

Notice

Environmental Protection Act 1994

Environmental Protection Order

This environmental protection order is issued by the administering authority pursuant to section 358 of the Environmental Protection Act 1994.

Capricorn Copper Pty Ltd
Level 3, 232 Adelaide Street
Brisbane, QLD, 4000

Your reference: E-100127178
Our reference: 101/0008746; C-CPLPO-100127175

20 September 2021

Dear Sir/Madam

Take notice: that under the *Environmental Protection Act 1994* (the Act) this environmental protection order (EPO) is issued to Capricorn Copper Pty Ltd ACN 106 396 801 (hereafter referred to as 'you') by the administering authority. The administering authority is the Chief Executive of the Department of Environment and Science (the department).

The EPO is issued in respect to your activities at the Capricorn Copper Mine, undertaken on the mining leases specified on environmental authority EPML00911413 (the EA) and located on land described as Lot 4 on Plan UN 803944, Lot 1 on Plan TG 38 and Lot 5 on Plan CP 865892 (the Site).

A. Grounds

This EPO is issued on the following grounds:

- To require you to take reasonable measures to secure compliance with the general environmental duty under section 358(d)(i) of the Act. The general environmental duty (the GED) is detailed under section 319 of the Act and states the following:

*A person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm (the **general environmental duty**).*

- To require you to take reasonable measures to secure compliance with condition G5-2 of the EA. Condition G5-2 of the EA states the following:

By 1 November of each year, storage capacity must be available in each regulated dam, to meet the Design Storage Allowance (DSA) volume for the dam.

- To require you to take reasonable measures to secure compliance with condition G5-4 of the EA. Condition G5-4 of the EA states the following:

The holder must, immediately on becoming aware that a regulated dam will not have the available storage to meet the DSA volume on 1 November of any year, act to prevent the occurrence of an unauthorised discharge from the regulated dam.

The facts and circumstances forming the basis for these grounds are:

1. You are the holder of the EA which authorises mining activities at the Site.
2. You undertake various activities at the Site pursuant to the EA, including mining copper ore and mineral processing.
3. There is significant risk of environmental harm associated with the mining activities, including the storage of a substantial volume of contaminated water within the regulated dams referred to as Esperanza Pit (EPit) and Mill Creek Dam (MCD), which has the potential to cause material or serious environmental harm if released in an uncontrolled manner to the receiving environment.
4. The EA sets the minimum standards and conditions which must be complied with, such that the risk is managed appropriately. These include:
 - a. Schedule G – Table 1 (Regulated Dams), which lists authorised regulated dams on the Site, including Esperanza TSF, EPit and MCD.
 - b. Condition G5-2, which requires storage capacity to be available in each regulated dam by 1 November each year to meet the Design Storage Allowance (DSA), being the amount of available volume required in order to prevent a discharge from that dam up to a specified annual exceedance probability (AEP) wet season.
5. Failure to achieve DSA by 1 November of any year presents an unacceptable risk of an unauthorised contaminant release.
6. On 30 April 2021, you provided a Water Balance Model Base Case Scenario for May 2021 to the department, which outlined the following:
 - a. The EPit water level was simulated to reach 204 metres Australian Height Datum (m AHD) (EPit DSA as at April 2021) on 25 January 2022; and
 - b. The MCD water level was below 214.5 m AHD (MCD DSA as at April 2021) at the start of the simulation. To maintain this water level in MCD would require additional transfer across to EPit.
7. The current EA, effective 25 August 2021, specifies that the DSA levels for EPit and MCD are 207.7 m AHD and 216.1 m AHD respectively.
8. You have advised that the water levels for EPit and MCD are 223.1 m AHD and 213.0 m AHD respectively, as of 2 September 2021.
9. As outlined above, information provided to the department indicates that the Site is currently operating above the maximum DSA level for EPit and will not achieve DSA for this structure by 1 November 2021.
10. North-West Queensland is known to have variable annual and seasonal rainfall, affected by local factors such as topography and vegetation, and broader scale weather patterns such as the El Niño–Southern Oscillation. Whilst annual average rainfall is 453mm, this region may experience extreme

rainfall events associated with tropical cyclones during the wet season (November–March), posing significant water management challenges and increasing the risk of an uncontrolled release from the Site.

11. The GED requires that the mining activities at the Site must not be carried out unless all reasonable and practicable measures to prevent or minimise environmental harm are taken.
12. The department considers that further reasonable and practicable measures are required to manage the regulated dams' spill risk and to reduce the water inventory at the Site to prevent or minimise the potential for environmental harm.

B. Requirements

In accordance with this EPO, you are required to do the following:

- 1) Take all reasonable steps to ensure that no Uncontrolled Release occurs from EPit or MCD.
- 2) Ensure that by 1 November 2022:
 - a) the water level in EPit is at or below 207.7 m AHD; and
 - b) the water level in MCD is at or below 216.1 m AHD.
- 3) You must take the following steps:
 - a) on and from the date of this EPO, retain suitably qualified and experienced persons to design, oversee and regularly review the performance of the water management system and updated water management arrangements in place; and
 - b) on and from the date of this EPO, maintain an accurate water balance model capable of being run at two business days' notice, to provide updated spill risks, and forward predicted storage volumes at appropriate intervals in EPit and MCD; and
 - c) on and from 1 November 2021, have in place sufficient plant, equipment, infrastructure, resources and personnel to ensure the competent management of the Site water inventory; and
 - d) on and from the date of this EPO, have in place a sufficient number of high efficiency evaporation units and take all reasonable steps to ensure such units are operating as required; and
 - e) on and from the date of this EPO, have in place a competent site-specific water treatment system and take all reasonable steps to ensure such system is operating as required; and
 - f) between 1 November and 30 April each year, have in place a suitably sized network of pumps and pipes, to allow for the transfer of water across the water management system and for the controlled release of treated water during authorised release conditions; and
 - g) release treated water from the EPit subject to the release of contaminant constraints set out in requirement 4; and
 - h) on and from the date of this EPO, minimise the capture of uncontaminated water from clean catchments, through suitably sized and installed diversions and any associated pumping systems; and
 - i) on and from the date of this EPO, minimise the importation of raw water to the Site from Lake Waggaboonya for Site operating purposes (as distinct from raw water drawn for domestic use in the Site camp).

Discharge Requirements

- 4) The release of contaminants to Gunpowder Creek must only occur:
- a) from Release Point W1; and
 - b) in a manner that ensures effective dilution and dispersion of contaminants through the use of an appropriately designed diffuser; and
 - c) when the Background Flow in Gunpowder Creek is equal to or exceeds 3 Cumecs (measured as the average background flow over a period of one hour); and
 - d) when the water quality limits for Release Point W1 and the minimum dilution rates are met for all contaminants specified in Table 1 – Discharge Quality Water Criteria.

Table 1 – Discharge Quality Water Criteria

Contaminant (mg/L unless specified otherwise) ¹	Dilution Rate and Water Quality Limit (maximum concentration unless specified otherwise)	
	Dilution Rate of 1:10	Dilution Rate of 1:20
Electrical conductivity (µs/cm)	5,000	10,000
Sulfate	3,500	7,000
Total suspended solids	30	60
pH (pH Units)	6.5 to 9.0	
Arsenic	0.25	
Cadmium	0.002	
Chromium	0.001	
Cobalt	5	
Copper	2.5	5
Lead	0.05	0.1
Zinc	10	
Dissolved oxygen	Must be greater than 2	
Oil & grease	No detectable film or odour	

¹ All metals and metalloids must be measured and reported as both total (unfiltered) and dissolved (field filtered) concentrations. The limit applies to the total metal concentration.

NOTE: For the avoidance of any doubt:

- a) water quality for Release Point W1 may be sampled in pipe; and
 - b) the dilution rate of 1:10 means that the flow in Gunpowder Creek must be at least 10 times the volume of treated water being released at any time; and
 - c) the dilution rate of 1:20 means that the flow in Gunpowder Creek must be at least 20 times the volume of treated water being released at any time; and
 - d) if at any time during a release event you become aware that any one or more of the conditions set out in this requirement are not or have not been met you must promptly cease release unless and until all the conditions are met.
- 5) For all releases of contaminants to Gunpowder Creek from Release Point W1, you must undertake monitoring in accordance with the requirements in Table 2 – Monitoring Requirements, and measure and record the results.

Table 2 – Monitoring Requirements

Type of monitoring	Monitoring Point/s	Timing/frequency	Requirements
Background flow in Gunpowder Creek.	GPA2	Measured continuously during release.	Measures continuous background flow in Cumecs at recorded time intervals not exceeding 60 minutes.
Volume and rate of release.	Release Point W1	Measured continuously during release.	Measures total daily volume released in megalitres/day and continuous release rate in Cumecs at recorded time intervals not exceeding 60 minutes.
Quality at release point.	Release Point W1	For pH and electrical conductivity – measured continuously during release. For all other contaminants listed in 'Table 1 – Discharge Quality Water Criteria' – one sample at commencement of release and a minimum of once daily thereafter for the duration of release.	Quality of water released, including concentration of contaminants and sample time and date. Water quality for Release Point W1 may be sampled in pipe.
Upstream water quality in Gunpowder Creek.	GPU1 and GPA2	For electrical conductivity at GPU1 only – measured continuously during release. For all contaminants listed in 'Table 1 – Discharge Quality Water Criteria' – one sample at commencement of release*, a minimum of once daily thereafter for the duration of release and one sample between 24 and 48 hours after the end of release. *Note: Samples must be representative of Gunpowder Creek water quality upstream of any potential influence from controlled releases at W1. Compliance with this requirement may be achieved where the requisite sample is taken up to 2 hours prior to a release commencing; and this sample can be demonstrated as reasonably representative of water quality in Gunpowder Creek at commencement of that release.	For GPU1 only – You must take all reasonable and practicable measures to monitor electrical conductivity in µs/cm at recorded time intervals not exceeding 60 minutes. Quality of water for all contaminants listed in 'Table 1 – Discharge Quality Water Criteria' and sample time and date. Note: Only in the event that safe access to GPU1 is unavailable, GPA2 monitoring results may be used as a proxy (for GPU1). Records should be kept to document when and why there was no safe access to GPU1.

Downstream water quality in Gunpowder Creek.	GPA5, GPA7 and GPD1	For pH and electrical conductivity at GPD1 only – measured continuously during release. For all contaminants listed in 'Table 1 – Discharge Quality Water Criteria' – one sample at commencement of release*, a minimum of once daily thereafter for the duration of release and one sample between 24 and 48 hours after the end of release. *Note: Samples must be representative of Gunpowder Creek water quality immediately prior to potential influence from a controlled release at W1. Compliance with this requirement may be achieved where the requisite sample is taken up to 2 hours prior to a release commencing; and this sample can be demonstrated as reasonably representative of water quality in Gunpowder Creek at commencement of that release.	For GPD1 only – records electrical conductivity in $\mu\text{S}/\text{cm}$ and pH at intervals not exceeding 60 minutes. Quality of water for all contaminants listed in 'Table 1 – Discharge Quality Water Criteria' and sample time and date. Note: GPA5 samples may be collected as close to this monitoring location as practicable when there is no safe access. Records should be kept to document when and why there was no safe access to GPA5.
Inputs from Greenstone Creek into Gunpowder Creek.	GS2	One sample within two hours of a release commencing, a minimum of once daily thereafter for the duration of release, and one sample between 24 and 48 hours after the end of release.	Quality of water for all contaminants listed in 'Table 1 – Discharge Quality Water Criteria' and sample time and date.

5a) The locations of the monitoring points listed in Table 2 – Monitoring Requirements are specified in Table 3 – Monitoring Point Locations.

Table 3 – Monitoring Point Locations

Monitoring Point	Coordinates (GDA94, Zone 54)	
	Latitude	Longitude
GPU1	S 19° 42' 27.4"	E 139° 20' 13.9"
GPA2	S 19° 41' 19.6"	E 139° 21' 24.2"
GPA5	S 19° 41' 06.5"	E 139° 21' 46.1"
GPA7	S 19° 40' 42.9"	E 139° 22' 27.6"
GS2	S 19° 40' 49.1"	E 139° 22' 34.3"
GPD1	S 19° 40' 00.4"	E 139° 22' 42.7"

- 6) All sampling conducted to determine water quality must be conducted in accordance with the latest edition of the department's monitoring and sampling manual (published online), unless otherwise approved by the department in writing.
- 7) All other data determinations made in relation to this EPO (for example streamflow measured in Cumecs), must be consistent with documented protocols developed by suitability qualified and experienced persons, based on recognised standards and/or methods that are consistent with best practice.
- 7a) All water quality samples except electrical conductivity, pH and dissolved oxygen must be analysed at a NATA Accredited Laboratory.
- 7b) All monitoring data required to be measured continuously must be accessible in real time at the Site.

Reporting

- 8) You must provide a report to the department every month while the EPO remains in force. The report must contain the following information at minimum:
 - a) summary of all actions taken to comply with each requirement of this EPO; and
 - b) the water quality, level of stored water (in m AHD) and available storage volume in each regulated dam; and
 - c) rainfall data; and
 - d) details of the volume of water imported to the Site from Lake Waggaboonya for Site operating purposes (as distinct from raw water drawn for domestic use in the Site camp) on each day, and any corresponding change in the total volume of water at the Site; and
 - e) records of monitoring undertaken in accordance with requirement 5 of this EPO.
- 9) You must provide the forward trajectory water balance model maintained in accordance with requirement 3 of this EPO, and an associated report for the Site, to the department:
 - a) on 1 October 2021 and 1 May 2022; and
 - b) within 3 business days after a request by the department.
- 10) The water balance report provided in accordance with requirement 9 of this EPO must, at a minimum, include the following information:
 - a) the technical criteria on which the assessment has been based, and
 - b) the relevant data and facts on which the assessment has been based and the source of that material.
- 11) You must keep all records in relation to this EPO and provide such records to the department within 72 hours after a written request. Such records include but are not limited to:
 - a) the details of and associated assessments of the steps taken as per requirement 3; and
 - b) the water quality data in accordance with requirement 5.

Definitions

- 12) The following definitions apply to this EPO:
 - a) 'Background Flow' means streamflow in Gunpowder Creek upstream of the Mt Oxide Rd Causeway, measured in Cumecs.

- b) 'Cumecs' means cubic metres per second.
- c) 'Mt Oxide Rd Causeway' means the causeway on Mt Oxide Road that spans Gunpowder Creek adjacent to the Site and is located at S 19°41'19.57" (latitude) E 139°21'23.96" (longitude).
- d) 'Release Point W1' means the release point on Gunpowder Creek located at S 19°41' 20.0" (latitude) and E 139°21' 24.9" (longitude), downstream of the Mt Oxide Rd Causeway.
- e) 'the Site' means the Capricorn Copper Project on land described as Lot 4 on Plan UN 803944, Lot 1 on Plan TG 38 and Lot 5 on Plan CP 865892, on the mining leases specified on environmental authority EPML00911413, located approximately 120 kilometres north-west of Mt Isa in the State of Queensland.
- f) 'Uncontrolled Release' means any unlawful release of contaminants.

C. Obligations

If you propose to dispose of the place or business to which the EPO relates, you **must** advise the buyer of the existence of this EPO.

If you cease to carry out the activity to which this EPO relates, you **must** give written notice of ceasing to carry out the activity to the department within 10 days of ceasing the activity.

Take notice:

- the requirements of this order take effect immediately upon service of the order;
- failure to comply with this order is an offence under the Act;
- this order remains in force until the earlier of:
 - 1 November 2022; or
 - the date on which the water levels in each of the EPit and the MCD are at or below DSA.

D. Penalty

Failure to comply with an EPO is an offence.

- 1) The maximum penalty for an individual for wilfully contravening an EPO is 6250 penalty units, totalling \$834, 062.50 or five years imprisonment.
- 2) The maximum penalty for a corporation for wilfully contravening an EPO is 31,250 penalty units, totalling \$4,170,312.50.
- 3) The maximum penalty for an individual for contravening an EPO is 4500 penalty units, totalling \$600,525.
- 4) The maximum penalty for a corporation for contravening an EPO is 22,500 penalty units, totalling \$3,002,625.

Failure to provide written notice to the buyer is an offence.

- The maximum penalty for an individual is 50 penalty units, totalling \$ 6,672.50.
- The maximum penalty for a corporation is 250 penalty units, totalling \$ 33,362.50.

Failure to provide written notice within 10 business days of ceasing the activity to the department is an offence.

- The maximum penalty for an individual is 50 penalty units, totalling \$ 6,672.50.

- The maximum penalty for a corporation is 250 penalty units, totalling \$ 33,362.50.

Section 3 of the Penalties and Sentences Regulation 2015 prescribes the monetary value of a penalty unit.

E. Reviews and appeals

The provisions regarding review of decisions and appeals may be found in sections 519 to 539 of the Act.

A person who is dissatisfied with certain decisions of the department, may be able to apply to have the department review that original decision.

Generally, a request to have a decision reviewed must be made:

- within 10 business days of the decision being notified to the person;
- be supported by enough information to enable the department to decide the application for review; and
- be made using the application for review of an original decision form ([ESR/2015/1573](#)).¹

Where an application has been made for a decision to be reviewed, the applicant may also apply to the relevant court for a stay of the decision to secure the effectiveness of the review.

Once the original decision has been reviewed, a person who is dissatisfied with the review decision may be able to appeal against that decision to the relevant court within 22 business days after receiving notice of the review decision.

A person whose interests are or would be adversely affected by a decision of the department may also be able to request a statement of reasons for a decision or a statutory order review under the *Judicial Review Act 1991*.

For further information about reviews and appeals see the information sheet - internal review and appeal to the Planning and Environment Court ([ESR/2015/1572](#)). You may have other legal rights or obligations and should seek your own legal advice.

Should you have any queries in relation to the notice, please contact the department on telephone number (07) 4222 5334.



Signature



Date

Jacob Toe
Delegate of the Chief Executive
Department of Environment and Science
Environmental Protection Act 1994

Enquiries:

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¹ This is the publication number. The publication number can be used as a search term to find the latest version of a publication at <www.ehp.qld.gov.au>.

