



Application for Licence Amendment

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

Licence Number	L5939/1988/11
Licence Holder	Tronox Management Pty Ltd
ACN	009 343 364
File Number	DER2015/000624
Premises	Tronox Chandala Processing Plant Brand Highway, Muchea Western Australia Legal description – Lot M1261 on Diagram 5326, Brand Highway Muchea, WA as depicted in Schedule 1 of the revised Licence.
Date of Report	26/04/2024
Decision	Revised licence granted

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1. Decision summary

Licence L5939/1988/11 is held by Tronox Management Pty Ltd (licence holder) for the Tronox Chandala Processing Plant (the premises), located at Lot M1261 on Diagram 5326, Muchea.

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 L5939/1988/11 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the Department of Water and Environmental Regulation (DWER, department) has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at [DWER Regulatory documents | Western Australian Government \(www.wa.gov.au\)](https://www.wa.gov.au/government/publications/dwer-regulatory-documents).

2.2 Application summary

On 22 February 2024, the licence holder submitted an application to the department to amend licence L5939/1988/11 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The amendment sought is to allow for the construction and use of a temporary coal stockpile area on the premises. Works proposed to establish the temporary coal stockpile area include construction of a compacted limestone pad and limestone containment bund. No changes to the assessed premises throughput are proposed.

Coal is used on the premises as an input into the synthetic rutile kiln. Stockpiling of coal is already an approved activity at a permanent stockpile location. Due to local coal supply disruptions, the licence holder is now needing to source coal from outside Western Australia. The new coal supply will be delivered via shipments through the Bunbury Port.

The existing coal storage bins and stockpile on the premises are designed for multiple deliveries of local coal spaced over time therefore are relatively small. As the coal shipments will arrive at the premises in larger volumes, a larger coal storage facility is required to facilitate storage of coal shipments. The licence holder is planning to construct a permanent larger storage facility in the longer term (not within the scope of this application) however requires a temporary storage area to provide sufficient coal storage in the interim period while the larger permanent facility is constructed.

The licence holder anticipates that the temporary coal stockpile area will be required for approximately 6-8 months while a new permanent coal storage facility is constructed. The new permanent coal storage facility will be subject to a separate application.

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 the proposed construction and operation which have been considered in this Amendment Report are detailed in Table 1 below. Table 1 also details the 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
Construction			
Dust	Construction activities	Air/windborne pathway	Dust suppression systems (e.g. water cart, sprinklers). Day time construction (6am – 7pm Monday to Saturday). Dust monitoring.
Operation			
Dust	Coal stockpile (loading, unloading and storage) Vehicle movements	Air/windborne pathway	Dust suppression using water spray or chemical coating. Continuous dust monitoring of PM ₁₀ at the closest site boundary, downwind of the stockpile to determine compliance with existing conditions and the National Environment Protection (Ambient Air Quality) Measure 2016 (Ambient Air NEPM) relevant criteria. This dust monitoring will also inform dust management at the premises as per the Chandala Air Emissions Management Plan and Dust Management Procedure. Onsite vehicle speed limited to 15 km/hr. Regular passes of water cart and street sweeper.
Contaminated stormwater (low pH, coal sediments)	Coal stockpile	Infiltration	Limestone pad to provide a barrier to infiltration and neutralise low pH contaminated stormwater. Monthly groundwater monitoring that will measure pH, TDS, temperature, EC, Mn, Fe, Al, sulphate, and chloride at four existing bores around the coal stockpile.
		Overland runoff	Limestone containment bund on three sides (north, west and east) to mitigate stormwater ingress/egress and aid in neutralising runoff. Regular inspection of containment bunds A stormwater collection system comprising

Emission	Sources	Potential pathways	Proposed controls
			<p>a 2m³ collection sump at the northwestern corner of the stockpile area, a pump (10L/s) and a pipeline will be installed to manage stormwater.</p> <p>The limestone pad will be graded toward the collection sump. Runoff collected in the sump will be pumped via the pipeline into the closest existing stormwater catchment system to the south west.</p> <p>The sump will be monitored and maintained.</p>

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 receptors	Distance from prescribed activity
Farmhouse	2km east of proposed stockpile
Environmental receptors	Distance from prescribed activity
Underlying groundwater (non-potable)	1.6m below ground level
Chandala Brook	900m west of proposed stockpile
Tributary of Chandala Brook	200m east of proposed stockpile
Threatened Ecological Community - Priority 3 Flora	1.5km north-west of premises

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 L5939/1988/11 that accompanies this Amendment Report authorises emissions associated with the construction and operation of a temporary coal stockpile at 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 emissions and discharges from the Premises during construction and operation

Risk Event					Risk rating ¹	Licence Holder’s controls sufficient?	Conditions ² of licence	Reasoning
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder’s controls	C = consequence L = likelihood			
Construction								
Construction of temporary coal stockpile area	Dust	Air/windborne pathway causing impacts to public health and amenity	Farmhouse 2km east	Refer to Section 3.1	C = Minor L = Rare Low Risk	Yes	Existing conditions relating to dust: Condition 23, 24	The delegated officer has determined that no additional conditions are required as the existing dust related conditions (Condition 23 and 24) within the licence adequately address the risk of visible dust generation, which could impact the health and amenity of sensitive receptors. These conditions require the licence holder undertake measures to limit the generation and accumulation of dust.
Operation								

Risk Event					Risk rating ¹ C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions ² of licence	Reasoning
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
Unloading, loading of coal Vehicle movements Storage of coal in an open stockpile	Dust	Air/windborne pathway causing impacts to public health and amenity	Farmhouse 2km east	Refer to Section 3.1	C = Minor L = Unlikely Medium Risk	Yes	Condition 26 Existing conditions relating to dust: Condition 23, 24	The delegated officer considered the existing licence conditions for dust management (Condition 23 and 24) and the licence holder's proposed action to undertake dust monitoring to detect elevated ambient dust levels (which will be responded to in accordance with internal management plans) suitably mitigate the risk of dust impacts at sensitive resulting from the temporary coal stockpile. The proposed dust monitoring was included as a new licence condition.
Storage of coal in a stockpile	Contaminated stormwater	Soil infiltration causing soil acidification and contamination of soil and shallow groundwater	Soil and adjacent vegetation Groundwater 1.6m below ground level	Refer to Section 3.1	C = Minor L = Possible Medium Risk	Yes	Condition 39 Condition 40 <u>Condition 41, 42³</u>	The delegated officer considered the licence holder's proposed construction of the temporary stockpile pad with a limestone base will suitably mitigate the risk of low pH coal-contaminated water infiltrating and impacting groundwater therefore specified this as a construction requirement. Noting the licence holder also proposed monthly groundwater monitoring (listed in Table 1) to detect impact to groundwater the delegated officer determined to also include this as a requirement of the licence to detect whether any groundwater impact is occurring.

Risk Event					Risk rating ¹ C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions ² of licence	Reasoning
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
		Runoff causing contamination of soil and nearby water courses	Soil and adjacent vegetation Tributary 200m east Chandala Brook 900m west	Refer to Section 3.1	C = Minor L = Possible Medium Risk	Yes	Condition 40 Existing conditions relating to stormwater: Condition 30, 32, 34, 35 <u>Condition 41, 42³</u>	The proposed construction of the coal stockpile area with runoff management measures including grading of the limestone pad towards a collection sump fitted with a pump and pipeline to direct collected water to the existing containment on the premises, and limestone bunding will suitably limit the amount of both runoff and run-on at the stockpile, minimising the risk posed to the nearby water courses. These requirements were therefore included as construction conditions in the licence. Additional to the above the licence includes existing conditions 34 and 35 which require the protection and maintenance of all drainage infrastructure to ensure the constructed infrastructure is operated and maintained in a fit for purpose condition. The delegated officer considers these existing regulatory requirements sufficient to manage stormwater drainage infrastructure to prevent soil and groundwater contamination. These existing conditions will apply to the new drainage infrastructure.

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.

Note 3: Conditions 41 and 42 are department imposed conditions required for compliance reporting.

4. Consultation

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

Table 4: Consultation

Consultation method	Comments received	Department response
Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) advised of proposal (12 March 2024)	DEMIRS replied on 21 March 2024 advising that the licence holder requires authorisation under the Mining Act 1978 for the proposed activities.	The grant of the licence amendment does not imply authority will be granted under the Mining Act 1978.
Licence Holder was provided with draft amendment on 17 April 2024	The licence holder responded on 22 April 2024. Refer to Appendix 1 for comments.	Refer to Appendix 1.

5. Decision

The delegated officer has assessed the application and determined that the construction and operation of a temporary coal stockpile on the premises does not represent an unacceptable risk to public health or the environment. In reaching this conclusion the delegated officer has considered the following:

- the temporary coal stockpile will be constructed with a limestone pad and bunding which will mitigate the risk of contaminated (low pH) water impacts, with groundwater monitoring being implemented to monitor the effectiveness of this control;
- the temporary coal stockpile will be constructed with drainage controls to ensure runoff is collected and contained within the premises;
- the licence includes existing controls for management of dust and stormwater and drainage infrastructure; and
- additional dust monitoring will be undertaken to enable the licence holder to detect and respond to elevated ambient dust levels.

Licence consolidation

As part of this amendment the delegated officer has updated and consolidated the licence to include relevant amendment notices and align the instrument with the current licence format. In amending the licence, the delegated officer has:

- updated the format and appearance of the licence;
- revised condition numbers; and
- updated reporting requirements consistent with the 2022 *Notice of amendment and schedule of licences with amended reporting conditions*.

The obligations of the licence holder have not changed in updating and consolidating the licence therefore no additional risk assessment relating to previously assessed activities has been undertaken. The full details of the amendments to the licence are included in section 6.1.

6. 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.

6.1 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: Consolidation and proposed licence conditions in this amendment

Existing condition	Condition summary	Revised licence condition	Conversion notes
Definitions	Definitions	Definitions	Revised to current licence format and updated definitions. Additional definitions included associated with groundwater monitoring AS/NZS 5567.1, AS/NZS 5567.11, m BGL, and NATA accredited.
General Conditions			
G1	Annual Audit Compliance Report	Condition 1	New numbering and update to wording format
G2	Discharge points	Condition 2	
G3(a)	Reporting requirements	Condition 3	
G3(b)		Condition 4	
G4(a)	Reporting of exceeded licence limits	Condition 5	
G4(b)		Condition 6	
G4(c)		Condition 7	
Air Pollution Control Conditions			
A1(a)	Kiln exhaust gas scrubber – operation requirement	Condition 8	New numbering and update to wording format
A1(b)		Condition 9	
A1(c)		Condition 10	
A1(d)		Condition 11	
A1(e)		Condition 12	
A2(a)	Inhouse dedusting plant – operation requirement	Condition 13	
A2(b)		Condition 14	
A2(c)		Condition 15	
A3(a)	Dryer scrubber – operation requirement	Condition 16	
A3(b)		Condition 17	
A4(a)	Thermal oxidiser (afterburner) – operation requirement	Condition 18	
A4(b)		Condition 19	
A5	Ground level concentration	Condition 20	
A6(a)	Stack monitoring	Condition 21	
A6(b)		Condition 22	
A7(a)	Dust – general requirement	Condition 23	
A7(b)		Condition 24	
A8	Dust monitoring	Condition 25	

Existing condition	Condition summary	Revised licence condition	Conversion notes
New		Condition 26	New condition for dust monitoring associated with the temporary coal stockpile
A9(a)	Opening of standby (emergency/maintenance) stack	Condition 27	New numbering and update to wording format
A9(b)		Condition 28	
Water Pollution Control Conditions			
W1	Process liquor ponds	Condition 29	New numbering and update to wording format
W2	Stormwater	Condition 30	
W3	Vehicle washdown areas	Condition 31	
W4	Fuel/oil and silt traps	Condition 32	
W5	Water discharges – discolouration/floating matter	Condition 33	
W6	Protection of water pollution control systems	Condition 34	
W7	Maintenance of water pollution control systems	Condition 35	
W8(a)	Liquid chemical storage	Condition 36	
W8(b)		Condition 37	
S1	Solid waste disposal condition	Condition 38	
New	Groundwater monitoring	Condition 39	New condition for groundwater monitoring
Works Conditions			
New	Infrastructure and equipment	Condition 40	New condition for the construction of a limestone pad and limestone containment bund for a temporary coal stockpile
	Compliance reporting	Condition 41	New conditions regarding compliance reporting after construction of temporary coal stockpile
Condition 42			

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
4. Tronox Management Pty Ltd 2024, *Application for Licence Amendment L5939 Chandala Processing Plant*, Perth, Western Australia.

Appendix 1: Summary of Licence Holder's comments on risk assessment and draft conditions

Condition	Summary of Licence Holder's comment	Department's response
Condition 26 Table 2	Request the following changes to the requirements within the table: <ul style="list-style-type: none"> • Frequency: change wording so that monitoring is only continuous when coal is present within the temporary coal stockpile area. • Sampling method: change wording to allow for flexibility in model of battery operated, live stream PM₁₀ monitoring unit. 	Requested changes do not alter the assessed risk and provide equivalent level of control therefore condition wording has been updated accordingly.
Condition 39 Table 3	Request to change the unit for parameters Mn, Fe and Al from µg/L to mg/L.	Unit has been changed to mg/L for these parameters.
Condition 40 Table 4	Applicant provided a minimum capacity of the collection sump of 2 m ³ based on calculations for a 1 in 5 year rain event of 1 hour duration and advised the proposed pump size of 10 L/s.	The suitability of the sizing of the collection sump and pumping infrastructure to contain and transfer runoff was considered to appropriately mitigate the likelihood of overflow therefore the sizing of the infrastructure was incorporated into installation requirements in the works approval.