential resources. Such facilities include dams containing hazardous waste, waste rock dumps, voids, or ore stockpiles and buildings or other structures whose ownership can be transferred and which have a residual beneficial use for the next owner of the operational land or the background land owner.

"$L_{A\ 10,\ adj,\ 10\ mins}$" means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 10% of any 10-minute measurement period, using Fast response.

"$L_{A\ 1,\ adj,\ 10\ mins}$" means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 1% of any 10-minute measurement period, using Fast response

"land" in the "land schedule" of this document means land excluding waters and the atmosphere.

"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.

"major anions" in regards to water quality monitoring, includes at minimum the carbonate ion (CO_3^{2-}), bicarbonate ion (HCO_3^-) and chloride ion (Cl^-).

"major cations" in regards to water quality monitoring, includes at minimum the sodium ion (Na+), potassium ion (K+), magnesium ion (Mg^2+) and calcium ion (Ca^2+).

"modification" or **"modifying"** (see definition of "construction").

"mineral" means a substance which normally occurs naturally as part of the earth's crust or is dissolved or suspended in water within or upon the earth's crust and includes a substance which may be extracted from such a substance, and includes—

(a) clay if mined for use for its ceramic properties, kaolin and bentonite; (b) magnetite;
(c) metal or metalloid compounds, including but not limited to compounds containing gold, copper, silver, lead, nickel, and zinc. (d) foundry sand;
(e) hydrocarbons and other substances or matter occurring in association with shale or coal and necessarily mined, extracted, produced or released by or in connection with mining for shale or coal or for the purpose of enhancing the safety of current or future mining operations for coal or the extraction or production of mineral oil therefrom;
(f) limestone if mined for use for its chemical properties;
(g) marble;
(h) mineral oil or gas extracted or produced from shale or coal by in situ processes; (i) peat;
(j) salt including brine;
(k) shale from which mineral oil may be extracted or produced;
(l) silica, including silica sand, if mined for use for its chemical properties;
(m) rock mined in block or slab form for building or monumental purposes;

but does not include—
(n) living matter;
(o) petroleum within the meaning of the *Petroleum Act 1923*;
(p) soil, sand, gravel or rock (other than rock mined in block or slab form for building or monumental purposes) to be used or to be supplied for use as such, whether intact or in broken form; (q) water.

"prescribed native wildlife" for the purposes of this environmental authority, means native wildlife (including plants) listed as near threatened, vulnerable or endangered, under the *Nature Conservation (Wildlife) Regulation 2006.*

"QWQG (2009)" means *the Queensland Water Quality Guidelines 2009* published by the *Queensland Government* or any equivalent update/replacement guidelines.

"receiving environment" in relation to an activity that causes or may cause environmental harm, means the part of the environment to which the harm is, or may be, caused. The receiving environment can be further defined as any waters beyond the licensed place.

"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.

"release" means the discharge of water (whether intentional or due to failure to prevent) to the receiving environment from any area, structure or feature located on a mining lease listed on this environmental authority.

"sensitive place" means;

- a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
- a motel, hotel or hostel; 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 employees accommodation or public roads.

"spotter/catcher" means a person who holds a rehabilitation permit in accordance with section 207 of the *Nature Conservation (Wildlife Management) Regulation 2006* for the purpose of care and rehabilitation of a sick, injured or orphaned protected animal, or a protected animal whose habitat has been, or will be, destroyed by human activity or a natural disaster.

"stable" means land form dimensions are or will be stable within tolerable limits now and in the foreseeable future. Stability includes consideration of geotechnical stability, settlement and consolidation allowances, bearing capacity (traffic ability), erosion resistance and geochemical stability with respect to seepage and contaminant generation.

"tolerable limits" means that a range of values could be accepted to achieve an overall environmental management objective (eg a range of settlement of a tailing capping could still meet the objective of draining the cap quickly, preventing pondage and limiting infiltration and percolation).

"watercourse" has the same meaning given in the *Water Act 2000*.

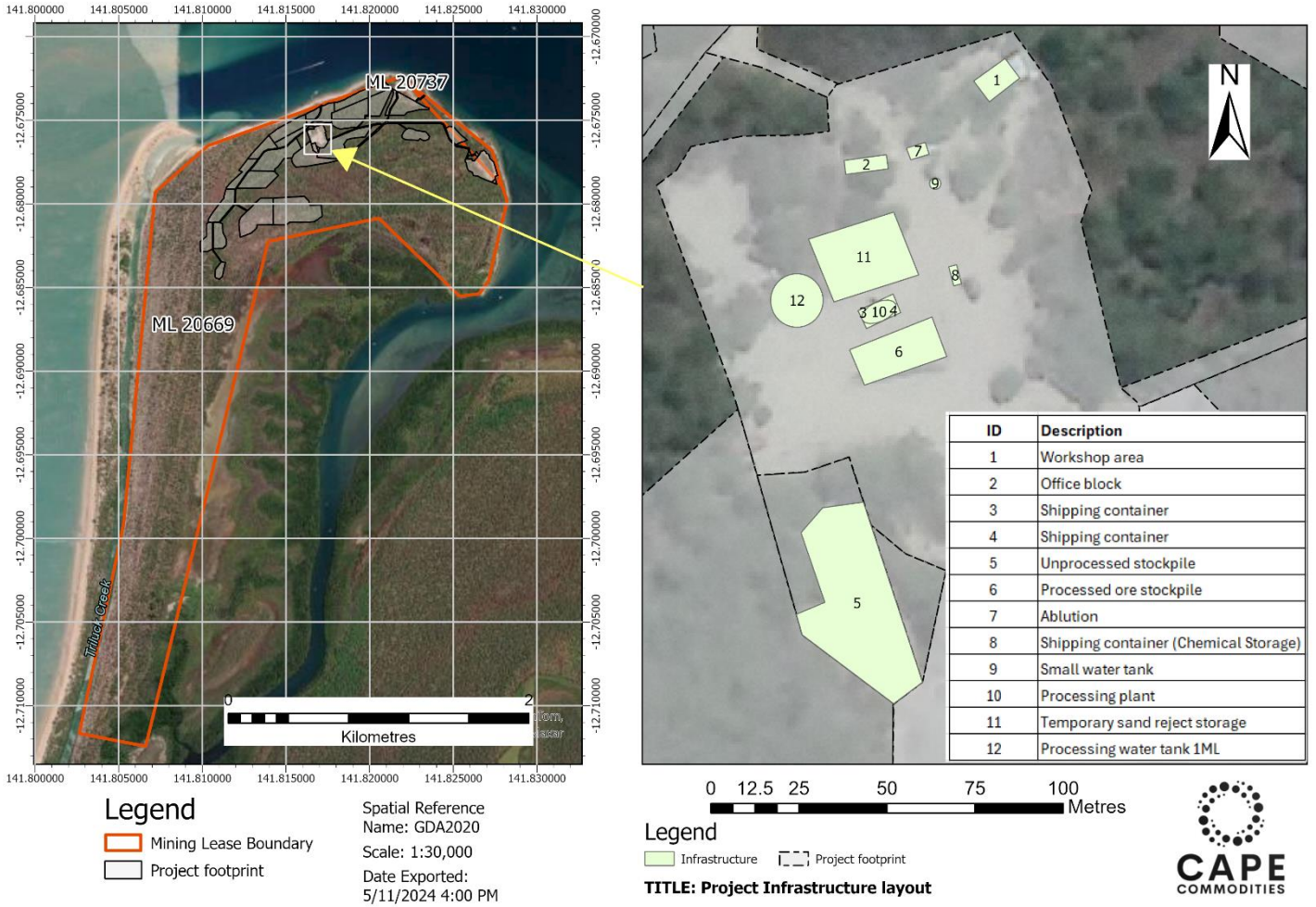
"waters" includes a river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea) or any part thereof.

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

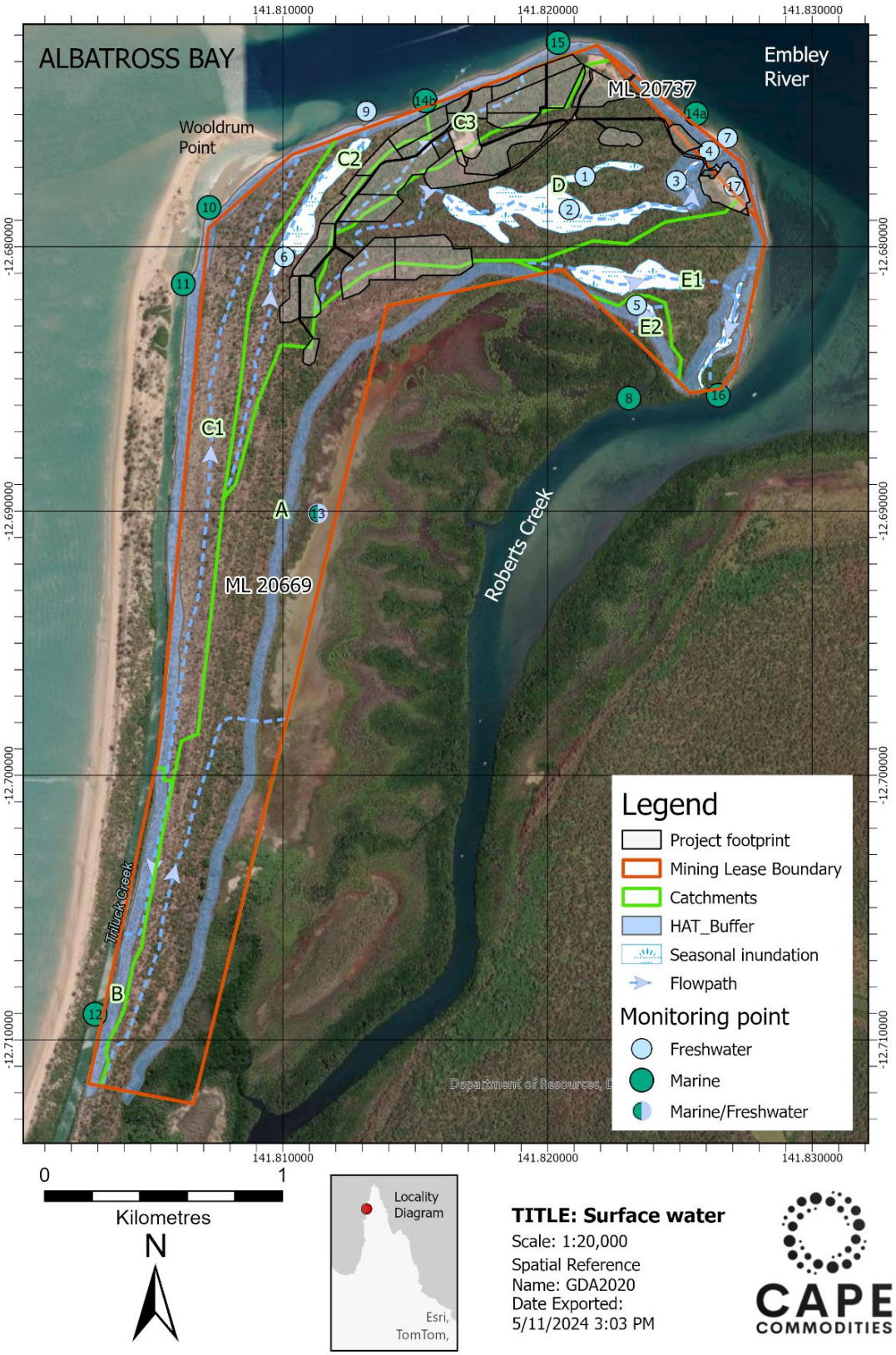
END OF CONDITIONS FOR SCHEDULE F

Schedule G – Maps / Plans

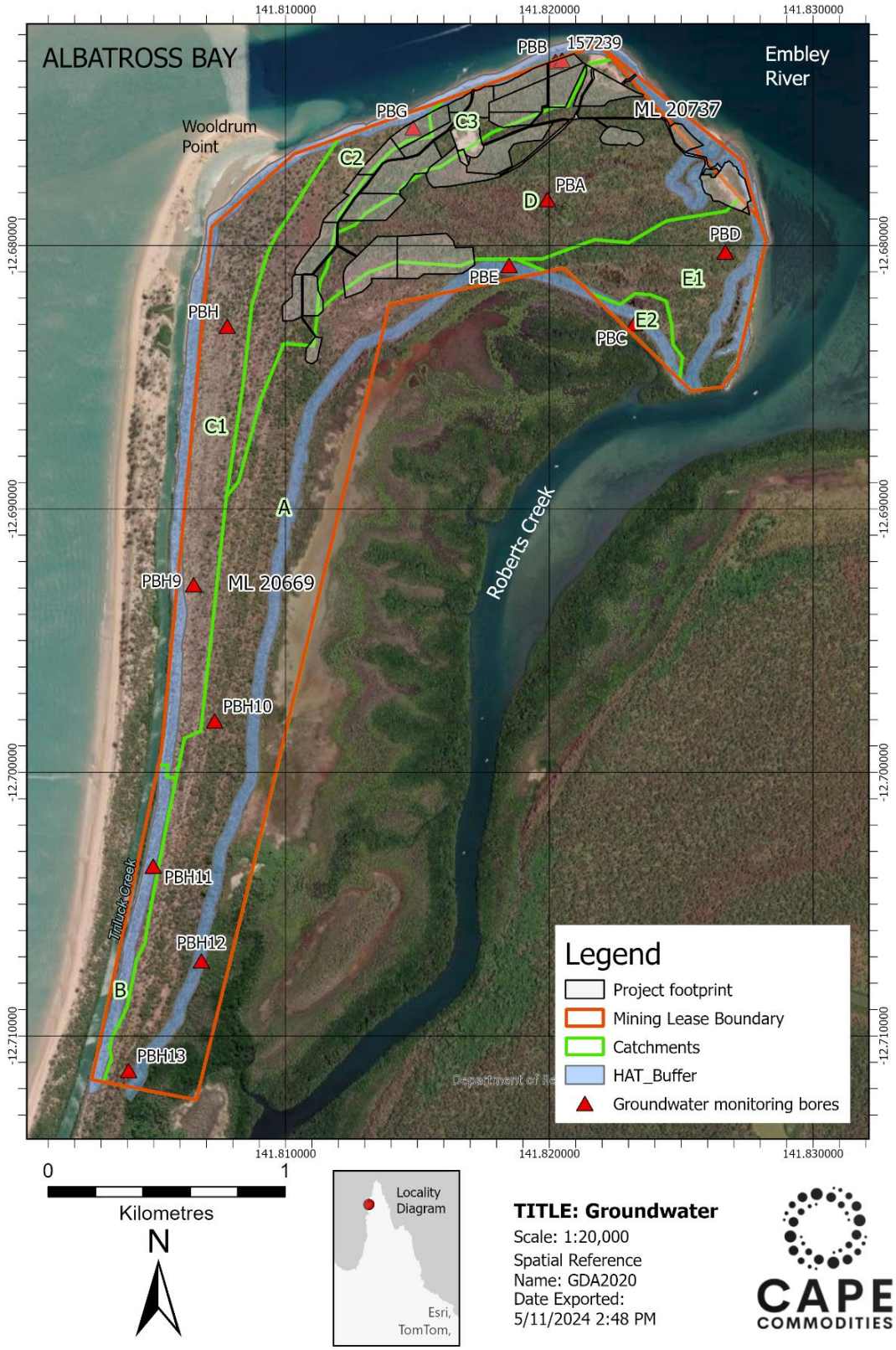
Schedule G – Figure 1 (Project Infrastructure Layout)



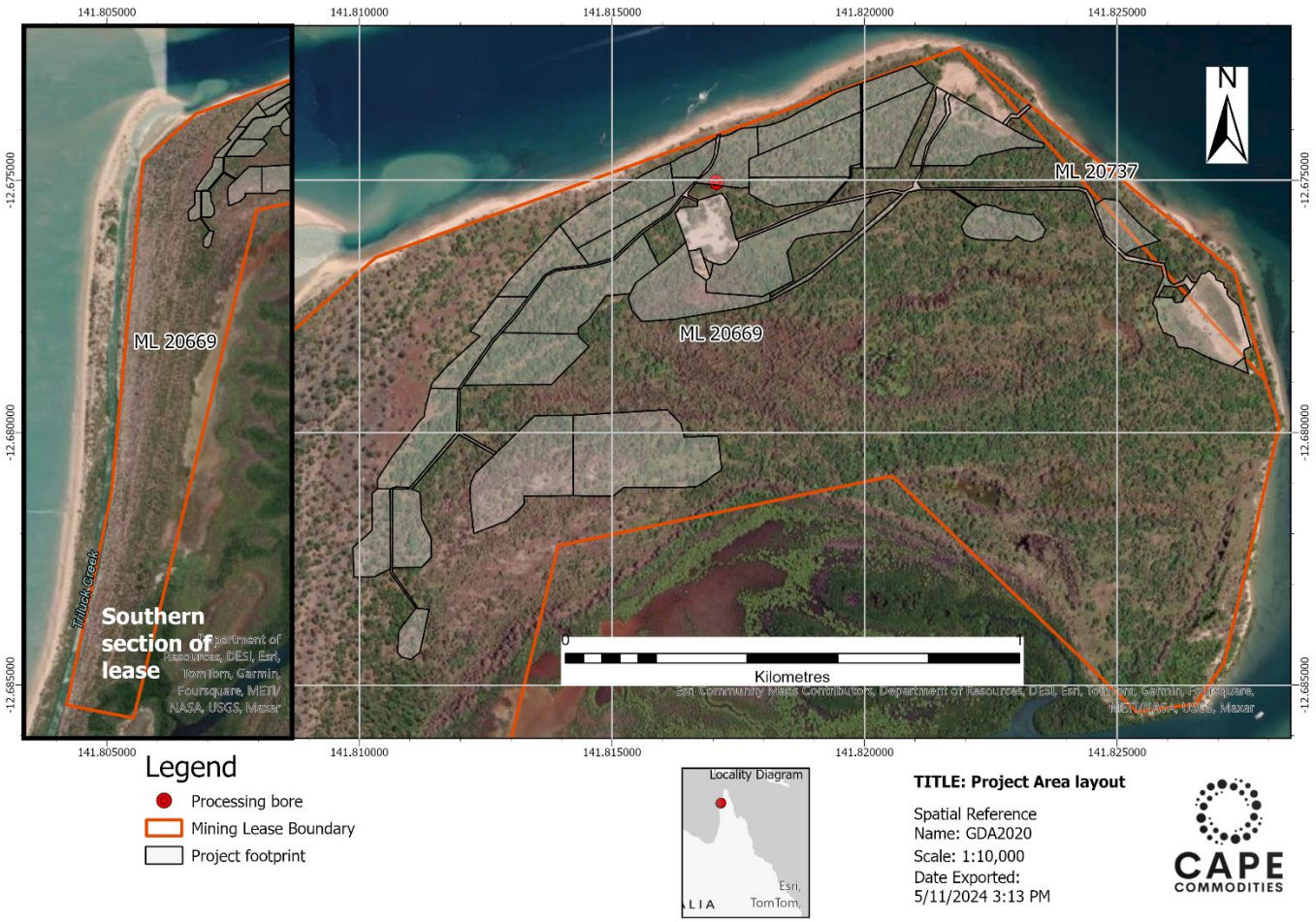
Schedule G – Figure 2 (Surface Water Monitoring Points)



Schedule G – Figure 3 (Groundwater Bore Monitoring Locations)



Schedule G – Figure 4 (Project Area Layout)



END OF CONDITIONS FOR SCHEDULE G

END OF PERMIT