

Permit¹

Environmental Protection Act 1994

Environmental authority

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

Permit¹ number: EPPR00932913

Environmental authority takes effect on: 4 September 2017.

The anniversary date of this environmental authority is 25 MAY. An annual return and the payment of the annual fee will be due each year on this day.

Environmental authority holder(s)

Name	Registered address
South32 Cannington Proprietary Limited	City Square Brookfield Place, Level 31 125-137 St Georges Terrace PERTH WA 6000

Environmentally relevant activity and location details

Environmentally relevant activity(ies)	Location(s)
ERA 50 1(a) – loading or unloading 100t or more of minerals in a day or stockpiling 50,000t or more of minerals within 5km of highest astronomical tide or 1 km of a watercourse	Off Benwell Road, South Townsville Lot 159 Plan SP106119, Lot 160 Plan SP106119, Lot 161 Plan SP106119, Lot 791 Plan EP2348

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).

¹ Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation



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- one 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.



Signature

Filiz Tansley
Delegate of the administering authority
Environmental Protection Act 1994

4 September 2017

Date

Enquiries:
PO Box 7230
CAIRNS QLD 4870
Phone: (07) 4222 5334
Fax: (07) 4222 5070

Obligations under the *Environmental Protection Act 1994*

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

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

Other permits required

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

Development Approval

This permit is not a development approval under the *Planning Act 2016*. The conditions of this environmental authority are separate, and in addition to, any conditions that may be on the development approval. If a copy of this environmental authority is attached to a development approval, it is for information only, and may not be current. Please contact the Department of Environment and Heritage Protection to ensure that you have the most current version of the environmental authority relating to this site.

Conditions of environmental authority

Location:

Off Benwell Road, South Townsville Lot 159 Plan SP106119, Lot 160 Plan SP106119, Lot 161 Plan SP106119, Lot 791 Plan EP2348

Relevant activity/ies:

ERA 50 1(a) – loading or unloading 100t or more of minerals in a day or stockpiling 50,000t or more of minerals within 5km of highest astronomical tide or 1 km of a watercourse

This **Environmental Authority** incorporates the following schedules:

- Schedule A - General Conditions
- Schedule B - Air
- Schedule C - Water
- Schedule D - Noise
- Schedule E - Waste Management
- Schedule F - Definitions
- Schedule G - Figures

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.

SCHEDULE A - GENERAL CONDITIONS

- A1 The activity operating under this environmental authority must not be conducted contrary to any of the following limitations:
1. Bulk lead concentrate must not be loaded, unloaded or stored at or on berth 10 as depicted in **Figure A – Port of Townsville boundary monitoring locations**.
 2. Lead concentrate that remains within a fully sealed package that prevents the release of contaminants for the duration of the ship loading or ship unloading may be loaded or unloaded at berth 10 as indicated in **Figure A – Port of Townsville boundary monitoring locations**.
 3. Notwithstanding any other condition, odours or airborne contaminants must not cause environmental harm at any sensitive place or commercial premises.
- A2 The holder of this environmental authority must:
- a) install all reasonable and practicable 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
 - d) ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated.
- A3 The activity must be undertaken in accordance with written procedures that:
- a) identify potential risks to the environment from the activity during routine operations and emergencies; and
 - b) establish and maintain control measures that minimise the potential for environmental harm; and
 - c) ensure plant, equipment and measures are maintained in a proper and effective condition; and
 - d) ensure plant, equipment and measures are operated in a proper and effective manner; and
 - e) ensure that staff are trained and aware of their obligations under the *Environmental Protection Act 1994*; and
 - f) must be provided to the administering authority upon request.
- A4 Records must be kept for all mineral product handling activities carried out in accordance with this environmental authority. Records must include but not be limited to:
- a) the mineral type; and
 - b) a safety data sheet or product assay for the specific mineral; and
 - c) the duration the mineral was handled (including start and finish times and dates); and
 - d) the volume of mineral handled; and
 - e) whether the activity involved loading or unloading of the mineral; and
 - f) the loading or unloading method used; and
 - g) the location or berth number at which the mineral was handled; and
 - h) for shipping activities, the name of the vessel loaded or unloaded; and
 - i) the train or truck movements.
- A5 Any records kept or created in relation to this authority must be:
- a) kept for a period of at least five years; and
 - b) provided to the administering authority on request; and
 - c) provided to the administering authority in the format requested.

- A6 Any breach of a condition of this environmental authority must be reported to the administering authority as soon as practicable, but no later than 24 hours after becoming aware of the breach.
- A7 When required by the administering authority, monitoring must be undertaken in the manner requested by the administering authority to investigate any complaint arising from the activity.
- A8 All monitoring and investigations required by this environmental authority must be undertaken by an appropriately qualified person.
- A9 The environmental authority holder must:
- a) ensure that an appropriately qualified third party conducts and documents an audit of compliance with all conditions of this environmental authority by 4 September 2018; and
 - b) ensure that further audits in accordance with condition A9(a) are conducted at intervals not exceeding once every three years from completion of the initial audit.
- A10 Prior to handling any new mineral product or bulk material; or significant increase in volume of a mineral product or bulk material, the written procedures required by condition A3 must be reviewed for effectiveness in minimising the likelihood of environmental harm and updated where required.

End of Conditions for Schedule A

SCHEDULE B- AIR

- B1 Contaminants must only be released to air from the point source(s) in accordance with **Table B1 – Point source air release limits** and the associated requirements.
- B2 Contaminants released from each release point specified in **Table B1 – Point source air release limits** must be directed vertically upwards without any impedance or hindrance.
- B3 Contaminants released to air from the point source(s) must not exceed the release limits specified in **Table B1 – Point source air release limits**.
- B4 The environmental authority holder must monitor and record all releases of contaminants required by and in accordance with **Table B1 – Point source air release limits** and at the associated monitoring frequency.

Table B1 – Point source air release limits

Authorised release point, Universal Transverse Mercator Zone 55			Contaminant	Maximum release limit ^[1]	Minimum release height (m)	Minimum velocity (m/sec)	Monitoring Frequency
Ref	Easting	Northing					
TE - Rail Wagon Tippler (East Dust Collector Stack)	483356	7871276	Particulates	250 mg/m ³	Not less than 4 metres above the roof ridge of any adjacent building or structure but in any case not less than 6 metres above ground level.	8	6 Monthly
			Total heavy metals ^[2]	10 mg/m ³			
T2 - Conveyor Transfer Point (Tower T2 Dust Collector Stack)	483361	7871573	Particulates	250 mg/m ³			
			Total heavy metals ^[2]	10 mg/m ³			
T3 - Conveyor Transfer Point (Tower T3 Dust Collector Stack)	483226	7871760	Particulates	250 mg/m ³			
			Total heavy metals ^[2]	10 mg/m ³			
T4 - Conveyor Transfer Point (Tower T4 Dust Collector Stack)	482982	7871952	Particulates	250 mg/m ³			
			Total heavy metals ^[2]	10 mg/m ³			
CS - Concentrate Storage Shed (Dust Collector Stack)	483245	7871326	Particulates	250 mg/m ³			
			Total heavy metals ^[2]	10 mg/m ³			
TW - Rail Wagon Tippler (West Dust Collector Stack)	483356	7871276	Particulates	50 mg/m ³ (30 minute average)			Continuous
			Total heavy metals ^[2]	10 mg/m ³			6 Monthly
T1 - Conveyor Transfer Point (Tower T1 Dust Collector Stack)	483240	7871309	Particulates	50 mg/m ³ (30 minute average)			Continuous
			Total heavy metals ^[2]	10 mg/m ³			6 Monthly

¹ Schedule 4 of the NSW Protection of the Environment Operations (Clean Air) Regulation 2010

² The limit for total heavy metals includes the total of Antimony, Arsenic, Cadmium, Cobalt, Copper, Lead, Mercury, Vanadium and their respective compounds.

Associated requirements

Australian Standard 4323.1 Stationary source emissions: Selection of sampling positions.

Australian Standard 4323.2 Stationary source emissions: Determination of total particulate matter – Isokinetic manual sampling – Gravimetric method.

- B5 Measures for the control of airborne emissions from the ship loading and ship unloading of bulk mineral concentrates must be documented; and installed, maintained and operated in a manner that prevents the release of mineral concentrates to the environment. Measures must include, but not be limited to:
- a) ensuring that the moisture content of the mineral concentrate is maintained as high as practicable* at the point of ship loading or ship unloading; and
 - b) implementation of operational practices to minimise any potential reduction in mineral concentrate moisture content; and
 - c) minimising the exposure of mineral concentrates to the effects of wind; and
 - d) dust suppression systems** (e.g. misting sprays); and/or
 - e) dust control systems** (e.g. dust extraction/filtration system).

*Consideration for *Transportable Moisture Limit* (TML) maritime safety requirements when determining practicable.

**An appropriately qualified person must design, install, test and commission all dust control and dust suppression systems specific to the mineral concentrate product and for the specific method of handling (e.g. grab and hopper, rotainer, ship loader). The design must take in to consideration the dustiness, the Dust Extinction Moisture (DEM) level, and the dust/moisture relationship for the specific mineral concentrates as determined by the relevant Australian and International Standards.

Note: Relevant controls a) to e) may be applied at any point within the handling stream including upstream of the loading or unloading point to effectively control emissions.

- B6 Measures for the control of airborne emissions from the storage of mineral concentrates must be documented; and installed, maintained and operated in a manner that prevents the release of mineral concentrates to the environment.
1. Bulk mineral concentrates must be handled and stored within a building that may incorporate the following dust control measures:
 - a) cover all necessary openings and vents in the building (other than doorways and access ways) with filter media or other equivalent dust control measures; and
 - b) ensure cladding of the building is securely affixed and free of any unnecessary holes; and
 - c) maintain the interior of the storage facility under negative air pressure sufficient to prevent release of mineral concentrate from the building; and
 - d) fit all doorways and access ways in the building with doors; and
 - e) keep all doors in the building closed except when being used for access or egress; and
 - f) maintain all doors, doorways and access ways in the building in such a condition that doors, when closed, provide a seal against the release of mineral concentrate to the environment.
 2. mineral concentrates handled and stored in a packaged manner (e.g. containerised) must be handled and stored in a manner that prevents releases to the environment.
- B7 All new infrastructure and/or upgrades to infrastructure for the storage of bulk mineral concentrates constructed after 4 September 2017 must include, but not be limited to:
- a) cover all necessary openings and vents in the infrastructure (other than doorways and access ways) with filter media or other equivalent dust control measures; and
 - b) ensure cladding of the infrastructure is securely affixed and free of any unnecessary holes; and
 - c) maintain the interior of the infrastructure under negative air pressure sufficient to prevent release of mineral concentrate from the infrastructure; and
 - d) fit all doorways and access ways in the infrastructure with doors; and
 - e) keep all doors in the infrastructure closed except when being used for access or egress; and
 - f) maintain all doors, doorways and access ways in the infrastructure in such a condition that doors, when closed, provide a seal against the release of mineral concentrate to the environment.

Note: Alternative control technology that provides an equivalent level of control outside of those listed above may be accepted. When infrastructure is upgraded, a) to f) apply to the upgraded section of the infrastructure only.

B8 The environmental authority holder must develop and implement and document an ambient air quality and dust deposition monitoring program* by 31 December 2017 to ensure compliance with the conditions of this environmental authority.

*note – the environmental authority holder may elect to participate in a collaborative Port of Townsville monitoring program as an alternative to, or in addition to the monitoring program identified above, provided the collaborative program meets the requirements of this environmental authority, and copies of all records are kept by the environmental authority holder of the results and findings of this program.

B9 If the environmental authority holder or an authorised officer observes a visible release of dust emissions to the atmosphere from mineral concentrate during ship loading or ship unloading or storage activities, the environmental authority holder must:

- a) Immediately review and, where necessary, adjust operational controls.
- b) If visible releases of dust emissions continue or are repetitive then:
 - i. cease relevant activities; and
 - ii. review applicable measures for the control of airborne emissions; and
 - iii. prior to recommencing activities, implement any reasonable identified improvements to the measures for the control of airborne emissions.

B10 The environmental authority holder must monitor and record all quality characteristics required by and in accordance with **Table B2 – Ambient Air Quality Trigger Values and Limits** and **Table B3 – Dust Deposition Trigger Values and Limits**.

B11 The activity must not cause or contribute to any exceedance of the air quality limits identified in **Table B2 – Ambient Air Quality Trigger Values and Limits** or **Table B3 – Dust Deposition Trigger Values and Limits** at or beyond the Port of Townsville boundary as depicted in **Figure A – Port of Townsville boundary monitoring locations**

Table B2: Ambient Air Quality Trigger Values and Limits

Quality Characteristic	Limit type/ measurement period	Monitoring equipment	Monitoring frequency	Monitoring locations ^[7]	Trigger level	Air quality limit
Particulate Matter less than 10 µm in aerodynamic diameter (PM ₁₀)	Rolling 24 hour average based on 1 hour averages	Tapered Element Oscillating Microbalance (TEOM) ^[3]	Continuous ^[6]	At minimum, monitoring must be carried out concurrently at three (3) locations, including the locations indicated in Figure A or any alternative location ^[7] agreed to in writing by the administering authority.	NA	50 µg/m ³ ^{[1] [8]}
	Calendar year average	Tapered Element Oscillating Microbalance (TEOM) ^[3]	Continuous ^[6]	At minimum, monitoring must be carried out concurrently at three (3) locations, including the locations indicated in Figure A or any alternative location ^[7] agreed to in writing by the administering authority.	NA	25 µg/m ³ ^[8]

Quality Characteristic	Limit type/ measurement period	Monitoring equipment	Monitoring frequency	Monitoring locations ^[7]	Trigger level	Air quality limit
Total suspended particulate matter (TSP)	Rolling 24 hour average based on 1 hour averages	Tapered Element Oscillating Microbalance (TEOM) ^[3]	Continuous ^[6]	At minimum, monitoring must be carried out concurrently at the two locations 1 and 2 as depicted on figure A locations, including the locations indicated in Figure A or any alternative location ^[7] agreed to in writing by the administering authority.	100 µg/m ³ ^[2]	NA
	Calendar year average	High Volume Air Sampler (HVAS)	1 in every 6 days	At minimum, monitoring must be carried out concurrently at three (3) locations, including the locations indicated in Figure A or any alternative location ^[7] agreed to in writing by the administering authority.	NA	90 µg/m ³ ^[1]
Arsenic and its compounds measured as the total metal content in (PM ₁₀ fraction)	Calendar year average	High Volume Air Sampler (HVAS)	1 in every 6 days	At minimum, monitoring must be carried out concurrently at three (3) locations, including the locations indicated in Figure A or any alternative location ^[7] agreed to in writing by the administering authority.	NA	0.006 µg/m ³ ^[1]
Cadmium and its compounds measured as the total metal content in (PM ₁₀ fraction)	Calendar year average	High Volume Air Sampler (HVAS)	1 in every 6 days	At minimum, monitoring must be carried out concurrently at three (3) locations, including the locations indicated in Figure A or any alternative location ^[7] agreed to in writing by the administering authority.	NA	0.005 µg/m ³ ^[1]
Copper and its compounds	Rolling 24 hour average based on 1 hour averages	Continuous Metals Analyser ^[5]	Continuous ^[6]	At minimum, monitoring must be carried out concurrently at the two locations 1 and 2 ^[9] as depicted on figure A or any alternative locations ^[7] agreed to in writing by the administering authority.	5 µg/m ³ ^[2]	NA
Lead and its compounds	Rolling 24 hour average based on 1 hour averages	Continuous Metals Analyser ^[5]	Continuous ^[6]	At minimum, monitoring must be carried out concurrently at the two locations 1 and 2 ^[9] as depicted on figure A or any alternative locations ^[7] agreed to in writing by the administering authority.	0.65 µg/m ³ ^[4]	NA

Quality Characteristic	Limit type/ measurement period	Monitoring equipment	Monitoring frequency	Monitoring locations ^[7]	Trigger level	Air quality limit
Lead and its compounds measured as the total metal content in total suspended particulates (TSP)	Rolling 3 month average based on 1 month averages	High Volume Air Sampler (HVAS)	1 in every 6 days	At minimum, monitoring must be carried out concurrently at three (3) locations, including the locations indicated in Figure A or any alternative location ^[7] agreed to in writing by the administering authority.	0.3 µg/m ³ ^[4]	0.5 µg/m ³ ^[1]
	Rolling 12 month average based on 1 month averages	High Volume Air Sampler (HVAS)	1 in every 6 days	At minimum, monitoring must be carried out concurrently at three (3) locations, including the locations indicated in Figure A or any alternative location ^[7] agreed to in writing by the administering authority.	0.25 µg/m ³ ^[2]	0.5 µg/m ³ ^[1]
	Calendar year average	High Volume Air Sampler (HVAS)	1 in every 6 days	At minimum, monitoring must be carried out concurrently at three (3) locations, including the locations indicated in Figure A or any alternative location ^[7] agreed to in writing by the administering authority.	NA	0.5 µg/m ³ ^[1]
Nickel and its compounds measured as the total metal content in (PM ₁₀ fraction)	Calendar year average	High Volume Air Sampler (HVAS)	1 in every 6 days	At minimum, monitoring must be carried out concurrently at three (3) locations, including the locations indicated in Figure A or any alternative location ^[7] agreed to in writing by the administering authority.	NA	0.02 µg/m ³ ^[1]
Nickel and its compounds	Rolling 24 hour average based on 1 hour averages	Continuous Metals Analyser ^[5]	Continuous ^[6]	At minimum, monitoring must be carried out concurrently at the two locations 1 and 2 ^[9] as depicted on figure A or any alternative locations ^[7] agreed to in writing by the administering authority.	0.2 µg/m ³ ^[2]	NA
Zinc and its compounds	Rolling 24 hour average based on 1 hour averages	Continuous Metals Analyser ^[5]	Continuous ^[6]	At minimum, monitoring must be carried out concurrently at the two locations 1 and 2 ^[9] as depicted on figure A or any alternative locations ^[7] agreed to in writing by the administering authority.	12 µg/m ³ ^[2]	NA

^[1] Limits based on Environmental Protection (Air) Policy 2008.

^[2] Department of Environment and Heritage Protection trigger based on a no worsening effect on the air environment from the activity.

^[3] A non TEOM instrument may be used if it can be demonstrated to meet equivalent detection limits and measurement accuracy. If a conversion factor is necessary to enable interpretation of data against HVAS results, this must be provided to the administering authority on request.

^[4] Department of Environment and Heritage Protection trigger based on the *Ambient Air Lead Guideline Value Derivation for Glencore's Port of Townsville Operations* report dated 19 January 2017.

^[5] An example of a Continuous Metals Analyser is an X-ray Fluorescence (XRF) method analyser such as an X-act or similar provided it uses a Total Suspended Particulates inlet.

^[6] Continuous monitoring is monitoring that captures data equal to at least 75 percent of the total possible data required in any period (excluding during natural disaster events such as cyclones) of:

- a. twelve (12) calendar months; and
- b. three (3) calendar months; and
- c. twenty four (24) hours.

^[7] Locations must be representative of actual operating and meteorological conditions for the sample frequency period.

^[8] The administering authority will give due consideration to natural events (such as bushfires, dust storms, and cyclones) when determining compliance with this limit.

^[9] Trigger Levels do not apply at location 2 (Lennon Drive) until 1 February 2018.

Associated monitoring requirements

1. All monitoring devices must be effectively calibrated and maintained in accordance with the manufacturer's instructions and/or relevant Australian Standard.
2. Air monitoring must be in accordance with the current edition of the administering authority's Air Quality Sampling Manual.
3. Monitoring and sample analysis must be in accordance with the most recent edition of the following:
 - a) Australian Standard AS/NZS 3580.1.1 - Methods for siting and analysis of ambient air. Part 1.1: Guide to siting air monitoring equipment;
 - b) Australian Standard AS/NZ 3580.9.3- Methods for sampling and analysis of ambient air Method 9.3: Determination of suspended particulate matter—Total suspended particulate matter (TSP)—High volume sampler gravimetric method;
 - c) Australian Standard AS 3580.9.6 'Ambient air - Particulate matter - Determination of suspended particulate PM10 high-volume sampler with size-selective inlet -Gravimetric method;
 - d) Australian Standard AS3580.9.15 'Methods for sampling and analysis of ambient air - Determination of suspended particulate matter - Particulate metals high or low volume sampler gravimetric collection - Inductively coupled plasma (ICP) spectrometric method'
 - e) Australian Standard AS/NZS 3580.10.1 - Methods for sampling and analysis of ambient air. Method 10.1: Determination of particulate matter-Deposited matter-Gravimetric method; and
 - f) Any alternative method of monitoring which may be permitted by the 'Air Quality Sampling Manual' as published from time to time by the administering authority.

Table B3: Dust Deposition Trigger Values and Limits.

Quality Characteristic ⁽¹⁾	Limit type/measurement period	Monitoring frequency	Monitoring locations	Trigger level
Arsenic and its compounds as arsenic ^[2]	Calendar year average	Monthly	At minimum, monitoring must be carried out concurrently at three (3) locations, including the locations indicated in Figure A or any alternative location agreed to in writing by the administering authority.	4 µg/m ² /day
Cadmium and its compounds as cadmium ^[2]	Calendar year average	Monthly		2 µg/m ² /day
Lead and its compounds as lead ^[2]	Calendar year average	Monthly		100 µg/m ² /day
Dust deposition (total insoluble matter)	Monthly average	Monthly		120 mg/m ² /day

⁽¹⁾ Australian Standard AS/NZS 3580.10.1 - Methods for sampling and analysis of ambient air. Method 10.1: Determination of particulate matter-Deposited matter-Gravimetric method

⁽²⁾ Metal analysis is to be carried out in accordance with the methodology in appendix A of AS/NZS3580.10.1

B12 By 31 March each year, the environmental authority holder must have an appropriately qualified person produce a report that, as a minimum:

- a) determines whether compliance with Condition B11 has been achieved for the previous calendar year; and
- b) provides a review of the effectiveness of the monitoring program* required by Condition B8.

*Note - a collective review under the collaborative Port of Townsville monitoring program may be used to satisfy this requirement.

B13 In the event of any monitoring showing exceedance of any trigger value* specified in **Table B2 – Ambient Air Quality Trigger Values and Limits** or **Table B3 – Dust Deposition Trigger Values and Limits** at or beyond the Port of Townsville boundary as depicted in **Figure A – Port of Townsville boundary monitoring locations** the environmental authority holder must:

1. complete an investigation to identify the potential cause of the exceedance taking into account all available monitoring data, and:
 - a) if the investigation shows that the exceedance is not caused or contributed to by the environmental authority holders activities then no further action is required and this must be advised to the administering authority within ten (10) business days.
 - b) if the investigation shows that the exceedance is caused or contributed to by the environmental authority holders activities, provide a written report to the administering authority within three (3) months of the date of the monitoring results showing an exceedance, outlining:
 - i. the potential for environmental harm being caused or likely to be caused by the exceedance; and
 - ii. details of the investigation carried out including a review of the measures and procedures for the control of airborne emissions; and
 - iii. actions taken or to be taken to minimise environmental harm.

*Note: Where no operations have occurred within the relevant period or operations have not included mineral concentrates that contain the quality characteristic of the trigger value exceeded then no action is required of the environmental authority holder.

- B14 By 1 March 2018 the environmental authority holder must develop, document, implement, and comply with an operational (near field) air quality monitoring program for all activities involving the loading or unloading of ships with bulk mineral concentrates. This program must as a minimum:
- a) Be developed by an appropriately qualified person; and
 - b) Identify and include sufficient monitoring locations that provide results representative of the emissions; and
 - c) Include operational trigger levels and appropriate corrective management response actions to minimise the release of contaminants; and
 - d) Include the use of continuous, real time air quality monitoring; and
 - e) Maximise data and monitoring equipment availability; and
 - f) Be utilised as part of any investigation undertaken pursuant to condition B13.
- B15 The environmental authority holder must ensure all continuous monitoring results required by the conditions of this environmental authority are reviewed regularly during bulk mineral concentrate ship loading and ship unloading to ensure compliance with condition B11.
- B16 From 31 December 2017 onwards, the environmental authority holder must ensure all continuous air monitoring data as required in **Table B2 – Ambient Air Quality Trigger Values and Limits** of this environmental authority is electronically available to the administering authority on a daily basis.

- B17 From 31 December 2017 onwards, the environmental authority holder must make air monitoring data as required in **Table B2 – Ambient Air Quality Trigger Values and Limits** and **Table B3 – Dust Deposition Trigger Values and Limits** of this environmental authority publically available in a prominent position on the company website or a suitable third parties website, within 14 days of obtaining the data.

Note: Monitoring data that has not been validated following commissioning of monitoring equipment required for compliance with condition B10 is not subject to this condition for 30 calendar days or until validated whichever is the sooner.

- B18 Prior to any significant increase in the amount of any lead containing product handled, the environmental authority holder must have an appropriately qualified person model[#] the predicted emissions to air and determine the impacts of the increase on air quality with specific consideration given to:
- a) The cumulative impacts of the increase; and
 - b) The ambient air quality trigger values and limits identified in **Table B2 – Ambient Air Quality Trigger Values and Limits** and **Table B3 – Dust Deposition Trigger Values and Limits**.

[#] An air model that encompasses the entire Port of Townsville air shed incorporating the increase may be used to satisfy this requirement.

End of Conditions for Schedule B

SCHEDULE C - WATER

Release of Contaminants to Waters

- C1 The only contaminants permitted to be released from the licensed place at the release point W1 are stormwater runoff waters from the stormwater settlement pond.

Monitoring

- C2 Monitoring must be undertaken and records kept of contaminant releases to waters from the discharge location for the quality characteristics and not less frequently than specified in Table 1 – Contaminant release limits to water. All determinations of the quality of contaminants released must be:
- (a) Made in accordance with methods prescribed in the latest edition of the Department of Environment and Heritage Protection Water Quality Sampling Manual.
 - (b) Carried out on samples that are representative of the discharge.

Table 1 – Contaminant release limits to water

Monitoring Point	Discharge Location	Quality Characteristics	Release Limit			Monitoring Frequency
			Minimum	80 th Percentile	Maximum	
W1	Stormwater runoff waters after passing through the stormwater settlement pond to waters described as Cleveland Bay at a location adjacent to the stormwater settlement pond	Suspended Solids		30mg/L	100mg/L	Not less than each time a release occurs for all parameters listed
		pH	6.0		9.0	
		Electrical Conductivity				
		Total Alkalinity (as CaCO ₃)				
		Available Ammonia, Nitrate, Nitrite			500ug/L	
		Total Phosphorus			50ug/L	
		Fluoride Ions				
		Chlorine Ions				
		Calcium Ions				
		Sodium Ions				
		Potassium Ions				
		Total Dissolved Ions				
		Sulphate				
		TPH (C10 –C36)			5mg/L	
		Benzene			0.95mg/L	
		Toluene			0.3mg/L	
		Ethyl Benzene			0.14mg/L	
		Xylene			0.38mg/L	
		Total Arsenic			100ug/L	
		Total Cadmium			50ug/L	
		Total Copper			100ug/L	
		Total Nickel			500ug/L	
		Total Zinc			2000ug/L	
		Total Lead			100ug/L	
		Total Magnesium				
		Total Antimony				

Monitoring Of Volume of Release

- C3 The quantity of contaminants released must be determined by a method acceptable to the administering authority.

Washdown Pond

- C4 The washdown pond shall be constructed of or lined with a suitable impervious material and shall be designed to be at least capable of containing stormwater runoff and other wastes directed to it from a 72 hour rainfall event having an annual recurrence interval of 10 years.
- C5 Any overflow from the washdown pond shall be directed to the stormwater settlement pond.
- C6 The washdown pond shall be fitted with an oil absorbent boom.

Stormwater Settlement Pond

- C7 The stormwater settlement pond shall be constructed of or lined with a suitable impervious material and shall be designed to be at least capable of containing stormwater runoff from a 24 hour rainfall event having an annual recurrence interval of 10 years.
- C8 The stormwater settlement pond shall be fitted with an oil absorbent boom.

Bunding

- C9 All fuel tank storages must be banded so that the capacity of the band is sufficient to contain at least 100 % of the largest storage tank plus 10 % of the second largest tank within the band.

Vehicle Washing Facility

- C10 Drains and bunds must be provided to ensure surface stormwater runoff is excluded from the washing area.
- C11 A vehicle wash facility must be provided and maintained for the use of all vehicles leaving the concentrate storage facility.
- C12 Contaminants generated by vehicle washing activities must not be discharged to any waters or the stormwater drainage system except in accordance with the requirements of this environmental authority.
- C13 Contaminants generated from the Vehicle Washing Facility are to be directed to the washdown pond.

End of Conditions for Schedule C

SCHEDULE D - NOISE**Emission of Noise**

- D1 In the event of a complaint being received by the administering authority about noise that the administering authority considers is reasonable, then the emission of noise from the activity must not result in levels greater than those specified in Schedule D Table 1 except during such reasonable period as may be required to implement noise abatement measures or until the circumstances which gave rise to the complaint are resolved.

Schedule D Table 1

Noise Level at a Noise Sensitive Place Measured as the Adjusted Maximum Sound Pressure Level $L_{Amax adj, T}$	Period
background noise level plus 5 dB(A)	7 am - 6 pm
background noise level plus 5 dB(A)	6 pm - 10 pm
background noise level plus 3 dB(A)	10 pm - 7 am
Noise Limits at a Commercial Premises Measured as the Adjusted Maximum Sound Pressure Level $L_{Amax adj, T}$	Period
background noise level plus 10 dB(A)	7 am - 6 pm
background noise level plus 10 dB(A)	6 pm - 10 pm
background noise level plus 8 dB(A)	10 pm - 7 am

End of Conditions for Schedule D

SCHEDULE E – WASTE MANAGEMENT

General

- E1 Waste must not be burned or allowed to burn on the site or removed and burnt elsewhere unless specifically permitted by an environmental authority.
- E2 Records of trade waste agreements must be made available for inspection to an authorised person on request.
- E3 An area must be set aside for the segregation and storage of recyclable solid wastes.
- E4 Where a no-cost recycling service is available, recyclable waste must not be deposited in the general waste stream.

Waste Storage and Handling Conditions

- E5 Drum storage of waste must be within roofed areas provided with impervious concrete bases and bund walls.
- E6 The base and walls of all banded areas must be maintained free from gaps or cracks.

Off Site Movement

- E7 Where regulated waste is removed from the licensed place (other than by a release as permitted under another schedule of this environmental authority), the registered operator of the activity must monitor and record the following:
 - a) the date, quantity and type of waste removed; and
 - b) name of the waste transporter and/or disposal operator that removed the waste; and
 - c) 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 condition).

- E8 Regulated waste must not be sent for disposal at any facility without the written approval of the person operating that facility.

Records

- E9 Records must be maintained for a period of 5 years for all wastes mentioned in this schedule

Notification of Improper Disposal of Regulated Waste

- E10 If the environmental authority holder becomes aware that a person has removed waste from the licensed place and disposed of the waste in a manner which is not authorised by this environmental authority or improper or unlawful, then the environmental authority holder must, as soon as practicable, notify the administering authority of all relevant facts, matters and circumstances known concerning the disposal.

End of Conditions for Schedule E

SCHEDULE F - DEFINITIONS

Key terms and/or phrases used in this document are defined in this section. 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 the Department of Environment and Heritage Protection or its successors or predecessors.

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

background means noise, measured in the absence of the noise under investigation, as $L_{A90,T}$ being the A-weighted sound pressure level exceeded for 90% of the time period of not less than 15 minutes, using Fast response.

bulk mineral concentrate means unpackaged and loose mineral concentrates

calendar year average means the average over a period of 12 months beginning on 1 January.

$L_{A, \max \text{ adj, T}}$ means the average maximum A-weighted sound pressure level, adjusted for noise character and measured over any 10 minute period, using Fast response.

lead concentrate means any mineral concentrate product where the composition of the product includes greater than 21% by weight of lead.

lead containing products means any bulk mineral concentrate product that contains lead at 1% by weight or greater

measures means the broadest interpretation and includes plant, equipment, physical objects, monitoring, procedures, actions, directions and competencies.

mg/L means milligrams per litre.

new mineral product or bulk material means any mineral product or bulk material not previously handled by the environmental authority holder in the previous 12 months. Does not include the same product or material from a different mine or supplier.

records include breach notifications, written procedures, analysis results, monitoring reports, monitoring results, monitoring data, and monitoring programs required under a condition of this authority.

rolling 12 month average based on 1 month averages means the average of the previous 12 months for each month of the year.

rolling 3 month average based on 1 month averages means the average of the previous 3 months for each month of the year.

rolling 24 hour average based on 1 hour averages means the average of the previous 24 hours for each hour of the day.

sensitive place includes the following and includes a place within the curtilage of such a place reasonably used by persons at that place:

- a) a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
- b) a motel, hotel or hostel; or
- c) a kindergarten, school, university or other educational institution; or
- d) a medical centre or hospital; or
- e) a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 2004* or a World Heritage Area; or
- f) a public thoroughfare, park or garden; or

- g) for noise, a place defined as a sensitive receptor for the purposes of the Environmental Protection (Noise) Policy 2008.

significant increase means an increase:

- a) of greater than 10% in volume of any product from that handled per year in any of the previous 5 consecutive calendar years; or
- b) in any volume to that previously modelled for the same product.

Transportable Moisture Limit (TML) means the maximum moisture content of a cargo that is considered safe for transportation in ships to manage liquefaction risk and cargo instability.

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, roadside gutter, stormwater run-off, and groundwater and any part-

80th percentile means not more than one (1) of the measured values of the quality characteristic is to exceed the stated release limit for any five (5) consecutive samples for a sampling point at any time during the environmental activity(ies) works

End of Conditions for Schedule F

Schedule G – Figures

Figure A – Port of Townsville boundary monitoring locations.

