

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.

Thomson Resources Ltd (ACN 138 358 728)
Level 1, 80 Chandos Street
ST LEONARDS, NSW 2065

Cc: david@thomsonresources.com.au

Your reference: EPML04238116

Our reference: C-CPLPO-100330308 ; E-100330352; 101/0019392

2/11/2022

Dear Directors,

Take notice: that under the *Environmental Protection Act 1994* (EP Act) this environmental protection order (EPO) is issued to Thomson Resources Ltd (ACN 138 358 728) (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 with respect to the activities of Thomson Resources Ltd (ACN 138 358 728) on mining lease (ML) 100106 and land described as Lot 28 Crown Plan MPH14454 and Lot 2 Survey Plan SP140743, situated at Texas, QLD (the premises).

A. Grounds

This EPO is issued on the following grounds:

To secure compliance by you with the “general environmental duty” pursuant to section 358(d)(i) of the Act.

1. The general environmental duty is defined pursuant to section 319(1) of the Act as follows:

*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 secure compliance by you with conditions of Environmental Authority (EA) EPML04238116 pursuant to section 358(d)(iii) of the Act.

The conditions of the EA which are directly relevant are conditions A3, F1, H17, H20, and H22, which are as follows:



A3 *The environmental authority holder 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 properly calibrated.*

F1 *Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters, except as permitted under the conditions of this environmental authority.*

H17 *The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.*

H20 *By 1 November of each year, storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the Design Storage Allowance (DSA) volume for the dam (or network of linked containment systems).*

H22 *The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.*

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

1. You are:
 - (a) the registered owner of Lot 28 on MPH14454 and Lot 2 on SP140743;
 - (b) the holder of mining lease ML100106;
 - (c) the holder of EA EPML04238116;
 - (d) the person with legal ownership, possession and control over the premises.
2. EA EPML04238116 authorises environmentally relevant activities including mining and associated activities at the premises, subject to the conditions of the EA.
3. There is disturbed land and infrastructure on the premises including an open cut pit, waste rock dumps, heap leach pads, processing ponds, a processing plant and water storages that have the potential to generate contaminated water and/or seepage.
4. There are significant risks of environmental harm associated with the activities authorised by EA EPML04238116 on the premises. This includes, but not limited to:
 - (a) environmental risks associated with disturbance to the land resulting from the activities;
 - (b) environmental risks associated with the mobilisation of contaminants in rainfall runoff from disturbed areas;
 - (c) environmental risks associated with the discharge of mine wastes (e.g. process waters); and
 - (d) environmental risks associated with equipment, plant and infrastructure utilised in the carrying out of activities (e.g. residual process chemicals, chemical and fuel storages etc).
5. Active management of these risks is required to mitigate the potential for environmental harm.
6. Condition A3 requires you as the holder of EA EPML04238116 to install all measures, plant and equipment necessary to ensure compliance with the conditions of the EA, and to maintain and operate such measures, plant and equipment in a proper and efficient condition.
7. Condition F1 provides that the release of contaminants directly or indirectly to waters is not permitted except as authorised under the EA, condition F2 sets the authorised release points and F3 provides for specific contaminant release limits (from the authorised release points).

8. Conditions H1 to H38 of the EA deal with regulated structures. Conditions H14 to H18 deal with the mandatory reporting level (MRL) for regulated structures, other than low consequence category structures. Condition H17 provides that you must, immediately upon becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated structure.
9. Conditions H19 to H22 deal with the design storage allowance (DSA) for regulated structures or networks of shared containment systems with shared DSA volumes. Condition H22 provides that you must, immediately on becoming aware that a regulated dam or network of linked containment systems will not have the available storage to meet the DSA volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment system.
10. Conditions H23 to H26 of the EA deal with inspection and reporting requirements for regulated structures.
11. One of the primary ways by which the environmental risks set out in paragraph 4 above are managed at the premises, is through capturing and containing contaminated water, to prevent the release of contaminated water from the premises.
12. The water storages at the premises that capture and/or contain contaminated water include Terminal Dam and the Process Ponds (Barren, Intermediate and Pregnant), East Dam and East Sump, West Dam and West Sump, the Pit, Middle Dam and New Dam.
13. The department holds data in relation to the contaminated water quality onsite. This water typically contains high acidity (low pH levels), salts and metal concentrations (including zinc, aluminium and copper).
14. The contaminated water is of particularly poor quality, and typically exceeds relevant Australian and New Zealand Guidelines for Fresh and Marine Water Quality guideline levels and the EA EPML04238116 authorised contaminant release limits.
15. The environmental values and water quality objectives for the receiving waters are listed in the document titled [Queensland Border Rivers and Moonie River basins Environmental Values and Water Quality Objectives \(des.qld.gov.au\)](#).
16. The premises typically has a positive water balance which if unmitigated, results in the accumulation of contaminated water.
17. The contaminated water stored and generated at the premises needs to be actively and appropriately managed, such that it does not accumulate to a point where an uncontrolled and/or unlawful release occurs to the receiving environment.
18. Such a release occurred on 1 and 2 December 2021, when there was an uncontrolled release of contaminated water. This release occurred from East Dam. East Dam water at the time had a low pH of approximately 3, high level of electrical conductivity, and contained a range of heavy metals that exceeded many of the published guideline values in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality.
19. The release was estimated as being 1.15ML in volume. The contaminants released were in excess of the release limits authorised for release under condition F3 of EA EPML04238116.
20. Water storages at the premises, referred to in paragraph 12 above (with the exception of West Sump and New Dam) were the subject of a report titled 'Thomson Resources 2021 Regulated Dams Inspection, Texas Silver Project, 15 March 2022' (the Report).

21. The Report was completed following an inspection and review of regulated structures at the premises. The Report states that the assessment was carried out in accordance with requirements of the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933) (the Manual).
22. The Manual sets out the department's requirements for consequence category assessment and certification of the design of 'regulated structures'.
23. The Report notes that the consequence categories for the majority of structures were last assessed in 2018 (Water Solutions, 2018) with West Dam reassessed in 2021 (Engeny, 2021).
24. The Report assigned consequence categories for relevant water storages as follows:

Structure	Failure to Contain - Overtopping	Failure to Contain – Dam Break	Overall Consequence Category
Terminal Dam & Process Ponds	High	High	High
East Dam	Significant	High	High
East Sump	Significant	High	High
The Pit	High	N/A – no plausible failure mode	High
West Dam	Significant	Significant	Significant
Middle Dam	Significant	Significant	Significant

25. Given the consequence category, each of these water storages is a regulated structure.
26. Regulated structures are either dams or levees.
27. A minimum available storage, called a DSA is required to be estimated for regulated structures in accordance with the Manual.
28. The hydraulic performance requirement for each of the regulated structures as per the Manual is provided in the Report as follows:

Structure	Minimum Spillway Capacity	Design Storage Allowance (DSA)	Mandatory Reporting Level (MRL)
Terminal Dam & Process Ponds	1:1,000 AEP	1:100 AEP	1 in 100 AEP 72hr
East Dam	1:1,000 AEP	1:20 AEP	1 in 10 AEP 72hr
East Sump	1:1,000 AEP	1:20 AEP	1 in 10 AEP 72hr
The Pit	N/A	1:100 AEP	1 in 100 AEP 72hr
West Dam	1:100 AEP	1:20 AEP	1 in 10 AEP 72hr
Middle Dam	1:100 AEP	1:20 AEP	1 in 10 AEP 72hr

29. The MRL is a level at which the dam has a remaining available volume equivalent to the extreme storm storage (ESS) allowance. This available storage is critical to manage the risk associated with short duration intense rainfall events.
30. You have provided a report prepared by Engeny and titled, System Design Plan and DSA Assessment Texas Silver Project, 14 September 2022 (Engeny 2022). Engeny 2022 nominates DSA volumes and MRL volumes for the premises as per Table 1 below. Importantly the DSA volume is calculated on the basis of an assessment that includes assumed water loss using 9 evaporators, 6 in the Pit (operating at 12.5l/s each), and 3 in West Dam (operating at 11.6l/s each). As at 2 November 2022, it is the department's understanding that there are only 3 evaporators (operating at 12.5l/s each) located onsite and there is a significant difference between the modelled water losses and those currently being achieved (due to the number of evaporators in use).

Table 1

Structure	DSA Volume calculated by Engeny 2022 ^{1,2}	Capacity as of 20 October 2022 ³	Compliance with DSA	MRL/ESS calculated by Engeny 2022	Exceedance of MRL/ESS ³
Terminal Dam & Process Ponds	157.4 ML	17.8ML	Non-compliant	77.1 ML	Yes
East Dam	12.5 ML	9.0ML	Non-compliant	3.1 ML	Yes
East Sump	Combined with East Dam	4ML	Non-compliant	21.9 ML	
The Pit	42 ML	7.9ML	Non-compliant	27.2 ML	Yes
West Dam	19.7 ML	36.4ML	Compliant	58.9 ML	Yes
Middle Dam	1.2 ML	6.2ML	Compliant	3.0 ML	No

¹Design simulation margin of 35% adopted per Engeny 2022

²Noting that assumptions that underpin the assessment are not currently reflected in site operations.

³Assessment relates to volumes notified as being current 20 October 2022

31. On-site water management must allow for and provide the DSA volume in each regulated structure going into each new wet season (that is, on 1 November each year).
32. The intent of a DSA volume is to provide reasonable certainty that design performance criteria for containment will be met in any forthcoming wet season. Failure to ensure a regulated structure achieves the required DSA volume at the onset of each wet season (that is, on 1 November each year) poses a heightened risk of an uncontrolled contaminant release.
33. On 8 September 2022, during a meeting between you and the department, you advised that you would no longer be able to finance the cost of hiring or running evaporators at West Dam. You also advised that it was not financially viable to increase the number of evaporators at the premises, or increase the

running time of existing evaporators. It is understood that subsequent to that advice, 12 evaporators, 6 from the Pit and 6 from West Dam were removed from the premises.

34. On 9 September 2022, the department issued you with an Environmental Protection Order (E- 100309951) requiring you to take action to reduce the risk of an unauthorised release of contaminants to waters and to ensure compliance with its general environmental duty. Requirement 1 of the EPO required you to “...*take all necessary actions to prevent a release of contaminants from the premises, unless such release is otherwise permitted under the EA*”.
35. On 19 October 2022, the department issued you an Emergency Direction (E- 100327975) pursuant to section 467 of the Act. The direction was in response to continued accumulation of contaminated water at the premises; limited actions by you to reduce contaminated water volumes in an appreciable volume; and predictions of a significant weather event.
36. In response to E- 100327975, amongst other matters, you sourced approximately 40 tonnes of lime and commenced lime treatment of Middle Dam and New Dam, with a view remove this water from the contaminated water inventory, via irrigation to land.
37. As of 21 October 2022, the water reduction measures being implemented by you were:
 - a. Three evaporators (12.5l/s each) in the Pit. From the period 7 October 2022 – 20 October 2022, the evaporators ran for 24 hours and approximately **1.497ML** of water was removed from the premises using this method. It is noted that you increased running time of the evaporators following issuance of E- 100327975 on 19 October 2022.
 - b. Utilisation of the irrigation system on Heap Leach Pad 4. On 21 October 2022, you advised the department that the irrigation system ran for 132.5 hours but “...*but no attempt has been made to quantify the water removed via this method as there are too many unknowns.*”
38. Environmental Authority (EA) EPML04238116 requires Thomson Resources Ltd to:
 - a) **H17** The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.
 - b) **H20** By 1 November of each year, storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the Design Storage Allowance (DSA) volume for the dam (or network of linked containment systems).
 - c) **H22** The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.
39. As of 20 October 2022, Terminal Dam and Process Ponds, East Dam, East Sump, the Pit and West Dam have insufficient storage entering into the 2022/2023 wet season (commencing 1 November 2022) as either the DSA volume or ESS/MRL volume (or both) has not been met.
40. It is the department's assessment that you are not prepared for the wet season, and despite E- 100309951, there is a high risk of an unauthorised discharge of contaminated water from the site.
41. A release from East Dam or Terminal Dam would migrate into the headwaters and drainage lines of Alpin Creek and eventually the Dumaresq River.
42. The Dumaresq River supports significant environmental and agricultural values and flows across the border into NSW. It forms part of the Border Rivers Catchment which is one of the northern-most catchments for the Murray-Darling Basin.

43. As of 2008, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) reported on average 34% of available surface water within the Border Rivers Catchment was extracted for use. Land use is dominated by cattle and sheep grazing predominantly on the tablelands and western plains, with dryland crops grown on the slopes (source: <https://www.mdba.gov.au/water-management/catchments/border-rivers>).
44. In October 2016, the Department of Science, Information Technology and Innovation undertook a water quality and biological assessment of Alpin Creek Catchment. It was found that *“Alpin Creek and its tributaries appears to have good water quality and be in moderate ecological health, containing diverse and abundant aquatic biota. Any alteration to the water quality downstream of the Texas Silver Mine has the potential to disturb and alter a potentially significant aquatic ecological community”*.
45. It is considered that any release of contaminated water in appreciable quantities from the premises, is likely to cause serious or material environmental harm to the downstream environment
46. The Bureau of Meteorology reports that we are in a La Niña weather pattern. La Niña events increase the chances of above rainfall for northern and eastern Australia during spring and summer.
47. The department considers that additional measures are available to you to manage the contaminated water inventory, to prevent or minimise environmental harm, to meet the obligations outlined in the Manual, and to secure compliance with conditions of EA EPML04238116, Requirement 1 of the EPO (E-100309951) and the general environmental duty.
48. The department considers this includes measures such as
 - a) reducing the water accumulation during rainfall events on the premises by diverting clean water catchments;
 - b) constructing additional containment capacity to service East Dam catchment to meet ESS/MRL;
 - c) installing appropriate pumping and transfer capacity and associated redundancy;
 - d) operating and increasing enhanced evaporation capacity at the premises; and
 - e) operating and increasing water treatment activities and capacities at the premises.
49. On the basis of the information set out in facts and circumstances, the department is of the view that there is an unacceptable risk of material and/or serious environmental harm occurring as a result of the current very high water inventory at the premises and associated risk of a spill.
50. The department considers that it is reasonable to require you to take further action in order to secure compliance with the general environmental duty and with conditions of EA EPML04238116, such that you accelerate the reduction of the contaminated water inventory at the premises.

B. Requirements

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

1. Commencing on 14 November 2022 and until 5 December 2022, you must remove a minimum of 7 megalitres of contaminated water from the site water inventory every 7 days.
2. Commencing on and from 5 December 2022, you must remove a minimum of 10 megalitres of contaminated water from the site water inventory every 7 days.
3. All contaminated water removed under requirements 1 and 2 must be done in a way that minimises the potential for environmental harm.

4. Commencing on and from 14 November 2022, you must have in place and operational adjacent to West Dam, enhanced evaporators that have an effective water destruction capacity of at minimum 16.3 litres per second (l/s).
5. Commencing on and from 5 December 2022, you must have in place and operational in or adjacent to the Pit, enhanced evaporators that have an effective water destruction capacity of at minimum 35.3 l/s.
6. Requirements 2, 4 and 5 continue in effect until such time as a Registered Professional Engineer of Queensland who is a suitably qualified and experienced person, confirms that each of the regulated structures on the premises has available storage volume to meet the relevant DSA and ESS/MRL obligations as per the EA EPML04238116 and the Manual.
7. By 10 am on 12 December 2022, you must have in place and operational, an effective evaporative irrigation system covering to the extent practicable, the full surface area of Heap Leach Pad 4. You must use your best endeavours to quantify the volume of water removed via evaporation through operation of this system (in l/s).
8. Commencing on and from 2 November 2022, all enhanced evaporators and evaporative irrigation systems on the premises must be operated at all times during daylight hours, unless it is not safe to do so, it is raining or they are under scheduled maintenance. The time and reason for non-operational periods must be recorded.
9. By 5pm 30 November 2022, you must provide a report to the department that details a proposed method of removal and a proposed temporary storage location on the premises, for residual treatment sludge in New and Middle Dams. The report must include relevant design, management actions and implementation timeframes. The implementation timeframe for sludge removal must not exceed 28 February 2023. The report is to be sent to southwest.es@des.qld.gov.au.
10. By 5pm 30 November 2022, you must provide a report to the department prepared by an Appropriately Qualified Person (AQP), that separately details a method/s proposed that would result in the removal of an additional 5 and separately 10 megalitres, of contaminated water from the site water inventory every 7 days using appropriate measures that minimise the potential for environmental harm. The report must include relevant designs, management actions, implementation timeframes and any risks, controls and recommendations, for the proposed water reduction method. The report is to be sent to southwest.es@des.qld.gov.au.
11. From the date of this EPO until such time as each of the premises regulated structures have sufficient storage capacity to contain an MRL/ESS event, you must provide a written report to the department weekly by 10am each Friday, on the actions taken to comply with this Notice. The report is to be sent to southwest.es@des.qld.gov.au. The weekly report must include at a minimum:
 - a) daily rainfall totals for the premises for the reporting period;
 - b) an updated and accurate assessment of the water storage capacity and water volumes within each regulated structure and New Dam; and
 - c) for the weekly reporting period, the estimated daily volume of water removed from the water inventory, listed for each day, separated by each method, including details of the measurements, calculations and assumptions that the estimate is based; and
 - d) records made of any non-operational periods of enhanced evaporators and/or evaporative irrigation systems per requirement 8.

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 EP Act;
- this order remains in force until further notice from the administering authority.

D. Penalty

It is important that you know the impact to you personally as an individual or as a corporation for not meeting your obligations.

Failure to comply with an EPO is an offence.

- The maximum penalty for a corporation for wilfully contravening an EPO is 31,250 penalty units, totalling \$4,492,187.50 .
- The maximum penalty for a corporation for contravening an EPO is 22,500 penalty units, totalling \$3,234,375.00.

Failure to provide written notice to the buyer of the existence of the order is an offence.

- The maximum penalty for a corporation is 250 penalty units, totalling \$35,937.50.

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

- The maximum penalty for a corporation is 250 penalty units, totalling \$35,937.50.

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

E. Reviews and appeals

The provisions regarding reviews of decisions and appeals are found in sections 519 to 539 of the EP Act.

A person who is dissatisfied with an original decision made by the Department of Environment and Science (the department) may apply to have that decision internally reviewed.

Information about initiating an appeal in relation to this notice is contained within the [Internal Reviews and Appeals Information Sheet](#) (available at www.qld.gov.au using the publication number ESR /2015/1742 as a search term)

A request for review or appeal is to be made using the approved form '[Application for review of original decision](#)' (available at www.qld.gov.au using the publication number ESR/2015/1573 as a search term.

Applications for reviews are to be sent to Permit and Licence Management, Department of Environment and Science: via email at palm@des.qld.gov.au , or by mail to the following address: GPO. Box 2454, Brisbane, QLD, 4001.

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 be able to request a statement of reasons for a decision or a statutory order review under the *Judicial Review Act 1991*.

You may have other legal rights or obligations and should seek your own legal advice.

Pursuant to section 540 of the Act, the department is required to maintain a register of certain documents and information authorised under the Act. A copy of this document will be kept on the public register. The register is available for inspection by members of the public who are able take extracts, or copies of the documents from the register. Documents that are required to be kept on the register are published in their entirety, unless alteration is required by the Act. There is no general discretion allowing the department to withhold documents or information required to be kept on the public register. For more information on the department's public register, search 'public register' at www.qld.gov.au. For queries about privacy matters please email privacy@des.qld.gov.au or telephone 13 74 68.

Should you have any queries in relation to the notice, please contact Tariq Khan on 4529 8324.



Signature

2/11/2022

Date

Gus Gonzo

Manager Minerals, Compliance

Delegate of the Chief Executive

Department of Environment and Science

Environmental Protection Act 1994

Enquiries: Tariq Khan

COMPLIANCE CENTRE: Toowoomba

Ph: (07) 4529 8336

Email: southwest.es@des.qld.gov.au