



Application for Licence Amendment

Part V Division 3 of the *Environmental Protection Act 1986*

| | |
|-----------------------|---|
| Licence Number | L5319/1988/12 |
| Licence Holder | Tronox Management Pty Ltd |
| ACN | 009 343 364 |
| File Number | DER2015/000793 |
| Premises | Cooljarloo Mineral Sands Mine 12051 Brand Highway COOLJARLOO WA 6507 Legal description – Mining tenement M70/1398 |
| Date of Report | 5 May 2022 |
| Decision | Revised licence granted |

Samara Rogers

A/MANAGER, RESOURCE INDUSTRIES

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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1. Decision summary

Licence L5319/1988/12 is held by Tronox Management Pty Ltd (Licence Holder) for the Cooljarloo Mineral Sands Mine (the Premises), located on mining tenement M70/1398 in Cooljarloo, Western Australia.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the Premises. As a result of this assessment, Revised Licence L5319/1988/12 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the department has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at <https://dwer.wa.gov.au/regulatory-documents>.

2.2 Application summary

On 14 January 2022, the Licence Holder submitted an application to the department to amend Licence L5319/1988/12 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The amendment being sought is to allow the transport and deposition of 250kt of stockpiled mineral sands concentrate from the Jurien Project (M70/435) to the Cooljarloo site. The material will be transported by covered road trains to the existing north HMC stockpile. It will then be transported by uncovered trucks within the premises and deposited on top of ore within the approved mining area at Cooljarloo (area shown in Appendix 3). The material will then be dredge mined along with in-situ ore and processed through the existing Cooljarloo wet concentrator.

There are no proposed changes to categories or premises throughputs in this amendment.

2.2.1 The stockpiled material

The 250kt of stockpiled material from Jurien Bay is proposed to be added to the Cooljarloo deposit over a period of 1-2 years. This means it will represent less than 1% of the throughput of the Cooljarloo concentrator for this period.

The material is not expected to contain any acid sulphate soils or potentially acid sulphate soils because:

- the source ores contain/interspersed with considerable amount of limestone,
- elemental sulphur was found to be less than 0.01% in all lab assays from the Jurien drilling program,
- mineral processing likely to have removed any ASS or PSS to tailings (clay fines), and
- the stockpiles have been stored above water table for in excess of twenty years.

The applicant states that the concentrations of some naturally occurring radionuclides may be higher in the stockpiled material than for the Cooljarloo ore, however this is not expected to make a significant change to the radionuclide content of the product or waste streams. The management of radiation is regulated by the Department of Mines, Industry Regulation and Safety, and does not form part of this assessment. There is a Radiation Management Plan in place for the premises.

There are no other differences identified between the stockpiled Jurien Bay material and the Cooljarloo ore that expected to change the emissions and discharges from the premises.

2.3 Part IV of the EP Act

Ministerial Statement 1158 applies to the premises. The proposed amendment of additional feedstock does not appear to trigger any requirements for changes / reassessment under Part IV of the EP Act. The disturbance footprint will not change, and the proposal will not impact on any matters assessed under the EPA Report 1692, which mainly focussed on impacts associated with the dredge mining activities related to the orebodies Woolka, Harrier and Kestrel, plus the TSF. Key environmental factors / principles identified under EPA report relate to Flora and veg, terrestrial fauna and inland waters. Assessment and management plans required under Part IV assessment appear sufficient and unlikely to require reassessment.

3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk assessments* (DWER 2020).

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises operation which have been considered in this Amendment Report are detailed in Table 1.

Table 1 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 1: Licence Holder controls

| Emission | Sources | Potential pathways | Proposed controls |
|--|--|-------------------------|---|
| Dust | Vehicle movement and lift-off of ore from trucks | Air/windborne pathway | <ul style="list-style-type: none">• Incoming road transport trailer (to HMC stockpile) tarped• Watering of unsealed haul routes• existing fugitive dust conditions on licence |
| Runoff of contaminated stormwater from HMC stockpile | Stockpiling of concentrate | Runoff to surface water | <ul style="list-style-type: none">• Drainage control at HMC stockpile (also referred to as the ROM) – (material offloading site) |

3.1.2 Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020), the Delegated Officer has excluded employees, visitors and contractors of the Licence Holder's from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 2 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental siting* (DWER 2020)).

Table 2: Sensitive human and environmental receptors and distance from prescribed activity

| Human and heritage receptors | Distance from prescribed activity |
|---|---|
| Billinue Aboriginal Community (BAC) (population ~43) | SE corner of Mullering Farm, within the prescribed premises (Figure 1 and Figure 2 in Appendix 2). The BAC supplies the licence holder with native seeds for propagation and rehabilitation purposes. ~2.3km south east of the MRF; more from the proposed deposition area |
| Heritage sites: Mullering Brook (site ID 4640) Muralang Pool Camp (site ID 4642) Cooljarloo Well (site ID 4639) | See Figure 1 and Figure 2 in Appendix 2 |
| Environmental receptors | Distance from prescribed activity |
| Geomorphic wetlands – Cervantes South | See Figure 3 in Appendix 2 |
| Department of Biodiversity, Conservation and Attractions (DBCA) - managed lands and waters: 'Class A' Conservation Reserves | Unnamed Nature Reserve (R40916) 650m south west of premises boundary. Unnamed Nature reserve is protected under MS1158 condition 6-1. |
| DBCA-managed lands and waters: 'Class C' Conservation Reserves | Unnamed Nature Reserve (R41986) Immediately adjacent to eastern site boundary |
| <u>Priority ecological communities</u> Priority 3 - Banksia Dominated Woodlands of the Swan Coastal Plain | Within the prescribed premises boundary (Figure 4 in Appendix 2) |
| <u>Threatened Flora</u> Surveys summarised by EPA assessment for MS1158 identified the following threatened species may occur within the vicinity of the site and the proposed Cooljarloo west development envelope: <ul style="list-style-type: none"> Andersonia gracilis (Andersonia gracilis) – Vulnerable under the <i>Biodiversity Conservation Act 2016</i> (BC Act) and Endangered under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) Anigozanthos viridis subsp. terraspectans (Dwarf green kangaroo paw) – Vulnerable under both the BC Act and EPBC Act Macarthuria keigheryi (Keighery's macarthuria) – Endangered under both the BC Act and EPBC Act Paracaleana dixonii (Sandplain duck orchid) – Vulnerable under the BC Act and Endangered under the EPBC Act. | Assessment of threatened flora has taken place as part of the Cooljarloo West proposal (MS1158). Threatened flora are protected under conditions in section 5 of MS1158. Closest surveyed location 2km west of premises |
| <u>Priority Flora</u> | Assessment of priority flora has taken place as part of the Cooljarloo West proposal (MS1158). |

| | |
|---|---|
| <p>Surveys summarised by EPA assessment for MS1158 identified 25 priority flora species within the vicinity of and to the west of site.</p> <p>Species considered to be more important by the EPA assessment as compared to the proportion of the regional population present are:</p> <p>Priority 2 - Chordifex reseminans</p> <p>Priority 3 - Babingtonia urbana Guichenotia alba</p> <p>Priority 3 Stylidium hymenocraspedum</p> | <p>Priority flora are protected under conditions in section 5 of MS1158.</p> <p>Closest surveyed location 300m east of MRF.</p> |
| Threatened/Priority Fauna | <p>Area to the west of site includes Carnaby's cockatoo foraging habitat.</p> <p>A total of 18 fauna species of conservation significance have been recorded within and/or in the vicinity of the Premises as part of terrestrial fauna studies since 1986. A summary of species is included within the decision report for the December 2019 licence review.</p> |
| Proclaimed groundwater area <i>Rights in Water and Irrigation Act 1914 (RIWI Act)</i> Gingin Groundwater Area | <p>6 mbgl – 20 mbgl across premises area.</p> <p>Groundwater salinity in the superficial aquifer ranges from 120 – 18,000 mg/L (HGEO, 2021)</p> <p>Groundwater flow direction is to the south-west (Figure 3)</p> |

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are incomplete they have not been considered further in the risk assessment.

Where the Licence Holder has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the Delegated Officer considers the Licence Holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

Additional regulatory controls may be imposed where the Licence Holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 3.

The Revised Licence L5319/1988/12 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises.

The conditions in the Revised Licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 3. Risk assessment of potential changes to emissions and discharges from the Premises during operation

| Risk Event | | | | | Risk rating ¹ C = consequence L = likelihood | Licence Holder's controls sufficient? | Conditions ² of licence | Justification for additional regulatory controls |
|--|-------------------------------------|---|--------------------------|---------------------------|---|---------------------------------------|------------------------------------|---|
| Source/Activities | Potential emission | Potential pathways and impact | Receptors | Licence Holder's controls | | | | |
| Operation | | | | | | | | |
| On-site transport and deposition of Jurien Bay concentrate | Dust | Air/windborne pathway causing impacts to vegetation | Listed in section 2 | Refer to Section 3.1.1 | C = Slight L = Unlikely Low Risk | Y | Existing condition 25 | It is unlikely that the bringing of or processing of Jurien Bay concentrate at the premises will materially change dust emissions from the premises. Existing fugitive dust condition on the licence is sufficient. |
| Changes in seepage to groundwater, particularly pH | Seepage from stockpile and tailings | Seepage | Groundwater; dredge pond | Refer to Section 3.1.1 | C = Slight L = Unlikely Low Risk | Y | Existing conditions | Material does not change the risk of seepage; therefore existing conditions are sufficient. |

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk assessments* (DWER 2020).

Note 2: Proposed Licence Holder's controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

4. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

Table 4: Consultation

| Consultation method | Comments received | Department response |
|---|---|---------------------|
| Licence Holder was provided with draft amendment on 29 April 2022 | Comments period waived, requested issued as soon as possible. | Progress to issue |

5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

5.1 Summary of amendments

Table 5 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Licence as part of the amendment process.

Table 5: Summary of licence amendments

| Condition no. | Proposed amendments |
|---------------|--|
| Front cover | Addition of handling Jurien Project concentrate as an assessed activity under the licence |
| 1 (table 1) | Deposition of Jurien Project Concentrate added as a specified emission (total tonnage and deposition area defined) |
| Schedule 1 | Figure 3 added – Authorised deposition area for concentrate from Jurien Project |

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.

Appendix 1: Application validation summary

| SECTION 1: APPLICATION SUMMARY | | | | | |
|---|---|---|------------|-----|-------------------------------------|
| Application type | | | | | |
| Amendment to licence | <input checked="" type="checkbox"/> | Current licence number: | L5319/1988 | | |
| | | Relevant works approval number: | | N/A | <input checked="" type="checkbox"/> |
| Date application received | | 14/1/22 | | | |
| Applicant and Premises details | | | | | |
| Applicant name/s (full legal name/s) | | Tronox Management Pty Ltd (009 343 364) | | | |
| Premises name | | Tronox Cooljarloo Mine Site | | | |
| Premises location | | Cooljarloo WA 6507 Cooljarloo Mining Lease M 70/1398 | | | |
| Local Government Authority | | Shire of Dandaragan | | | |
| Application documents | | | | | |
| HPCM file reference number: | | DWERDT550396; A2078366 | | | |
| Key application documents (additional to application form): | | Maps of haulage route and indicative deposition area | | | |
| Scope of application/assessment | | | | | |
| Summary of proposed activities or changes to existing operations. | | <p><i>Amendment to the operation of Cooljarloo mineral sands mine</i></p> <p>Tronox propose to transport approximately 250kt of stockpiled mineral sands concentrates and tailings from the Jurien Project (M70/ 435) to Cooljarloo for processing via the existing dredges and concentrator. This represents a small change in feed product for existing mineral sands mining and concentrating operations.</p> <p>Trucking between premises is outside the scope of Part V of the EP Act.</p> | | | |
| Category number/s (activities that cause the premises to become prescribed premises) | | | | | |
| Table 1: Prescribed premises categories | | | | | |
| Prescribed premises category and description | Assessed production or design capacity | Proposed changes to the production or design capacity | | | |
| Category 8: Mineral sands mining or processing: premises on which mineral sands ore is mined, screened, separated or otherwise processed. | 26,000,000 tonnes per annum | No change to assessed capacity – only composition of feed | | | |

| Legislative context and other approvals | | |
|--|--|---|
| Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input type="checkbox"/> |
| Does the applicant hold any existing Part IV Ministerial Statements relevant to the application? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Ministerial statement No: MS 1158 |
| Has the proposal been referred and/or assessed under the EPBC Act? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Reference No: |
| Has the applicant demonstrated occupancy (proof of occupier status)? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Mining lease / tenement <input checked="" type="checkbox"/> M70/1398 Expiry: 1 March 2041 – LO confirmed 10/2/22 that tenement is registered to applicant in Mineral Titles Online ASIC Extract not provided – not required for amendment. |
| Has the applicant obtained all relevant planning approvals? | Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> | Mining Tenement |
| Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | CPS No: N/A <ul style="list-style-type: none"> No clearing is proposed on the premises for this amendment. existing operations authorised under Part IV or the EP act |
| Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | No clearing is proposed. |
| Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | No changes to water licensing this amendment |
| Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Is the Premises situated in a Public Drinking Water Source Area (PDWSA)? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |

| | | |
|--|---|---|
| Is the Premises subject to any other Acts or subsidiary regulations (e.g. Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx) | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Mining Act 1978 |
| Is the Premises within an Environmental Protection Policy (EPP) Area? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Is the Premises subject to any EPP requirements? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Is the Premises a known or suspected contaminated site under the Contaminated Sites Act 2003? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <p>Classification: possibly contaminated – investigation required (PC–IR)</p> <p>Portion of the southern area of the premises</p> <p>Date of classification: 10 June 2018</p> |

Appendix 2: Figures showing locations of potential receptors

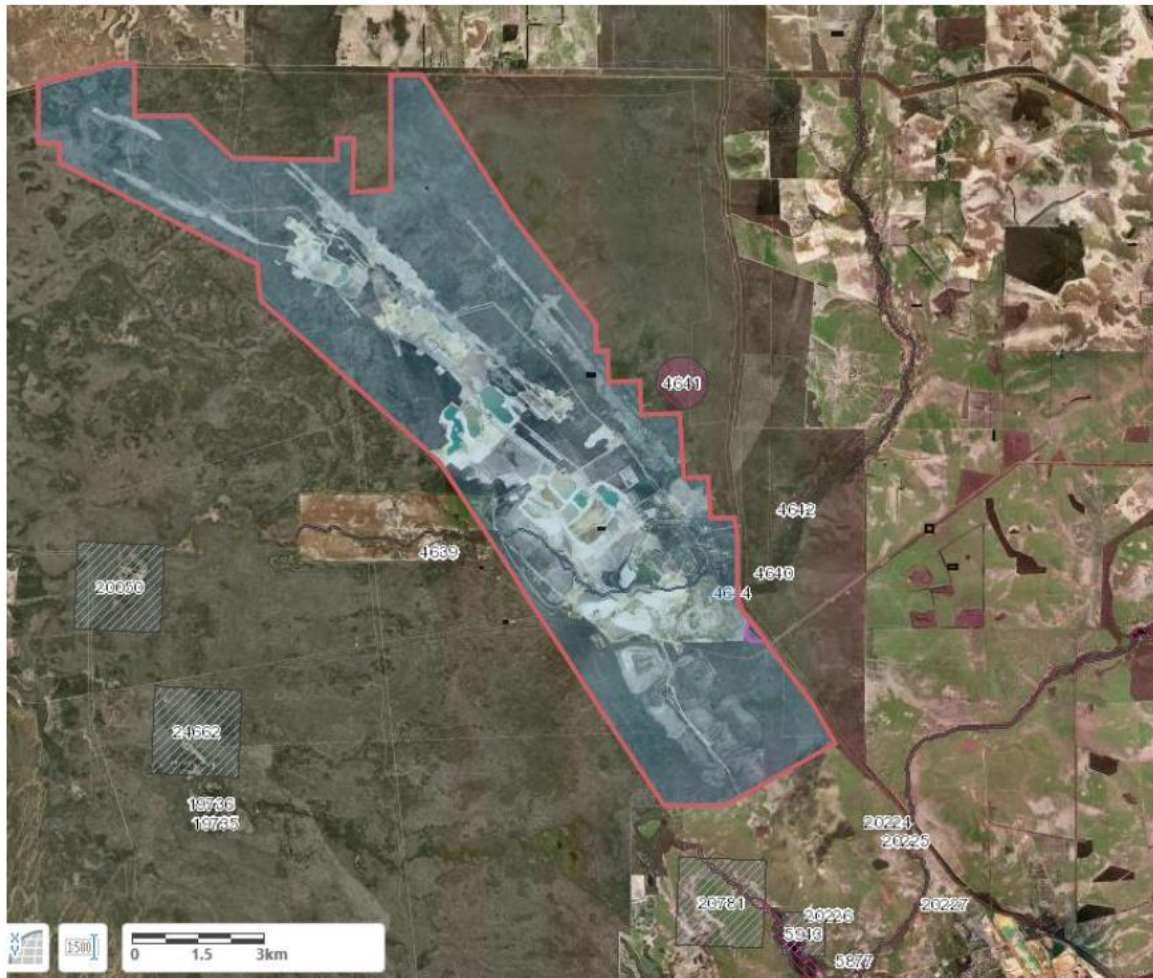


Figure 1: location of sensitive heritage receptors (site extent)



Figure 2: location of sensitive heritage receptors (zoomed in)



Figure 3: location of Geomorphic wetlands – Cervantes South



Figure 4: Threatened ecological communities – Banksia Dominated Woodlands of the Swan Coastal Plain (Endangered)

Appendix 3: Location of material offloading area within Cooljarloo premises

