

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-100023426

Our reference: 101/0008746; C-CPLPO-100002494

18 September 2020

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 ("Capricorn Copper") (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:

1. 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 in s319 of the Act which 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**).*

2. 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.



3. 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:

4. You are the holder of the EA which authorises mining activities at the site.
5. You undertake various activities at the site pursuant to the EA, including mining copper ore and mineral processing.
6. The department considers that there are significant risks of environmental harm associated with the activities that are carried out at the site, including the storage of a substantial volume of contaminated water within Esperanza Pit (EPit) and Mill Creek Dam (MCD) which has the potential to cause material and/or serious environmental harm if released in an uncontrolled manner to the receiving environment.
7. 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.
8. Failure to achieve DSA by 1 November of any year presents an unacceptable risk of an unauthorised contaminant release.
9. On 1 November 2019, the department received notification from Capricorn Copper advising that the EPit and MCD would not have available storage capacity to meet DSA.
10. The following documents specified the following water levels for regulated dams at the site:
 - a. The November 2019 Regulated Dams Annual Inspection Report (RPEQ 11913):
 - i. EPit: 221.130 metres Australian Height Datum (m AHD); and
 - ii. MCD: 215.118m AHD.
 - b. The Cardno Capricorn Copper Mine Water Levels Survey Report Q194158, 14 November 2019:
 - i. EPit: 221.08m AHD; and
 - ii. MCD: 215.09m AHD.
11. As such, DSA was not met prior to the 2019 wet season and you were in breach of condition G5-2.
12. In 2019 you commissioned GHD to prepare a report, provided to the department in May 2020, which identified the following:

- a. The [then] mine water balance model indicated a potential risk of an uncontrolled spill from MCD into Gunpowder Creek in 2020 or 2021.
 - b. The modelled risk of a spill had been exacerbated by a significant rainfall event in February 2019, which added an "extreme amount" of runoff to EPit and MCD. As such normal methods of water reduction in the pit (i.e. natural evaporation, mechanical evaporation, and pumping transfer to the Esperanza TSF for additional evaporation) had not made a significant impact on the EPit water levels.
 - c. The mine processing relies on raw water from Lake Waggaboonya for processing operations over and above the capacity of facilities at the mine to treat mine affected water from the EPit and MCD.
 - d. A number of options that could be implemented to reduce the volume of water stored on-site and mitigate the risk of uncontrolled release, including increased EPit evaporators, increased water treatment plant throughput to reduce Lake Waggaboonya raw water introduction into the system, transfer of mine affected water to an adjacent mine for use in processing operations and construction of a temporary bund to Esperanza Pit to prevent overflow of RL222m rock bar to MCD.
13. You have advised that you have taken or are implementing a number of actions to bring the site into compliance, including: increasing on-site water treatment capacity to reduce the sites reliance on raw water drawn from Lake Waggaboonya.
 14. You have advised that you are taking steps to mitigate the risk of an uncontrolled release of contaminated water from EPit and MCD via proposed changes to the configuration and capacity of on-site discharge infrastructure for the purposes of discharging treated water (subject to water quality requirements) during authorised discharge events. You have further advised that the proposed change in configuration and capacity has been informed by an updated water balance model and scenario-based risk modelling undertaken by a suitably qualified person.
 15. Notwithstanding the actions taken or proposed to be taken by you, you have advised that DSA will not be met for the EPit and may not be met for MCD by 1 November 2020 (the commencement of the 2020 wet season).
 16. You have advised that the water levels for EPit and MCD are 225.6 m AHD and 216.6 m AHD, respectively, as at 17 September 2020.
 17. As outlined above, information provided to the department indicates that the site is currently operating above the maximum DSA levels for EPit and MCD and will not achieve DSA by 1 November 2020.
 18. The final issue of the Bureau of Meteorology (BOM) Northern Rainfall Onset (NRO) outlook for season 2020/21 was issued on 27 August 2020. The outlook indicates that there is around 70% chance La Niña will develop in the coming months, three times the average likelihood. During La Niña, the northern rainfall onset typically occurs earlier than usual; central and eastern parts can also experience above average rainfall.
 19. The BOM Weekly Tropical Climate Note – 15 September 2020, amongst other matters, stated
 - *Oceanic and atmospheric indicators continue to indicate further progress towards La Niña;*
 - *All surveyed climate models indicate La Niña will develop by October, while roughly half forecast a negative Indian Ocean Dipole (IOD) developing during spring 2020.*

- *The first rains for northern Australia are likely to be earlier than normal over much of Queensland and the Northern Territory*

20. The GED requires that the activities at the site must not be carried out unless all reasonable and practicable measures to prevent or minimise harm are taken.
21. 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 204 m AHD; and
 - b) the water level in MCD is at or below 214.5 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 update 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 2020, 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 (for example release through an appropriately designed diffuser); and
 - c) when the Background Flow in Gunpowder Creek is equal to or exceeds 3 Cumec's (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 water 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	Location	Timing/frequency	Requirements
Background flow	The monitoring location established in requirement 8c) of this EPO	Continuously during release	Records continuous background flow in Cumec's at recorded time intervals not exceeding 60 minutes
Volume and rate	Release Point W1	Continuously during release	Records total daily volume released in megalitres/day, and continuous release rate in Cumec's with recorded time intervals not exceeding 60 minutes
Quality at release point	Release Point W1	For pH and electrical conductivity - 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.
Reference Site Upstream quality in Gunpowder Creek	The monitoring location established in requirement 8b) of this EPO	One sample at the 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	Quality of water for all contaminants listed in Table 1 – Discharge Quality Water Criteria and sample time and date
Downstream quality in Gunpowder Creek	The monitoring location established in requirement 8a) of this EPO	For pH and electrical conductivity – continuously during release. For all other contaminants – one sample at the commencement of release, and a minimum of once daily thereafter for the duration of release. For all contaminants – 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

- 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 Cumec's), 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.
- 8) On or before 16 October 2020, you must advise the department of the coordinates (GDA94) of, and establish and maintain the following monitoring sites:
 - a) a site along Gunpowder Creek that is downstream of Release Point W1 and upstream of the confluence with Greenstone Creek, that is capable of detecting any water quality impacts from a contaminant release at the Site; and
 - b) a site along Gunpowder Creek that is upstream of any potential impact from the release of contaminants undertaken pursuant to this EPO; and
 - c) a site along Gunpowder Creek that is located upstream of the Mt Oxide Rd Causeway (for monitoring background Gunpowder Creek flow rates).

Reporting

- 9) 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.
- 10) 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 November 2020, 1 May 2021, 1 October 2021 and 1 May 2022; and
 - b) within 3 business days after a written request by the department.
- 11) The water balance report provided in accordance with requirement 10 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.
- 12) You must keep all records in relation to this EPO and provide such records to the department within 3 business days 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

14) 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 19°41'19.57"S (latitude) 139°21'23.96"E (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 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 Nina Groves of the department on telephone number (07) 4536 8329.

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>.

Notice
Environmental Protection Order



Signature

18/9/2020

Date

Gus Gonzo

Manager Compliance

Delegate of the Chief Executive

Department of Environment and Science

Environmental Protection Act 1994

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