Government of Western Australia
Department of Water and Environmental Regulation

Amendment Report

Application for Licence Amendment

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

Licence Number	L9450/2024/1
Licence Holder	LRL (AUST) Pty Ltd
ACN	610 981 194
File Number	APP-0032221
Premises	Kathleen Valley Lithium-Tantalum Project Legal description – Mining tenements M36/265, M36/459, M36/460, M36/696, G36/52, L36/255, L36/256 LEONORA WA 6438
Date of Report	7 May 2026
Decision	Revised licence granted

Cathie Derrington

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Cathie Derrington
Senior Environmental Officer, Green Energy
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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1. Decision summary

Licence L9450/2024/1 is held by LRL (AUST) Pty Ltd (Licence Holder) for the Kathleen Valley Lithium-Tantalum Project (the Premises), located at Mining tenements M36/265, M36/459, M36/460, M36/696, G36/52, L36/255, L36/256.

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 construction and operation of the Premises. As a result of this assessment, Amended Licence L9450/2024/1 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 4 November 2025, the Licence Holder submitted an application to the department to amend Licence L9450/2024/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments were sought:

1 Transfer of TSF Cell 1 Stage 2 lift and Cell 2 starter embankment and Stage 2 lift from Works Approval W6687/2022/1

2 Transfer of the Paste Plant from Works approval W6687/2022/1

3 Amending Turkeys nests to the capacity of 6,800 m^3

4 Adding/creating washdown facilities

2.2.1 Infrastructure to be transferred from W6687/2022/1

1- TSF1 Cell 1 Stage 2 lift and Cell 2 starter embankment and Stage 2

a) TSF Cell 1 Stage 2 lift was constructed on 25 March 2025 under works approval W6687/2022/1, and assessed for compliance by the department under application APP-0029953. The assessment included compliance with the original design, height, freeboard and location. The constructed embankment is 1 m lower in height than the original design, reaching 522 m RL. Additionally, the safety bund was taller and less steep.

b) TSF Cell 2 starter embankment was constructed on 15 September 2025 and assessed for compliance by the department under application APP-0032233. The assessment included compliance with the original design, height, freeboard (500 mm) and location. The constructed embankment has deviations from the original design including being 4 m higher (524 m RL), but lower than the total height for the TSF (Stage 5 lift 535 m RL). Additionally, the total capacity of TSF1 Cell 2 (starter embankments) is approximately 1.2 Mt greater than the limit specified in the Works Approval. However, this does not exceed the final total capacity of the TSF (14.72 Mt). Finally, the TSF 2 Cell 2 included a 200 mm thick layer of fines material as surface for a HDPE liner with a hydraulic conductivity of 2 x 10^{-10} m/s.

c) TSF1 Cell 2 Stage 2 lift was included in the application for the TSF Cell 2 starter embankment, as the embankment was constructed to a height of 524 m RL, the Licence

Holder proposed that the embankment construction can be considered the lift as well due the reached height.

The department referred the TSF1 changes of design to Department of Mines, Petroleum and Exploration (DMPE) for endorsement. DMPE confirmed that the deviations in TSF1 design do not pose geotechnical or potential embankment wall instability risks.

Water balance

The TSF annual balance forecast was provided (Table 1), which was calculated using the following assumptions:

- water to TSF includes 50% of water in slurry released to the supernatant pond, available for decant;
- return, and flushing volumes required for routine flushing activities;
- rainfall catchment includes both Cell 1 & Cell 2, and
- underground water requirements are an estimate

Table 1: Annual Water Balance Forecast (m^3)

Water source and annual volume	
Water to TSF (m^3)	963,385
Rainfall (m^3)	127,200
Total In (m^3)	**1,090,585**
Decant Return to Plant (m^3)	472,224
Evaporation (m^3)	260,000
OP Dust Suppression (m^3)	140,286
UG Water requirements (m^3)	432,608
Total Out (m^3)	**1,305,118**
Deficit (m^3)	**-214,533**

**Capacity and water balance forecasting have ensured TSF1 will be able to withstand a 1% AEP 72-hour rainfall event (a 100,000 m^3 storm pond).*

2- Paste Plant

The constructed Paste Plant will be used to backfill the voids created during underground mine operations. This will stabilise the underground workings for safety purposes and help preserve pre-existing ground conditions. The Paste Plant will also enable the recovery of water from the tailings stream for reuse as process water within the onsite processing plant, and reduce the required surface tailings storage area, thereby minimising the overall surface disturbance footprint.

The Paste Plant Time Limited Operations was assessed under compliance application APP-0029837. The factors assessed included the routine shift inspection for spillage and sum clearance, where some minor incidents were registered. The licence holder demonstrated compliance for the Time Limited Operations.

3- Monitoring Wells – construction and operation

The monitoring wells installation was completed on 21 June 2024. The department assessed that wells were developed, design and construction, the installation survey (DWER, 2025).

The Time Limited Operations from constructed bores (KVMB029, KVOB030, KVMB031, KVOB032, KVMB033, KVOB034, KVMB039, KVOB040) was assessed under compliance

report APP-0027422. The bores were installed to monitor TSF Cell 1 and 2, and determine flow direction, water composition and changes.

To be noted, during the sampling events during Time Limited Operations, some bores were dry, so there is no data available for those bores. The dry bores correspond to shallow bores, there are four “monitoring stations”, each one having two groundwater bores, one to a depth of 5 m bgl and the other extending to the groundwater table. The shallow bores are intended to detect any seepage from the TSF flowing within the surface sediments, whilst the deep bore is designed to monitor groundwater level and chemistry.

The “monitoring stations” are confirmed for the following bores:

- KVMB029, KVOB030
- KVMB031, KVOB032
- KVMB033 and KVOB034
- KVMB039, KVOB040

The monitoring results demonstrated that the overall groundwater flow direction is north to west as shown in Figure 1.

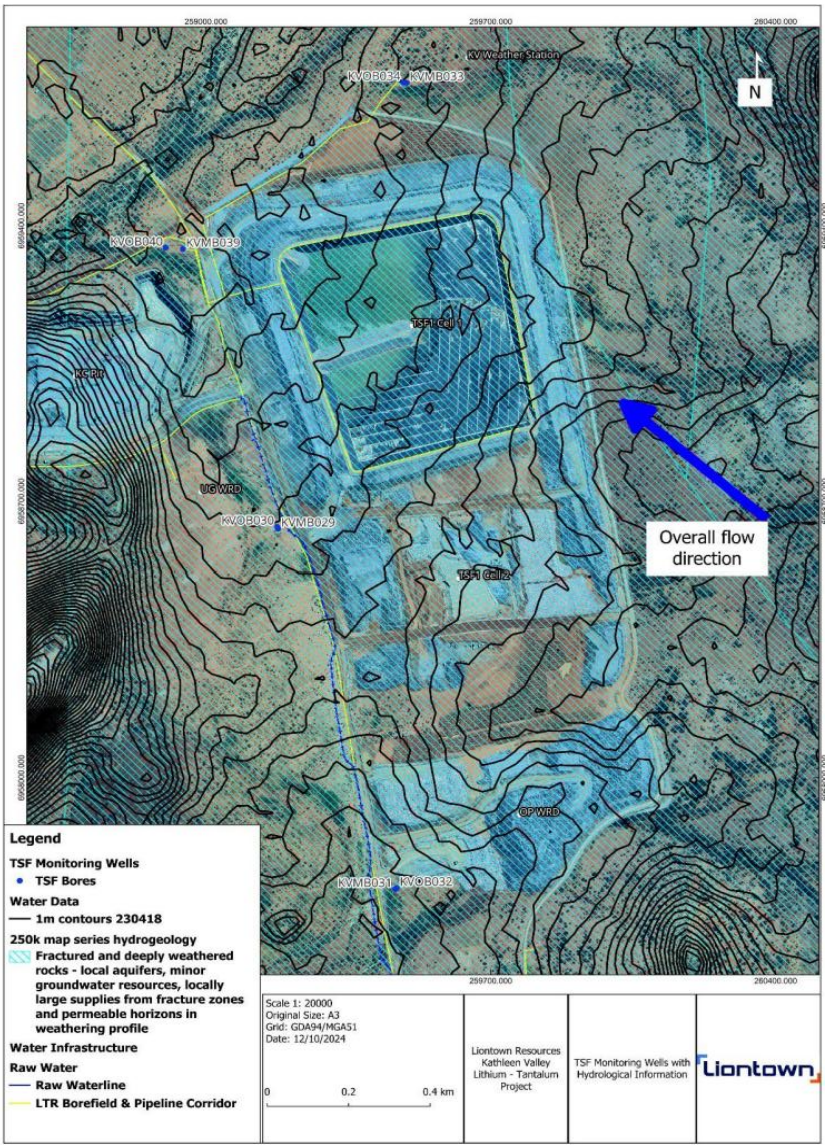

Figure 1: Monitoring Locations and Groundwater Flow Diagram

The standing water levels in deeper bores was registered as per Table 2 below, with all levels below the limit of 4 m bgl (except for shallow bores KVOB040 and KVOB030, which were expected dry as they are used to detect seepage, if this occurs).

Table 2: In-Field Monitoring Results (Liontown 2025)

Date	KVOB040	KVMB039					KVOB032					KVOB034				
	SWL (m)	SWL (m)	pH	EC (µS/cm)	T(°C)	TDS (mg/L)	SWL (m)	pH	EC (µS/cm)	T(°C)	TDS (mg/L)	SWL (m)	pH	EC (µS/cm)	T(°C)	TDS (mg/L)
10/07/2024	DRY	44.95	7.3	1337	24	855.68	Dry	-	-	-	-	Dry	-	-	-	-
29/09/2024 TLO Sampling Event 1	DRY	49.47	7.4	1352	24	865.28	16.80	7.3	2460	26	1574.4	9.61	8.6	2225	27	1424
27/10/2024	DRY	49.66	7.3	1288	25	824	16.85	7.8	2490	27	1593.6	Dry	-	-	-	-
3/01/2025	DRY	50.61	7.3	1399	28.4	895.36	16.88	7.9	2610	27.4	1670.4	Dry	-	-	-	-
8/01/2025 TLO Sampling Event 2	DRY	50.72	7.4	1339	30.3	856.96	16.84	8.0	2467	26.3	1578.8	9.95	7.9	2640	30.6	1689.6

Date	KVOB030	KVMB031					KVMB029					KVMB033				
	SWL (m)	SWL (m)	pH	EC (µS/cm)	T(°C)	TDS (mg/L)	SWL (m)	pH	EC (µS/cm)	T(°C)	TDS (mg/L)	SWL (m)	pH	EC (µS/cm)	T(°C)	TDS (mg/L)
10/07/2024	DRY	35.43	7	1689	20	1081	34.17	6.6	1578	26	1009.9	30.16	7.1	1726	23	1104.6
29/09/2024 TLO Sampling Event 1	DRY	45.77	6.7	1636	24	1047.0	42.17	6.8	1419	23	908.16	32.05	7.0	1746	25	1117.4
27/10/2024	DRY	45.92	6.7	1576	26	1008.6	44.29	6.9	1394	26	892.16	33.47	7.0	1568	24	1003.5
3/01/2025	DRY	46.88	7.0	1476	27.8	944.6	46.17	6.6	1712	28	1095.68	33.67	7.0	2052	26.9	1313.2
8/01/2025 TLO Sampling Event 2	DRY	47.04	6.9	1422	28.8	910.0	46.29	6.9	1646	40.6	1053.44	33.68	7.2	1549	28.6	991.3

Further analytical results are provided in Appendix 2.

2.2.2 Process Water Dam Turkeys nest

The current licence identifies one Turkeys nest pond, but this is not accurate, the Licence Holder has therefore requested to update this information.

There is a set of 3 connected ponds; the Process Water Dam Setup in Figure 2 (made up of Process Pond, Process Pond 2 and RO Reject pond. This 3-cell lined system is located halfway between TSF1 and the process plant, has a total capacity of 6,800 m^3. The Process Water Pond 2 is used as both a staging pond to transfer decant water to underground mining as well as for dust suppression via a standpipe.

The Process Water Dam is interconnected with a midway water level bypass that allows for the input cell to be utilised as a settling pond for any sediment being discharged from the feed sources. The feed sources include TSF Decant return water, Underground RO Reject, Underground mine dewatering (from drilling and dust suppression) and this is then topped up with mainline bore water. The interconnected output cell is used to feed the standpipe 20 m to the east. The Process Water Pond 2 is the only turkeys nest that will contain decant water from the TSF. This pond has high level alarms installed to ensure the freeboard is not breached.

The third cell of the Process Water Dam is the RO reject cell which contains the reject water from the Proxa RO plant. It is routinely tested for pH, EC and TDS. The pH ranges from 7.5 to 9 while the TDS ranges from 2500 to 3500. As this water is below 5000 TDS, it is used underground and within active mine areas undiluted. The standpipe is located on the access road adjacent to the ponds and any spillage drains to the paste plant event pond.

The design parameters for the Process Water Pond turkey's nest is as follows in Table 3 and the design is in Figure 2.

Table 3: Process Water Pond - characteristics

Process Water Pond (3) volumes and construction detail	
Pond Capacity	• Process water pond 2 = 5000 m^3 • Process water pond = 900 m^3 • RO Reject Pond = 900 m^3 • Pond Freeboard = 0.5 m
Cross Section Details	• Crest Width – 3.0 m (except for Southern crest of mine dewatering and brine pond, which is 6 m wide to allow vehicle access for sediment removal) • Upstream slope – 3H:1V • Downstream slope – 2H:1V
Basin Liner	The basin soils comprise reworked insitu or imported material to form a 300 mm thick layer, with a smooth drum roller finish with HDPE liner placement.

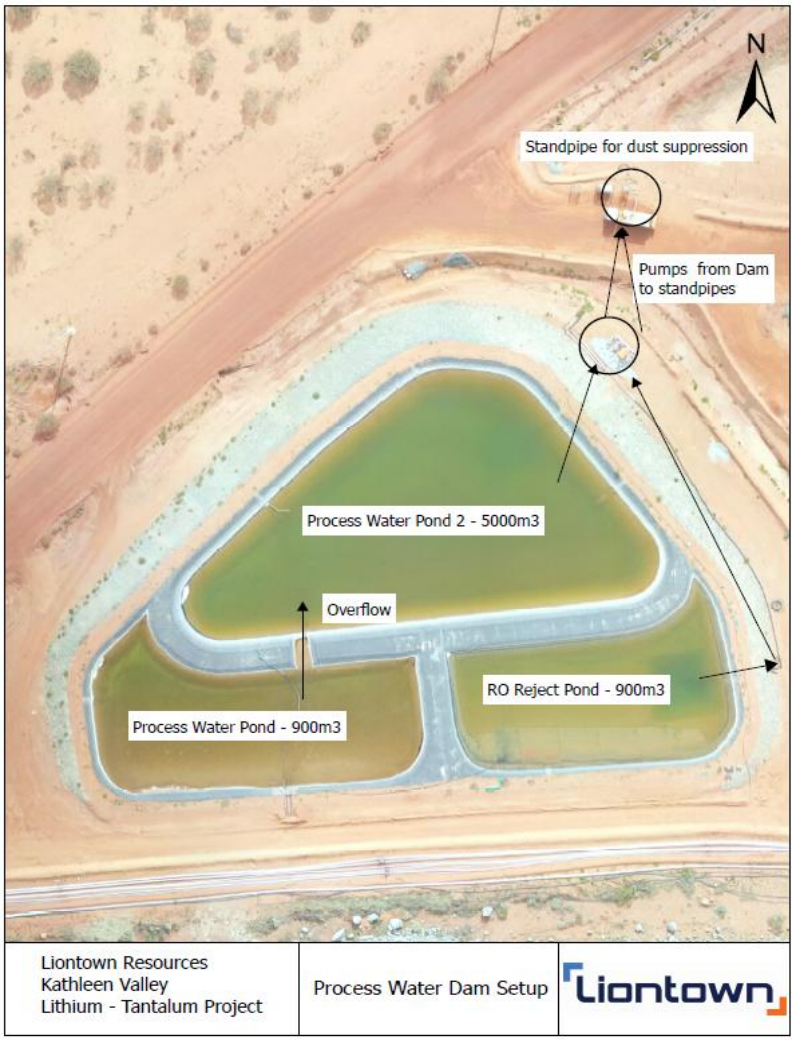

Figure 2: Process Water Pond turkeys next

The department has subsequently changed the wording in the licence to reflect the existence of the Process Water Dam set up being Pond made up of three ponds.

2.2.3 Washdown facilities

The Licence Holder seeks to install three washdown facilities to clean heavy and light vehicles. These facilities design will align with *Water Quality Protection Note 68: Mechanical Equipment Wash Down* aiming that the treated water total recoverable hydrocarbons fall below 15mg/L and surfactants are below 5mg/L. The location of these washdown facilities are:

Wash bay 1 - Located within the boundary of the Light vehicle workshop north of Jones Creek. Any discharge or overflow will be captured and contained within disturbed area.

Wash bay 2 - located on the Underground Temporary Mine services area. Any overflow or discharge will be captured within the local area.

Wash bay 3 - located at the Future MSA will be contained in bunded hardstand area.

The water from the facilities will be run through an Oily Water Separator (OWS) and be recycled. The treated water will be stored in tanks where the water will be tested, if water complies to the licence quality it will be reused for dust suppression. Water will be recycled through the wash bay facility to reduce the pressure on raw water. If the water does not meet the required criteria it will continue to be recirculated or sent to the TSF, or if required disposed of offsite by a licensed carrier. It will not be entering the WWTP system.

A letter was sent to DMPE for endorsement of the proposed deposition of treated water onto TSF1, where DMPE confirmed that this discharge aligns with the Mine Proposal.

The contaminated soil wastes will be contained and dewatered on an impervious or plastic lined bund prior to disposal at an approved facility.

Controls proposed are weekly inspections of the washdown facilities to check for leaks or faults and every three months the treatment systems operating performance will be checked.

The Licence Holder will collect samples quarterly and will analyse the samples by a NATA accredited laboratory for the parameters of pH, Surfactants and Total Recoverable Hydrocarbons.

Monitoring parameters for hydrocarbons and surfactants were also added to the decant water which is measured in the Turkeys nests.

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 4 below. Table 4 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 4: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Tailings and tailings supernatant containing dissolved solids, metals and metalloid Contaminated water from OWS, sludge	Operation of TSF1 Cell 1 and 2, and associated infrastructure (pipelines, Turkeys nests and pumps)	Seepage through base and embankment to soil and groundwater	<u>TSF design</u> 1.5 mm HDPE geomembrane line Upstream cut-off trench and toe drain Basin underdrainage system and underdrainage collection sump were installed. Slotted concrete decant tower at the centre of each cell, with decant return pipeline. Decant recycled to the process plant. Sub-aerial deposition using bank spigots to maintain the supernatant pond near the decant tower. <u>Monitoring</u> Three monitoring stations were installed to the west of the TSF1, each with two groundwater bores, one shallow and one deep (i.e. six wells in total). No upgradient bores are proposed due to exclusion zones associated with cultural heritage requirements. 16 piezometers were installed within the TSF embankments. TSF Operations Manual developed to provide direction on the appropriate operation and monitoring of TSF1 including daily inspections of the operational TSF1. <u>Water from OWS</u> The water will be tested prior to the disposal onto TSF1, if water does not comply with water quality, it will be recirculated or if required disposed of to the TSF or offsite by a licensed carrier. The overflow of the tanks will be directed back into the sump/system.
		Overtopping of TSF or embankment or foundation failure causing impacts to health of vegetation and contamination of soil, surface water and	<u>Controls</u> Total freeboard allowance after a 1 % Annual Exceedance Probability (AEP) 72 hour rainfall event to be minimum 500 mm. Operation freeboard (for solids - distance between the perimeter embankment and the solid tailings beach) to be minimum 300 mm. Beach freeboard (height between pond

Emission	Sources	Potential pathways	Proposed controls
		potentially groundwater	level and exposed tailings beach extent) to be minimum 200 mm. TSF designed to Australian National Committee on Large Dams Incorporated (ANCOLD) standards. The TSF is operated according to engineering specifications and under the supervision of a suitably qualified engineer. The downstream slope of the TSF embankment has been surfaced with competent material to prevent embankment material erosion. Embankment upstream toe drains, with gravity flow to the underdrainage sump. High-density polyethylene (HDPE) liner was placed on the basin floor and embankments. The TSF undergoes annual audits. Embankment upstream toe drains, with gravity flow to the underdrainage sump. High-density polyethylene liner was placed on the basin floor and embankments. <u>Monitoring</u> A TSF Operations Manual developed to provide direction on the appropriate operation and monitoring of the TSF including daily inspections of the operational TSF. Monitoring bores installed around the TSF.
Contaminated surface water		Contaminated surface water run-off and spills and leaks/ruptures along pipelines causing impacts to health of vegetation and contamination of soil, surface water and potentially groundwater	<u>Controls</u> Pipelines incorporate isolation valves at appropriate intervals and period visual inspections undertaken once per 12 hours when in operation to check the integrity of pipelines and bunding. Weekly inspection of flow meters, leak detection telemetry and automatic shut-off systems to ensure effective operations. Tailings and return water pipelines are fitted with flow and leak detection sensors. Scour pits or sumps constructed along the length of the above-ground pipeline corridors to ensure leaks or spillages are contained with bunded areas. Pipelines installed with instrumentation consisting of electromagnetic flow meters

Emission	Sources	Potential pathways	Proposed controls
			and pressure transmitter installed downstream of pump station and upstream TSF discharge providing constant monitoring of operation parameters of the tailings pipeline, and to provide shutdown of the system in the event of pipeline failure. Diversion of rainfall runoff from catchment areas around site infrastructure to discharge off site downstream of the project. The diversion will direct runoff from three catchments to the North and into Jones Creek. Precipitation onto each facility will be contained within the appropriate freeboard allowances. Surface water run-off collected at the downstream toe of the TSF1 embankments to prevent ponding and/or erosion.
Dust		Air/ windborne	Deposition plan designed with dust mitigation in mind to maintain continual flows on TSF surface that ensure no drying and minimise dust.
	Operation Paste plant - Vehicle movements and dry stacking	Air/ windborne	Use of water cart on exposed areas minimising the duration of dry stacking. Grading and removal of excess loose material following campaigns. Baghouse filters installed and regularly maintained within the Cement silos. Dry stack tailings are loaded into trucks and carted to the approved locations, Tailing dam construction. The filtered tailings hold a moisture content of around 20% and are only stockpiled for a maximum of 24 hrs before relocation.
	Construction of washbay facilities	Air/ windborne	Dust relating to the construction of wash bay facilities includes the use of water carts when required, restricted speed limits and cessation of works if dust levels are deemed to be excessive.
Mixed tailings/cement paste/ Reagent	Operation Paste plant - accidental spill/ containment loss from paste fill plant Cement Silo Spillage	Overland flow	Paste plant activities conducted within bunded areas draining to sumps with recovery pumps. The Paste plant bunded sumps report back to a clarifier. All tailings moved within bunded pipelines. Segregated surface water channels

Emission	Sources	Potential pathways	Proposed controls
			diverting runoff into a containment sump.
Washdown water (contaminated with hydrocarbons) used as dust suppression	Operation of washdown facilities	Direct discharge/ Overland flow	Facilities will be on hardstand Water will be run through an Oil and Water Separator and recycled. Water will be tested to ensure water meets the criteria set out in the Washdown guidelines (TDS will be slightly higher due to the feed water – 2000TDS) prior to use for dust suppression or returned to the Site wastewater treatment plants, again for reuse as dust suppression within disturbed areas – in line with current WWTP discharge criteria. Treated water will be stored in tanks with overflow directed back into the sump/system.
Hypersaline water (from Process Water Pond)	Dust suppression activities	Direct discharge/ Overland flow	Water with TDS under 5000 (mg/L) to be used for dust suppression within the process plant. If water TDS is over 5000 (mg/L), then it is blended at approximately 50/50 with decant water to dilute the water.

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

Table 5: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
Traditional owners (Tjiwarl AND Tjiwarl #2) (Tjiwarl Palyakuwa (Agreement))	In the review of the aboriginal heritage sites, Jones Creek appears as a water source for the Traditional owners. (Jones Creek is within the premises boundary, 0.44 km west from TSF1)
Environmental receptors	**Distance from prescribed activity**
TECs/PECs	A priority 1 Priority Ecological Community (PEC), Violet Range (Perseverance Greenstone Belt) vegetation complexes (Banded Ironstone Formation) is located over the southeastern half of the prescribed premises boundary Two vegetation communities (eucalypt woodlands and

	acacia open woodlands) were identified as being potential groundwater dependent ecosystems, located along Jones Creek and immediately outside the northern boundary. Clearing permit CPS 10259/1 has conditions to avoid clearing riparian vegetation as far as practicable, and to minimise the risk of the introduction and spread of weeds and dieback.
Threatened and priority flora	Two Priority 4 species - *Grevillea inconspicua* and *Hemigenia exilis* located within the centre of the premises boundary. Individuals recorded adjacent to the prescribed premises boundary and alongside Jones Creek.
Threatened fauna	*Kwonkan moriartii* - Moriarty's trapdoor spider. 1.5 km west of the southern-most part of the premises. Within prescribed premises boundary (adjacent to south-west boundary).
Subterranean fauna	A subterranean fauna survey was conducted for the project area by Invertebrate Solutions on 26 November 2021. No stygofauna were identified during the survey. Invertebrate solutions indicate that there is a low likelihood of stygofauna being present within the project area. They indicated further investigation would be warranted for significant dewatering for potential impacts to the Carey Paleochannel and associated aquifer 10km to the south west of the project area (Invertebrate Solutions 2021).
Groundwater	8 -12 m bgl - within the area of the proposed tailings storage facility footprint 5-10 m bgl – within the premises boundary
Surface water - Jones Creek	150 m north of TSF1 Jones Creek is located in between the northern and southern sections of the proposed prescribed premises boundary, directly north of mining operations. It flows southwest into the Albion Downs valley and Lake Miranda. Temporary creeks are present within and around the prescribed premises boundary, and only flow briefly immediately after a significant rain event
Pastoral leases	The pastoral stations with watering sites (bores) for cattle are around the premises, which use groundwater. Groundwater has a TDS of 590-810 mg/L, alkaline (pH 8.0 to 8.6) and with no significant concentrations of dissolved metals (AQ2 2019). The closest bore field is 6 km away. Previous study (H2, 2022) indicates that there is likely low connectivity between groundwater sourced by the applicant and adjacent pastoral stations because of the underlying fractured rock aquifer.
Cultural receptors - Aboriginal heritage site	9 cultural receptors located within the premises boundary.

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 in-complete 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 6.

The Revised Licence L9450/2024/1 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. Category 5 activities.

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

Table 6. Risk assessment of potential emissions and discharges from the Premises operation

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls/ DWER comments
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
Construction of washdown facilities/ Oil and Water Separator (OWS)	Dust	**Pathway:** TSF dust lifted by wind **Impact:** Smothering vegetation impacting photosynthesis	-Priority flora -PEC vegetation complex	Refer to Section 3.1	C = Minor L = Rare **Low Risk**	Y	NA	NA
Operation								
Operation of TSF1 and Associated infrastructure (pipelines, Turkeys nests and pumps)	Tailings and tailings supernatant containing dissolved solids, metals and metalloids Turkey's nests (ponds x 3) processing water Contaminated water Ponds overflow	**Pathway**: Seepage though base and embankment to soil and groundwater **Impact**: Seepage contaminating soil and groundwater, reducing health or causing death of priority flora, PEC vegetation complex, other water users	-Groundwater -Priority flora -PEC vegetation complex - Groundwater dependent vegetation - Pastoral water users	Refer to Section 3.1	C = Moderate L = Possible **Medium Risk**	Y	**Condition 1** – operational requirement, including recovery of decant return water. **Condition 7** – water balance monitoring **Condition 14** – groundwater monitoring, water level trigger and limit. **Conditions 17-18** – actions if groundwater parameters are exceeded.	NA
		Pathway: Overtopping of TSF and/or turkeys nest and direct discharge to land Directly via dust suppression **Impact**: reduced health or death of priority flora, PEC vegetation complex, soil contamination	-Priority flora -PEC vegetation complex -Soil	Refer to Section 3.1	C = Moderate L = Possible **Medium Risk**	Y	**Condition 1** – operational requirement including freeboard, visual inspection.	NA

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls/ DWER comments
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
		Pathway: Spills and leaks, pipeline ruptures **Impact:** reduced health or death of priority flora, PEC vegetation complex, soil contamination, surface water contamination	-Priority flora -PEC vegetation complex -Soil -Jones Creek	Refer to Section 3.1	C = Moderate L = Possible **Medium Risk**	Y	**Condition 1** – visual inspection TSF and pipelines, flowmeters, leak detection telemetry	NA
	Contaminated surface water	**Pathway:** Contaminated surface water run-off **Impact:** Soil and surface water contamination	-Soil -Jones Creek	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	NA	NA
	Dust	**Pathway:** TSF dust lifted by wind **Impact:** Accumulation of tailings dust on surrounding vegetation, reducing photosynthesis and depositing dust on surface water, polluting it.	-Priority flora -PEC vegetation complex -Jones Creek	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	**Condition 1** - operational requirement to maintain TSF surface wet.	NA
Operation Paste plant - accidental spill/ containment loss from paste fill plant Cement Silo Spillage	Mixed tailings/cement paste/ Reagent	**Pathway:** Overland flow **Impact:** Contamination of surface water and soil	-Jones Creek ephemeral creek lines -Soil	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	**Condition 1** - operational requirement to maintain sump and bunds.	NA
Operation Paste plant - Vehicle movements and	Dust	**Pathway:** Air/	-Priority flora	Refer to	C = Minor	Y	**Condition 1** - operational requirement to use water	NA

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls/ DWER comments
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
dry stacking		windborne **Impact:** Accumulation of tailings dust on surrounding vegetation, reducing photosynthesis and depositing dust on surface	-PEC vegetation complex -Jones Creek	Section 3.1	L = Possible **Medium Risk**		cart and to maintain baghouse filters within the Cement silos.	
Operation of washdown facilities/ Oil and Water Separator (OWS)	Washdown water (contaminated with hydrocarbons) used as dust suppression or disposed in TSF1, contaminated runoff/ ground seepage	**Pathway:** Direct discharge/ Overland flow **Impact:** Pollution of soils, land or groundwater	-Jones Creek ephemeral creek lines -Soil	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	**Condition 1** - operational requirement to undertake weekly inspections, maintenance, and to maintain and operate oily water separator to treat water up to required standards. **Condition 2** – specified discharge point. **Condition 3** – limit for treated water Total recoverable hydrocarbons (TRH), Surfactants (detergents) and TDS.	NA
Dust suppression activities	Hypersaline water (from Process Water Dam)	**Pathway:** Direct discharge/ Overland flow **Impact:** Hypersalinity of soil, death of native vegetation	-Soil -Native vegetation	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	**Condition 1 –** operational requirement to dilute RO brine before discharging **Condition 8 –** monitoring of Process Water Ponds	NA

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 7 provides a summary of the consultation undertaken by the department.

Table 7: Consultation

Consultation method	Comments received	Department response
Department of Mines, Petroleum and Exploration was provided with a letter on 15 December 2025	Comments received on 15 January 2026. Refer to section 2.2.1 (c) and section 2.2.3.	Noted
Licence Holder was provided with a first draft amendment on 9 February 2026 and with a second draft on 24 April 2026	Comments received on 31 March 2026 and 1 May 2026. Refer to section Appendix 1.	Refer to section Appendix 1.

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 8 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 8: Summary of licence amendments

Condition no.	Proposed amendments
Front page	DWER file number was updated
1 – Table 1	Updated to reflect the transferred infrastructure to the licence, including the TSF1 foundations, lifts, and Paste Plant. Amendment of the Turkeys nest naming to Process Water Pond, and across the licence to include locations and controls/conditions. WWTP rewording of operation requirement regarding reagent and hydrocarbon storage. Washdown facilities and Oily water separator added with operational requirements.
2 – Table 2	Updated to reflect the transferred infrastructure to the licence, including the TSF1 foundations, lifts. Treated water from Oil and Water Separator added
3 – Table 3	Emission and parameters for Treated water from Oil and Water Separator added
Ex-condition 4	Reporting condition regarding commencing discharge of decant return water for dust suppression, completed and removed (assessed under APP-0029878)
7	Volume decant water and treated water coming from OWS added
8 - Table 4	Monitoring location and frequency updated
23 – Table 8	Treated water from Oil and Water Separator added, monitoring frequency reduced to from monthly to quarterly
26	Changes to condition wording to allow flexibility regarding treated water discharges.
34	Environmental reporting requirement updated regarding TSF1 and treated water from WWTP and OWS.
Table 10	Oily Water Separator definition added
Figure 5	Location of washdown facilities map added
Figure 6	Process water pond water flow figure added

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 2025, *W6687 LRL Groundwater monitoring wells - Compliance assessment* (REF: A2331733).
4. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
5. Liontown 2025, *Kathleen Valley, Groundwater monitoring wells sampling event two - time limited operations report* (EO REF: APP-0027422).

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

Condition	Summary of Licence Holder's comment	Department's response
1	The applicant requested to remove operational requirement regarding "Processing plant and associated infrastructure", the condition specifies that "Water for the Process Water Pond to be sourced from the process thickener overflow, decant return water, and raw water" to have more flexible operation.	The department agrees as the sources and monitoring for the Process Water Pond are stated in other conditions.
1	The applicant requested to reduce inspection frequency for a) "Processing plant and associated infrastructure", about the loss of containment from weekly to monthly. b) "Washdown facilities", for leaks and faults	The department considers that a lower frequency will increase the environmental risk and will not reduce the inspection frequency.
1	The applicant requested to remove operational requirement regarding "Processing plant and associated infrastructure": Crushing and screening activities to cease during periods of high winds if dust cannot be adequately controlled	The department considers that the condition must be maintained given the distance to the priority flora and Priority Ecological Community vegetation complex. This to reduce the risk of health degradation or death of the mentioned receptors.
1	The applicant requested to reduce inspection frequency for "LNG power station and storage tanks": From weekly inspections to check the integrity of containment infrastructure to monthly.	The department considers that the risk will not increase by removing this operational condition as is managed under the *Dangerous Goods Safety Act 2004* (WA).
1	Applicant requested to remove TSF deposition limit of 1.85 million tonnes of tailings from the operation condition	Updated accordingly.
2	Change reference of discharge point to Process Water Dam	Updated.
2	Applicant requested to modify the Oil Water Separator discharge point for more flexibility in case they required to dispose of-site	Updated accordingly.
3	Applicant requested to increase the TDS limit to 5000 mg/L as they will dilute effluent if it's over that criterion.	Updated accordingly and specified the disposal criterion on Table 1.
Ex condition 4	Condition regarding decant return water for dust suppression" to provide sampling results to department. They requested condition to be removed as they complied with the reporting.	The department acknowledges the completion under application APP-0029878.
8	Updated references regarding monitoring location Reduction of monitoring frequency from monthly to annually	Monitoring location updated accordingly. The department agrees to reduce this from monthly to quarterly proportionate to the risk.
14	Requested to reduce groundwater monitoring from quarterly to yearly	The department considers that annual monitoring will reduce the groundwater data seasonality which is relevant for data interpretation. The department will not reduce the monitoring frequency.

Condition	Summary of Licence Holder's comment	Department's response
23	Reduction of WWTP effluent outlet monitoring to be reduced from monthly to quarterly	The department agrees to reduce monitoring frequency proportionate to the risk.
26	Requested to modify effluent quality condition prior to discharging Applicant asked if the parameter of *E. coli* is exceeded if they still can discharge for dust suppression.	The department modified condition to allow flexibility of discharge, proportionate to the risk. In response to the question, the department notes that nutrient risks were considered as part of the risk assessment. In relation to *E. coli*, the department has provided flexibility by deferring risk management and oversight to the Department of Health. Accordingly, the licence holder is required to refer to and comply with any conditions imposed under the relevant Department of Health approval relating to the discharge of effluent, including circumstances where *E. coli* exceedances may occur.
Ex-Figure 2	Applicant requested to be removed "Location of dual-use flood levy/LV access road and diversion channel" as is not referred in the licence.	Figured removed.
Figure 4	Location of washdown facilities and treated water tanks provided	Added to the Licence.
Figure 5	Provided Process water pond water flow	Added to Amendment report and Licence.
Amendment report Section 2.2.2	Provided clarification regarding the design and operation of Process Water Pond	Added to Amendment report.
Amendment report Section 2.2.3	Provided clarification regarding location of washdown facilities	Added to Amendment report.
Amendment report Table 4	Provided clarification regarding operational requirements	Added to Amendment report.
Licence	Requested to add a new WWTP construction requirement	This is out of the original amendment scope and therefore cannot be added as part of this update. Please, include this request in the next amendment application.

Appendix 2: TSF1 Monitoring Wells, Sampling Event 2 results

Compound, CAS Number (if applicable)	Units	DoH (2014) NPUG (mg/L)	KVMB029 (TSFDMB02)				KVMB031 (TSFDMB03)				KVMB033 (TSFDMB04)			
Sampling Date			11/07/2024	29/09/2024	8/01/2025	Change	10/07/2024	29/09/2024	8/01/2025	Change	14/07/2024	29/09/2024	8/01/2025	Change
pH Value	pH Unit	Nil	7.58	7.68	7.3	-0.28	7.36	7.83	7.61	0.25	7.76	8.04	7.77	0.01
Electrical Conductivity @ 25°C	µS/cm	Nil	1550	1710	1700	150	1510	1530	1480	-30	1670	1820	1660	-10
Total Dissolved Solids @ 180°C	mg/L	Nil	878	981	972	94	973	988	876	-97	963	1140	1000	37
Total Hardness as CaCO3	mg/L	Nil	416	413	457	41	466	434	464	-2	403	431	418	15
Hydroxide Alkalinity as CaCO3, DMO-210-001	mg/L	Nil	<1	<1	<1	0	<1	<1	<1	0	<1	<1	<1	0
Carbonate Alkalinity as CaCO3, 3812-32-6	mg/L	Nil	<1	<1	<1	0	<1	<1	<1	0	<1	<1	<1	0
Bicarbonate Alkalinity as CaCO3, 71-52-3	mg/L	Nil	484	504	469	-15	171	223	200	29	182	215	197	15
Total Alkalinity as CaCO3	mg/L	Nil	484	504	469	-15	171	223	200	29	182	215	197	15
Sulfur as S, 63705-05-5	mg/L	Nil	35	<1	1	-34	45	44	45	0	55	55	53	-2
Sulfate as SO4- Turbidimetric, 14808-79-8	mg/L	10007	<1	2	<1	0	132	133	141	0	164	159	165	0
Chloride, 16887-00-6	mg/L	250	280	346	332	52	308	317	308	0	368	433	368	0
Calcium, 7440-70-2	mg/L	Nil	62	88	104	42	91	78	95	4	89	95	93	4
Magnesium, 7439-95-4	mg/L	Nil	35	47	48	13	58	58	55	-3	44	47	45	1
Sodium, 7440-23-5	mg/L	Nil	143	178	184	41	134	136	135	1	177	191	173	-4
Potassium, 2023695	mg/L	Nil	8	26	27	19	5	5	7	2	9	14	10	1
Aluminium, 7429-90-5	mg/L	0.2	<0.01	<0.01	<0.01	0	<0.01	<0.01	<0.01	0	<0.01	<0.01	<0.02	0
Antimony, 7440-36-0	mg/L	0.03	<0.001	<0.001	<0.001	0	<0.001	<0.001	<0.001	0	0.002	0.001	1.001	0
Arsenic, 7440-38-2	mg/L	0.1	0.002	0.006	0.007	0	0.007	0.002	0.02	-0.001	<0.01	<0.001	<0.001	0
Beryllium, 7440-41-7	mg/L	0.6	<0.001	<0.001	<0.001	0	0.001	<0.001	<0.001	0	<0.01	<0.001	<0.001	0
Barium, 7440-39-3	mg/L	20	0.881	1.1	1.1	0.219	0.101	0.119	1.1	0.999	0.166	0.209	0.184	0.018
Bismuth, 7440-69-9	mg/L	Nil	<0.001	<0.001	<0.001	0	<0.001	<0.001	<0.001	0	<0.001	<0.001	<0.001	0
Cadmium, 7440-43-9	mg/L	0.02	<0.0001	<0.0001	<0.0001	0	<0.0001	<0.0001	<0.0001	0	<0.0001	<0.0001	<0.0001	0
Caesium, 7440-46-2	mg/L	Nil	<0.001	<0.001	<0.001	0	<0.001	<0.001	<0.001	0	<0.001	<0.001	<0.001	0
Chromium, 7440-47-3	mg/L	Nil	<0.001	<0.001	<0.001	0	<0.001	<0.001	<0.001	0	<0.001	0.001	<0.001	0
Cobalt, 7440-48-4	mg/L	0.5	<0.001	<0.001	<0.001	0	<0.001	<0.001	<0.001	0	0.003	0.004	0.003	0
Copper, 7440-50-8	mg/L	1	<0.001	<0.001	<0.001	0	<0.001	<0.001	<0.001	0	0.002	0.002	<0.001	0
Lead, 7439-92-1	mg/L	0.1	<0.001	<0.001	<0.001	0	<0.001	<0.001	<0.001	0	<0.001	<0.001	<0.001	0
Lithium, 7439-93-2	mg/L	Nil	0.706	0.738	0.878	0.172	0.088	0.081	0.076	-0.012	0.109	0.078	0.07	-0.039
Manganese, 7439-96-5	mg/L	5	5.73	5.34	4.96	-0.77	0.04	0.055	0.087	0.047	0.035	0.275	0.099	0.064
Molybdenum, 7439-98-7	mg/L	0.5	0.009	0.004	0.002	-0.007	0.004	0.003	0.006	0.002	0.003	0.002	0.003	0
Nickel, 7440-02-0	mg/L	0.2	0.001	<0.001	<0.001	0	0.001	0.001	0.002	0.001	0.004	0.005	0.003	0.001
Rubidium, 7440-17-7	mg/L	Nil	0.014	0.017	0.018	0.004	0.003	0.004	0.005	0.002	0.004	0.007	0.005	0.001
Selenium, 7782-49-2	mg/L	0.1	<0.01	<0.01	<0.01	0	<0.01	<0.01	<0.01	0	<0.01	<0.01	<0.01	0

Compound, CAS Number (if applicable)	Units	DoH (2014) NPUG (mg/L)	KVMB029 (TSFDMB02)				KVMB031 (TSFDMB03)				KVMB033 (TSFDMB04)			
Sampling Date			11/07/2024	29/09/2024	8/01/2025	Change	10/07/2024	29/09/2024	8/01/2025	Change	14/07/2024	29/09/2024	8/01/2025	Change
Silver, 7440-22-4	mg/L	1	<0.001	<0.001	<0.001	0	<0.001	<0.001	<0.001	0	<0.001	<0.001	<0.001	0
Strontium, 7440-24-6	mg/L	Nil	0.828	0.835	0.889	0.061	0.844	0.758	0.826	-0.018	0.686	0.673	0.694	0.008
Tellurium, 22541-49-7	mg/L	Nil	<0.005	<0.005	<0.005	0	<0.005	<0.005	<0.005	0	<0.005	<0.005	<0.005	0
Thallium, 7440-28-0	mg/L	Nil	<0.001	<0.001	<0.001	0	<0.001	<0.001	<0.001	0	<0.001	<0.001	<0.001	0
Thorium, 7440-29-1	mg/L	Nil	<0.001	<0.001	<0.001	0	<0.001	<0.001	<0.001	0	<0.001	<0.001	<0.001	0
Tin, 7440-31-5	mg/L	Nil	<0.001	<0.001	<0.001	0	<0.001	<0.001	<0.001	0	<0.001	<0.001	<0.001	0
Uranium, 7440-61-1	mg/L	0.17	<0.001	0.006	<0.001	0	0.004	0.003	0.003	-0.001	0.007	0.006	0.005	0
Zinc, 7440-66-6	mg/L	3	0.005	0.024	0.028	0.023	<0.005	0.008	0.054	0.049	0.014	0.024	<0.005	-0.009
Boron, 7440-42-8	mg/L	40	0.31	0.5	0.41	0.1	0.33	0.32	0.38	0.05	0.66	0.5	0.57	-0.09
Iron, 7439-89-6	mg/L	0.3	1.35	0.11	4.57	3.22	<0.05	<0.05	<0.05	0	<0.05	0.11	0.07	0.02
Tantalum, 7440-25-7	mg/L	Nil	<0.001	<0.001	<0.001	0	<0.001	<0.001	<0.002	0	<0.001	<0.001	<0.001	0
Mercury, 7439-97-6	mg/L	0.01	<0.0001	<0.0001	<0.0001	0	<0.0001	<0.0001	<0.0002	0	<0.0001	<0.0001	<0.0001	0
Ammonia as N, 7664-41-7	mg/L	Nil	0.01	0.36	0.64	0.63	0.04	0.1	0.03	-0.01	<0.01	0.04	0.97	0.96
Ammonia as NH3 Conversion**	mg/L	0.5	0.0122	0.4392	0.7808	0.7686	0.0488	0.122	0.0366	-0.0122	0	0.0488	1.1834	1.1834
Ammonium as N, 14798-03-9_N	mg/L	Nil	<0.01	0.35	0.63	0.62	0.04	0.1	0.03	-0.01	<0.01	0.04	0.94	0.62
Nitrate as N, 0314797-55-8	mg/L	Nil	<0.05	0.09	0.22	0.07	86.3	46.4	39.3	0.07	0.04	4.03	0.18	0.07
Ammonia as NH_3 Conversion**	mg/L	500	0	0.3987	0.9746	0.9746	382.309	205.552	174.099	-208.21	0.1772	17.8529	0.7974	0.6202
Total Phosphate	mg/L	Nil	0.14	0.43	0.87	0.73	<0.10	0.47	<0.10	0		0.12	0.4	0.4
Total Anions	(meq/L)	Nil	17.7	19.9	18.7	1	14.8	16.2	15.6	0.8	17.4	19.8	17.8	0.4
Total Cations	(meq/L)	Nil	15.9	16.7	17.8	1.9	15.3	14.7	15.3	0	16	17.3	16.1	0.1
Ionic Balance	%	Nil	5.35	8.77	2.46	-2.89	1.39	4.72	0.97	-0.42	4.31	6.86	4.8	0.49