



Application for Licence Amendment

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

Licence Number	L9326/2022/1
Licence Holder	Covalent Lithium Pty Ltd
ACN	70 623 090 139
File Number	DER2022/000016
Premises	Earl Grey Lithium Project via Marvel Lock-Forrestania Road within Shire of Yilgarn Mining Tenement G77/129, G77/137, M77/1066 and M77/1080 As defined by the coordinates in Schedule 1 of the licence As defined by the premises maps attached to the issued licence
Date of Report	18 October 2024
Decision	Revised licence granted

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1. Decision summary

Licence L9326/2022/1 is held by Covalent Lithium Pty Ltd (Licence Holder) for the Earl Grey Lithium Project (the premises), located about 105 km south-southeast of Southern Cross and 1.5 km northeast of Mt Holland in the Shire of Yilgarn

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 L9326/2022/1 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 Background

Covalent Lithium Pty Ltd (also referred to as 'Covalent') is the managing entity for the Mt Holland Joint Venture; a 50:50 joint venture between a related body corporate of Wesfarmers Chemicals, Energy & Fertilisers Limited and a related body corporate of Sociedad Química y Minera de Chile S.A.

Covalent, as manager of the Mt Holland Joint Venture and for and on behalf of the Mt Holland joint venturers are developing the Earl Grey Lithium Project (the premises, also referred to as 'EGLP') at the historical Bounty Gold mine site near Mount Holland, in the Yilgarn Mineral Field of Western Australia.

The EGLP comprise the mining and processing through a concentrator of two million tonnes per annum (Mtpa) of spodumene ore to produce approximately 50,000 tonnes per annum (tpa) of battery quality lithium hydroxide (LiOH) at the Covalent Lithium Refinery in Kwinana.

2.3 Premises history

The EGLP concentrator was constructed under works approval W6460/2020/1 prior to the works approval W6673/2022/1 being granted for the tailings storage facility (TSF). As there was no TSF to receive the tailings waste, no commissioning or time limited operations were included in the works approval for the concentrator. Once the TSF was constructed the concentrator works approval was amended to allow commissioning and time limited operations. As the time limited operations period for the TSF would expire before commissioning of the concentrator was completed, the licence L9326/2022/1 was amended to add category 5. Category 5 on the licence was limited to category 5 (c): a premises on which tailings or residue from metallic or non-metallic ore are discharged into a containment cell or dam.

The nature of tailings produced by the Concentrator and the risk to the environment from its discharge to the tailings storage facility was assessed in the amendment to the licence issued in February 2024.

The location of the EGLP is shown on Figure 1.

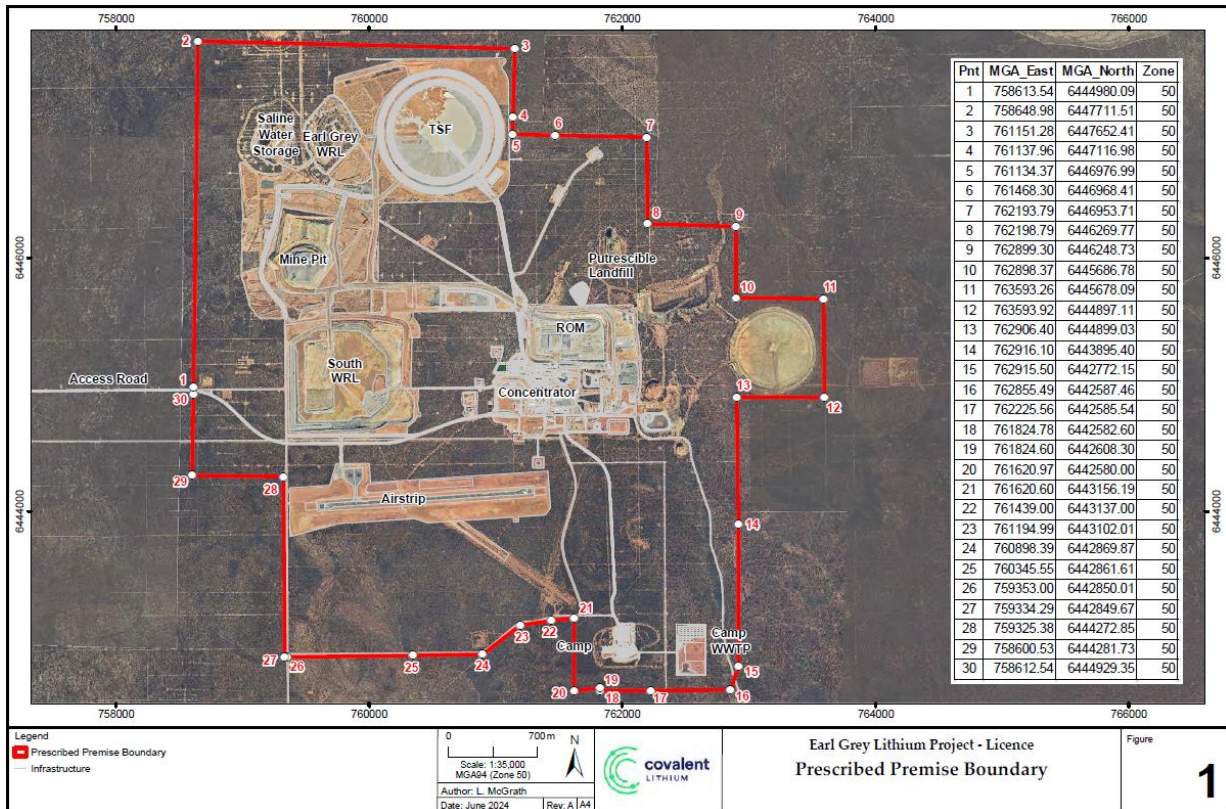


Figure 1: Earl Grey Lithium Project location and general layout

2.4 Application summary

On 16 June 2024, the Licence Holder submitted an application to the department to amend Licence L9326/2022/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). This amendment application includes the incorporation of three new categories into the existing licence:

- Category 5 (a): premises and which metallic or non-metallic ore is crushed, ground, milled or otherwise processed. This is related to the concentrator, subject of W6460 which commenced time limited operations on 22 April 2024 following submission of the environmental commissioning report. Increase ore processing from 2 MT to 3 MT per annual period.
- Category 12 - related to the mobile crushing and screening plant which commenced time limited operations following submission of the environmental construction report on 6 November 2023 and operated from November 2023 to March 2024.
- Category 57 - related to used tyre storage pending final disposal. Covalent is seeking to temporarily store up to 300 used tyres within the premises boundary. Tyres will be sent off site for recycling or disposal.

This amendment also requests some amendments to the existing Licence:

- Operations of the wastewater treatment plant WWTP has identified the plant has improved performance using two sequential batch reactors (SBRs) which are operating close to maximum capacity rather than when three SBRs are operating at low capacity. As such, SBR Train 3 has been taken offline and will be decommissioned. SBR Train 3 has been removed from Figure 3 and it is requested it is removed from reference in Table 1 and Table 6.
- Addition of a new Ultra-Filtration (UF) Plant to the existing Wastewater Treatment Plant

(WWTP) to allow for additional treatment of treated effluent to a higher quality able to be re-used across site (for example, dust suppression water and camp garden irrigation water).

- With multiple items now on licence, the Licence Holder requested several description changes for infrastructure to improve clarity.

Table 1 below outlines the proposed changes to the existing licence.

Table 1: Proposed design or throughput capacity changes

Category	Current throughput capacity	Proposed throughput capacity	Description of proposed amendment
<p>Category 5: Processing or beneficiation of metallic or non-metallic ore: premises on which —</p> <p>(a) metallic or non-metallic ore is crushed, ground, milled or otherwise processed; or</p> <p>(b) tailings from metallic or non-metallic ore are reprocessed; or</p> <p>(c) tailings or residue from metallic or non-metallic ore are discharged into a containment cell or dam.</p>	<p>1.2 million tonnes per annum (Mtpa) - tailings.</p> <p>The TSF was added to the licence prior to the processing plant, so that the tailings disposed of was used for assessing the throughput on the current licence. With the addition of the processing plant, the ore throughput will be added to the licence along with Category 5 tailing discharge capacity.</p>	<p>3 million tonnes per annum (Mtpa) – ore processing.</p> <p>Includes use of existing mobile crushing and screening plant in conjunction with new ore sorting modules to increase the throughput of material to the processing plant from low grade ore stockpiles.</p>	<p>Add Category 5 ore production capacity of the Concentrator to the licence.</p>
<p>Category 12: Screening, etc. of material: premises (other than premises within category 5 or 8) on which material extracted from the ground is screened, washed, crushed, ground, milled, sized or separated.</p>	N/A	1 million tonnes per annum (Mtpa)	Add Category 12 crushing and screening capacity to the licence.
<p>Category 54: Sewage facility: premises —</p> <p>(a) on which sewage is treated (excluding septic tanks); or</p> <p>(b) from which treated sewage discharged onto land or into waters.</p>	180 cubic metres per day (m ³ /day)	No change	Change(s) to infrastructure.
<p>Category 57: Used tyre storage (general): premises (other than premises within category 56) on which used tyres are</p>	N/A	300 tyres	Add Category 57 to the licence so that Covalent can temporarily store up to 300 tyres.

stored.			
Category 64: Class II or III putrescible landfill site: premises on which waste (as determined by reference to the waste type set out in the document entitled "Landfill Waste Classification and Waste Definitions 1996" published by the Chief Executive Officer and as amended from time to time) is accepted for burial	700 tonnes per annum (tpa)	No change	No change.

2.4.1 Overview of change to Category 5 – Concentrator

Concentrator Stage 1 and Stage 2

The Earl Grey Concentrator will process approximately 3 Mtpa of ore to produce approximately 0.4 Mtpa of dry spodumene (5.5 wt% Li₂O) over the life of the mine. The Concentrator operates 24 hours a day, 365 days a year, apart from periods of shut down for maintenance activities. A process flow diagram is provided in Figure 2.

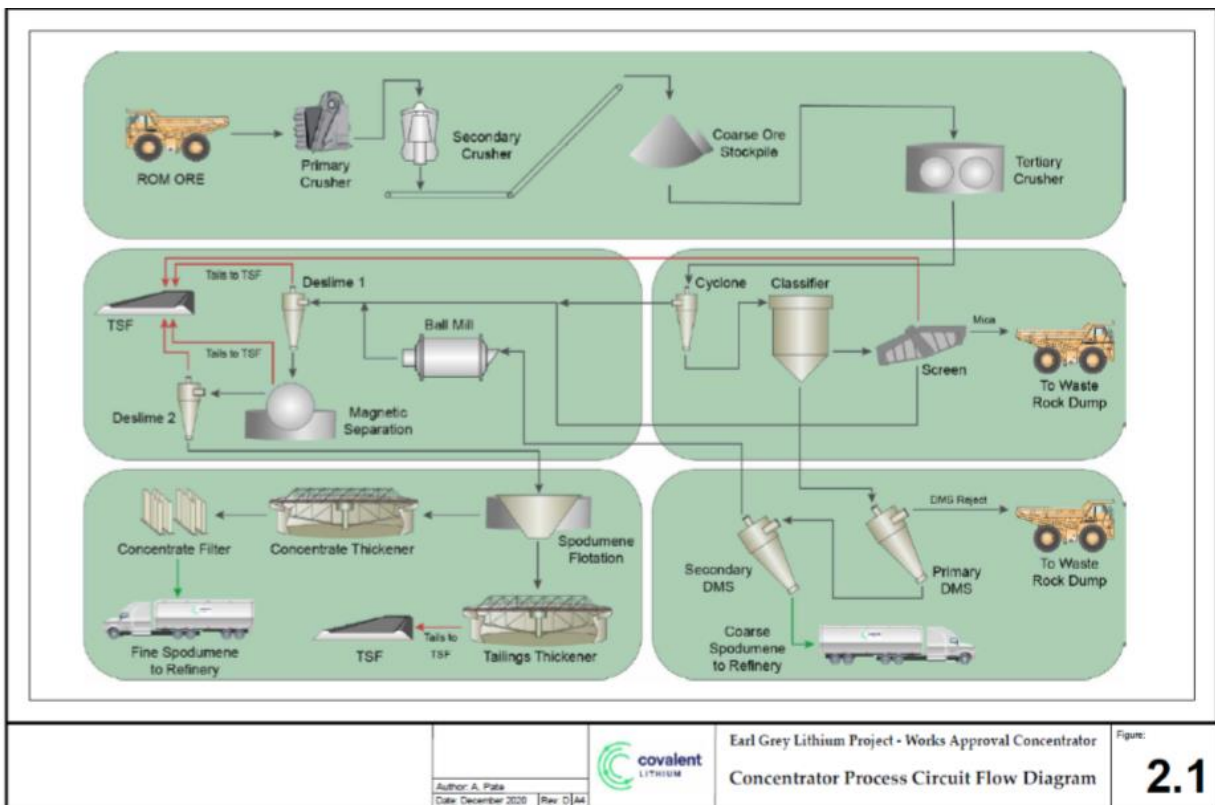


Figure 2: Concentrator process flow diagram

The construction of the Concentrator was approved by works approval W6460/2020/1 in February 2021. Commissioning and TLO was not authorised at this stage due to the absence of a tailing storage facility (TSF) for waste disposal. A TSF was approved for construction under works approval W6673/2022/1, issued on 28 November 2022.

Following TSF construction, an amendment for W6460/2020/1 was granted in February 2023

allowing Covalent Lithium to commence commissioning and time limited operation of the Concentrator processing plant.

On 16 March 2023, the applicant applied to the department to amend the works approval again to allow the commissioning of the Concentrator to occur into two stages:

- Primary and Secondary Crushing Circuits (Stage 1):
 - Run of Mine (ROM) Pad
 - ROM bin
 - Crushing plant circuit
 - Water sprays installed at the ROM bin and transfer points in the crushing circuit.
 - Two insertable type dust collectors installed at the primary crusher and the screen within crushing circuit.
- All remaining components (Stage 2):
 - Tertiary crushing circuit, including bag house style dust collectors installed at the crushed ore stockpile reclaim tunnel feeders to conveyor transfer points, and classification and mica removal circuit
 - Dense medium circuit
 - Grinding and magnetic separation circuit (grinding and desliming, magnetic removal)
 - Flotation circuit
 - Product handling circuit
 - Reagent storage area, including hydrocarbon and water treatment plant reagents storage, containment areas.

The time limited operations for the Concentrator commenced on 22 April 2024 following the submission of the environmental commissioning report for Stage 1 and Stage 2 of the Concentrator.

The Licence Holder propose treating ore and low grade ore by crushing, screening and sorting at the run of mine (ROM) area which will increase throughput in Category 5 activities (from 2 Mtpa to 3 Mtpa). The existing category 12 mobile crushing and screening plant will be utilized on a trial basis, along with new ore sorting infrastructure prior to the beneficiation process.

The ore sorting infrastructure will be laser XRT or optical analysis. Chemical separation techniques are not proposed. Accepted product will then be transported to the ROM for processing as per current processes. Reject product will be treated as waste and report to the South Waste Rock Landform or other waste rock locations.

Stormwater management

Stormwater management was conditioned in W6460/2020/1 for the Concentrator. Stormwater is be managed so contaminated or potentially contaminated stormwater is captured to prevent release into the environment.

The Environmental Commissioning Report submitted April 2024 indicate that stormwater is captured by spoon drains and directs flow to the sediment basin in the northwest corner of the Concentrator (Figure 3).

Fine particles collected in the runoff settle within the sediment basin with no discharge to the environment. The Licence Holder states that the water within the sediment basin is sampled to confirm quality for reuse. To date, stormwater has proven to be of sufficient quality to be pumped into the process water pond and reused as part of commissioning activities within the

Concentrator

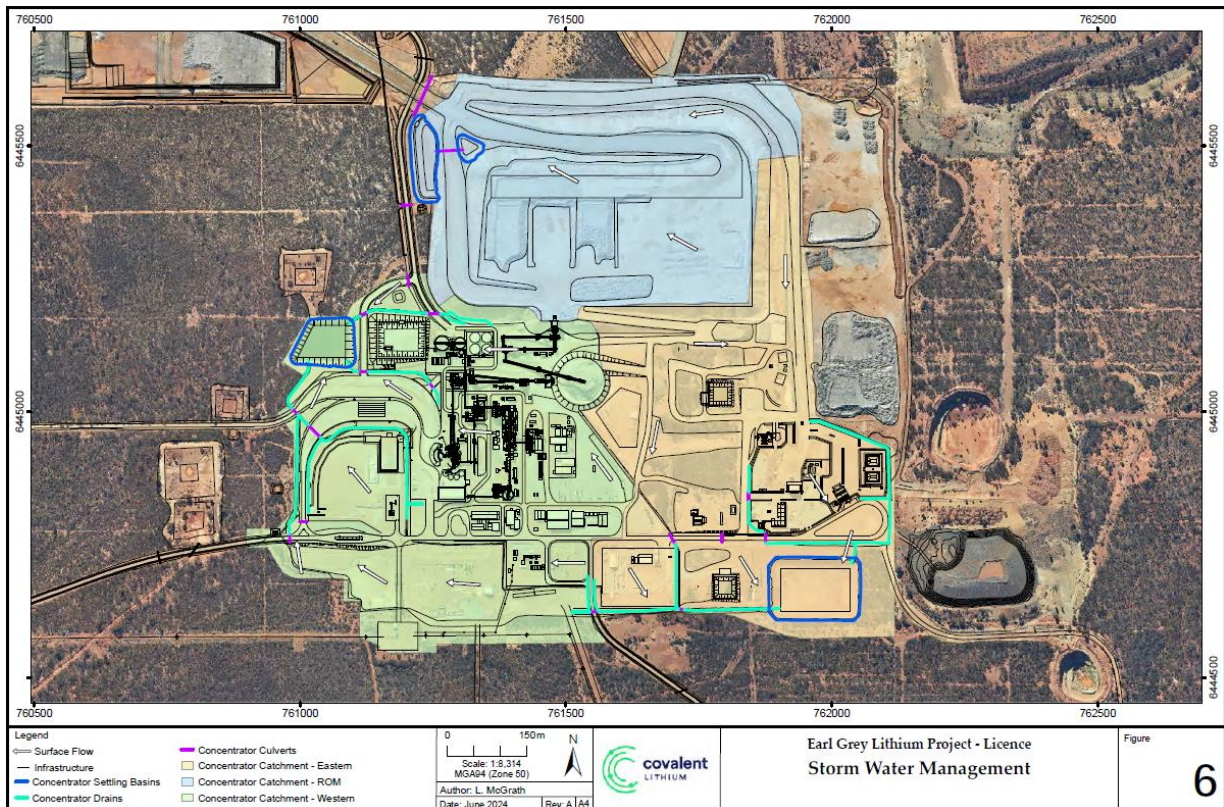


Figure 3: Concentrator and associated infrastructure stormwater management

Reverse Osmosis (RO) Plant brine into South Ventilation Rise

While Covalent Lithium have a scheme water supply via an offtake pipeline from the Kalgoorlie-Goldfields water pipeline near Southern Cross, where possible, process water is reused.

Recycled process liquor is treated in a reverse osmosis (RO) plant prior to being fed back into the process circuit.

The purge stream from the RO plant was expected to produce approximately 200,000 L of saline water per day, to be collected within tanks at the Concentrator. Once adequate volumes have been collected, the wastewater will be pumped into water trucks and discharged to the Earl Grey saline water storage pit or discharged to the South Ventilation Raise (SVR) as an additional discharge option.

The final design and commissioning of the RO plant indicate it will produce 13 m³/hr, which the Licence Holder has rounded up to 15 m³/hr maximum, which equates to 360 m³/day (360,000 L/day).

As previously assessed under W6460/2020/1 the feed water into the RO Plant will be ~3,000 µS/cm and the discharge will be <40,000 µS/cm. The RO brine will be analysed to confirm it is compliant with the derived trigger based on minimum baseline specific conductivity (EC) of 120,000 µS/cm prior to discharge.

If EC of the RO brine reject is > 120,000 µS/cm, the brine will be discharged to the Earl Grey saline water storage pit.

To reduce contamination of groundwater, prior to entry into the RO plant, a Dissolved Air Flotation (DAF) unit will be used to remove any hydrocarbons in the RO feed stream.

The brine will be transported to the South Ventilation Raise by HDPE pipeline. The pipeline will

be procured and installed to meet the relevant Australian Standards (AS/NZS 4130, AS/NZS 4131 and AS2033), welded and pressure tested to 125% maximum allowable operating pressure. The Licence Holder confirm that the piping is open discharge, and they did not experience any backflow pressure build-up during testing and commissioning.

The pipeline is installed above ground and underground, and bedded with suitable material, which will further reduce the risk of physical damage during operations.

2.4.2 Addition and increase of Category 12 – Crushing and screening activity

The Category 12 mobile crushing and screening plant was used to construct the perimeter embankment of the TSF using ex-pit mine waste rock. Works approval W6460 for Category 5 and Category 12 was issued in February 2021. Category 12 plant commenced time limited operations (following the submission of the environmental construction report on 6 November 2023 and operated from November 2023 to March 2024.

The mobile crushing and screening plant is comprised of a vibrating grizzly, jaw crusher, and ancillary services.

Category 12 activities will continue within the premises, in accordance with the licence, for processing of mine waste for use as construction material for construction projects. However, due to demand onsite an increase in the volume of throughput has been proposed (from 500,000 tpa to 1,000,000 tpa). No additional infrastructure is required to facilitate this increase in throughput as existing mobile plants have sufficient design capacity. Water sprays have previously been installed at crushing and screening points and the crushing and screening plant and associated stockpiles are located within a bunded areas which contain any potentially contaminated stormwater runoff.

2.4.3 Changes to Category 54 – Sewage facility

Sequencing Batch Reactor (SBR) Train 3

The Earl Grey wastewater treatment plant (WWTP) was constructed under works approval W6517/2021/1 and added to the licence in July 2022. A licence amendment was issued in May 2023 to include Sequencing Batch Reactor (SBR) Train 3 to the licence and to increase Category 54 – Sewage facility throughput to 180 m³/day.

Operations of the WWTP has identified the plant has improved performance using two SBRs at high(er) capacity rather than when using three SBRs at low capacity. As such, the Licence Holder requests that SBR Train 3 be taken offline and decommissioned.

The Licence Holder request that SBR Train 3 be removed from Figure 3 of the licence and reference to SBR Train 3 be removed from Table 1 and Table 6 of the licence.

The Delegated Officer believes this to be an operational change to the premises that will not significantly increase environmental risk.

Addition of a new Ultra-Filtration (UF) Plant and use of wastewater for dust suppression

The Licence Holder indicated that overall water demand of the project is about 2 ML/day, of which 684,000 L/day is required for dust suppression. Where groundwater is suitable it is used for dust suppression, however groundwater quality in the region is typically hypersaline (total dissolved solids >100,000 mg/L) and the Licence Holder notes that it is not suitable for some purposes (near priority flora and on viable topsoil stockpiles).

The Licence Holder is aware that there is potential for dust suppression activities to impact on rehabilitation resources through the application of highly saline groundwater to cover material (topsoil, subsoil, transition pegmatite etc.)

To reduce the reliance on hypersaline groundwater reserves, while maintaining dust suppression activities, the Licence Holder request that a new Ultra-Filtration (UF) Unit be added

to the existing Wastewater Treatment Plant (WWTP). This unit will allow for additional treatment of effluent to a higher quality, which will be able to be re-used across site (for dust suppression water and accommodation camp garden irrigation water).

The treated effluent for water reuse will be assessed using the DOH *Guidelines for the non-potable uses of recycled water in WA (2024)*. In accordance with this guideline a Recycled Water Quality Management Plan (RWQMP) will be developed. Under DOH guidelines for water to be used for dust suppression or for (urban) irrigation with potential human exposure, i.e., camp garden watering, E. coli levels should be <10 CFU/100 mL.

The Licence Holder advises that the recycled water would be sampled for the same parameters that treated effluent is currently tested under existing licence conditions.

Recycled effluent for dust suppression will be stored in effluent reuse tanks of approximately 100 m³ capacity and be distributed via existing piping to the accommodation village for watering of gardens or via trucks for dust suppression.



Figure 4: Wastewater treatment plant layout

2.4.4 Addition of Category 57 – Used tyre storage

The Licence Holder have requested that Category 57 – Used tyre storage be added to the licence to allow the storage of a maximum 300 tyres at any one time.

These tyres will be stored in batches of not more than 100 tyres with a separation distance of at least 6 m between each batch to provide a fire break. The Licence Holder state there will be no smoking or hot works in proximity of tyre storage.

All tyre storage will be on traffic compacted hardstands delineated by safety bunds to separate these areas from surrounding activities.

Tyres storage will occur within the ‘mine services area’ and ‘mine contractor laydown go line’ as indicated in Figure 5. Stored tyres will be collected by third-party contractor and disposed of off-site.

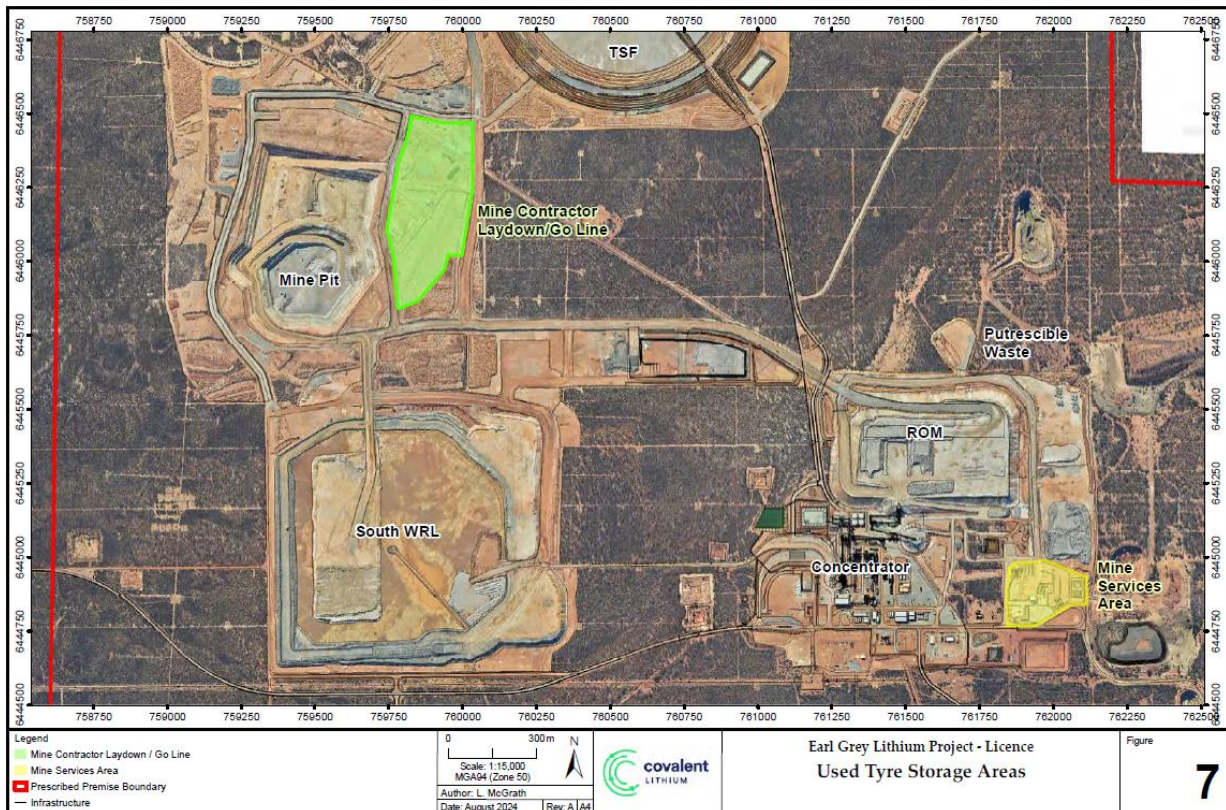


Figure 5: Used tyre storage areas

2.5 Part IV of the EP Act

The Earl Grey Lithium Project is covered by three Ministerial Statements (MS): 1167, 1118 and 1199. The most recent one, MS 1199 (EPA 2022) was published on 22 November 2022 in relation to the proposal by Covalent Lithium Pty Ltd to develop a pegmatite-hosted lithium deposit at the abandoned Mount Holland mine site. The proposal was for conventional open-cut mining of the existing Earl Grey pit, and development of associated mine infrastructure.

The mining proposal utilises some existing infrastructure and disturbed areas. The mining proposal involves disturbance of 667 ha of land, including new clearing of up to 386 ha of native vegetation, which is habitat for significant fauna species. Two threatened fauna species Malleefowl (*Leipoa ocellata*) and Chuditch (*Dasyurus geoffroyi*), and one threatened flora species Ironcap Banksia (*Banksia sphaerocarpa* var. *dolichostyla*), all listed as Vulnerable at the Commonwealth and State level and are known to occur within the proposal Development Envelope.

The licence holder submitted a revised proposal to the EPA that included significant amendment to MS 1118, to incorporate construction and operation of a solar plant (including an added 32 ha of native vegetation clearing), variation to the airstrip width (including an added 24 ha of native vegetation clearing), changes to the tailing waste disposal methodology from 'dry' to 'wet' tailings, co-disposal of inert refinery waste generated from the Kwinana Lithium Refinery to the approved waste rock landform, and modification to flora and fauna exclusion areas. The MS Revised Proposal 1199 was published on 23 November 2022.

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 2020a).

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 2 below. Table 2 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 2: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Dust	Operation of Concentrator; including transport and handling of ore, crushing and screening of ore and material transfer points around chutes and conveyor belts.	Air/windborne pathway	<ul style="list-style-type: none"> Dust suppression water sprays to be operating when processing plant is operating. Dust collectors to be operating when processing plant is operating and are to be maintained as per manufacturers specifications. Water sprays to be installed at crushing and screening points and operating during operations. Dust suppression (e.g., water trucks) used on unsealed roads and access tracks, cleared areas and at locations of high dust risk, and where dust generation is visible. Vehicles will comply with site Traffic Management Plan, which includes vehicle speed limits on haul roads, work, and camp sites (Speed limits will be reduced where necessary to minimise dust emissions). Vehicles will remain within the designated roads and tracks, and park

Emission	Sources	Potential pathways	Proposed controls
			<p>only in allocated areas.</p> <ul style="list-style-type: none"> • Monthly compliance audits and inspections will be undertaken; and • Incident and hazard reporting will be undertaken where there this is noncompliance with these requirements.
Noise	Operation of Concentrator (crushing and screening circuit) and transfer of concentrate and tailings.	Air/windborne pathway	<ul style="list-style-type: none"> • Mobile equipment to be operated and serviced in line with the manufacturer's specifications. • Maximum sound power levels specified for equipment (if required); and • Complaints relating to noise will be recorded and investigated as per the Covalent Incident Management Procedure.
<p>Hydrocarbon spills / leaks.</p> <p>Contaminated stormwater (contamination from hydrocarbon or process chemical spills/ leaks and sediment runoff from stockpiles)</p>	Operation of Concentrator, and associated machinery	<p>Direct discharge to land / overland flow through stormwater</p> <p>Seepage to soil and groundwater</p>	<ul style="list-style-type: none"> • Areas within the process plant where hydrocarbons or reagents are stored or have the potential for sheet flow to be contaminated (stockpile areas, workshops, refueling areas etc.) will be developed as bunded containment areas. • These areas will be directed to grated sumps from where potentially contaminated water will be pumped back to the processing facility. • In line with AS 1940:2017, the bunding will be sized to contain 110% of the capacity of the largest storage vessel within the bund. • Spill kits will also be located close by to refueling areas, mobile refueling facilities, workshops, and storage areas. • If a hydrocarbon / chemical release occurs it will be controlled, contained and removed using spill kit materials or other absorbent material. Contaminated soils will be collected and disposed to an appropriately licensed waste facility; and • Hydrocarbon and chemical spills are reported internally as an environmental incident and larger spills with the potential to cause contamination are reported externally to DWER.
Sediment laden	Water and	Direct	<ul style="list-style-type: none"> • Stormwater is to be managed so

Emission	Sources	Potential pathways	Proposed controls
stormwater	sediments generated via runoff from operational areas.	discharge / overland flow via stormwater	<p>contaminated or potentially contaminated stormwater is captured to prevent release into the environment.</p> <ul style="list-style-type: none"> Stormwater settlement ponds/basins to have a minimum of 300 mm freeboard maintained. Crushing and screening plant and associated stockpiles to be located within a bunded area which will contain any potentially contaminated stormwater runoff.
Discharge of RO plant brine to the Earl Grey saline water storage pit (brine will be trucked to the pit – no pipeline)	<p>Overtopping of Earl Grey saline water storage pit.</p> <p>Pipeline spills / leaks</p>	<p>Direct discharge to land.</p> <p>Seepage through soil into groundwater.</p>	<ul style="list-style-type: none"> Brine analysed every 24 hours.
Discharge of RO plant brine to the South Ventilation Raise (SVR)	Pipeline spills / leaks	Direct discharge	<ul style="list-style-type: none"> Brine analysed every 24 hours with discharge to SVR allowed up to 120,000 µS/cm. Brine >120,000 µS/cm will be diverted to other approved discharge locations. Pipelines to be constructed from HDPE, and installed to meet the relevant Australian Standards (AS/NZS 4130, AS/NZS 4131 and AS2033) Underground pipeline installed in trenches. Pipeline constructed above ground installed within secondary containment adequate to contain any spill for a period equal to the time between routine inspections. Pipeline to be inspected daily for visual integrity and leak assessment and a written log maintained with each inspection signed off by the person who conducted the inspection.
Fire / black smoke	Tyre storage area	Air/windborne pathway	<ul style="list-style-type: none"> Tyres will be stored in batches of not more than 100 tyres with a separation distance of at least 6 m between each batch of stored tyres to provide sufficient fire break between the tyre batches. No smoking or hot works in proximity to tyre storage.
Fire debris and	Tyre storage	Direct	<ul style="list-style-type: none"> All tyre storage will be on traffic

Emission	Sources	Potential pathways	Proposed controls
wash waters	area	discharge / overland flow via stormwater	<p>compacted hardstands delineated by safety bunds to separate these areas from surrounding activities or within sea containers in batches of no more than 100 tyres.</p> <ul style="list-style-type: none"> If fire suppressant water is required, it will be restricted to the confines of the respective tyre storage area.
Untreated and partially treated sewage	Overtopping, spillage, or leakage of untreated or partially treated wastewater	Infiltration to soil and percolation through to groundwater	<ul style="list-style-type: none"> Construction of containment bund around perimeter to contain any spills within premises boundary. WWTP built on a hard stand.
Treated sewage used for dust suppression	Discharge of treated effluent for dust suppression	Direct application to soil and vegetation	<ul style="list-style-type: none"> Recycled Water Quality Management Plan prepared in accordance with the “<i>Guidelines for the nonpotable uses of recycled water in Western Australia (2024)</i>” Water quality to be monitored in accordance with above guideline for high risk end use. UF Plant to produce water with <i>E. coli</i> limit of <1 CFU/100 mL.

3.1.2 Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020a), 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 3 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 2020b)).

Table 3: Sensitive receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
No human receptors	<p>No human receptors within >10 km of the premises.</p> <p>Nearest town is Marvel Loch located 75 km north-west of the premises</p> <p>The Earl Grey mine site accommodation camp is about 1,500 m from processing area but is not considered a sensitive receptor and will not be assessed further.</p>
Environmental receptors	Distance from prescribed activity
Threatened Ecological	Ironcap Hills banded ironstone formation (overlaps premises)

<p>communities</p>	<p>boundary)</p> <p>Previous advice from DBCA was that the proposal is not expected to cause significant impacts. The Earl Grey Lithium Project was also assessed under Part IV (MS 1118 and MS 1119), and this environmental receptor is not considered further in this assessment.</p>
<p>Underlying groundwater</p>	<p>There are no registered bores within the site; however, 12 registered bores within approximately 4 and 10 km from the southern boundary of the site and two registered bores within approximately 6 and 10 km from the north-eastern boundary of the site (360 Environmental, 2020).</p> <p>Based on previous investigations, depth to the water table ranged from 58 metres below ground level (mbgl) to 70 mbgl.</p> <p>Groundwater is saline to hypersaline with total dissolved solids (TDS) levels varying between 7,640 mg/L and 119,000 mg/L. (360 Environmental, 2020).</p>
<p>Threatened and Priority Flora</p>	<p>Classified threatened (under the <i>WA Biodiversity Conservation Act 2016</i>) and vulnerable (under the EPBC Act) species <i>Banksia sphaerocarpa var. dolichostyla</i> are reported to be present at the site</p> <p>Exclusion zones exist around threatened or priority flora present within the premise's boundary. This is managed under the ministerial statement (Flora management plan).</p>
<p>Threatened fauna</p>	<p>Several conservation significant fauna species have been found recently (last 5 years) at the site. <i>Leipoa ocellate</i> (Malleefowl) and <i>Dasyurus geoffroii</i> (Chuditch) have been sited within the premises boundary.</p> <p>Malleefowl mounds exist near the processing area. Exclusion zones exist around mounds which is managed under ministerial statement (Fauna management plan).</p>
<p>Surface water</p>	<p>No major surface water features within 5 km of the site.</p> <p>The only notable surface water feature is a constructed ephemeral drainage line that starts at the northwest tip of the airstrip and runs northeast past the processing plant area. Apart from this constructed drainage line, the Project area does not intersect any other identifiable drainage lines or creeks, with runoff generally occurring as sheetwash in a northeasterly direction.</p>

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020a) for those emission sources which are proposed to change and considers 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 4.

The Revised Licence L9326/2022/1 that accompanies this Amendment Report authorises emissions associated with the operation of the premises i.e. Category 5 - Processing or beneficiation of metallic or non-metallic ore, Category 12 - Crushing and screening, and Category 57 - used tyre storage activities.

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

Table 4. Risk assessment of potential emissions and discharges from the premises

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								
Operation of Concentrator. Screening, crushing, processing, unloading, loading and storage of material. Vehicle movements	Dust	Air/windborne pathway potentially causing ecosystem disturbance due to smothering of vegetation	No human receptors. Nearest town is Marvel Loch located 75 km north-west of the Premises.	Refer to section 3.1	C = Minor L = Unlikely Medium Risk	Y	Condition 1, condition 6	Dust emissions are expected to be generated from operation of the Concentrator and associated infrastructure. However, the distance to residential receptors is considered to be too great for dust impacts from operation of the project to occur. The Delegated Officer considers that a pathway for dust emissions to human receptors does not exist. Low level offsite impacts to vegetation may occur during operations due to the expected dust emissions generated by the crushing circuit of the Concentrator / loading and unloading of ore and products and vehicle movements. This risk event will probably not occur in most circumstances due to the applicant's proposed controls. The applicant's infrastructure controls (water sprays etc.) will be conditioned within the licence.
	Noise	Air/windborne pathway causing impacts to health and amenity	No human receptors. Nearest town is Marvel Loch located 75 km north-west of the Premises.	Refer to section 3.1	N/A	N/A	N/A	Noise emissions are expected to be generated during operation of the Concentrator however the distance to human receptors is considered to be too great for noise impacts to occur. The Delegated Officer considers that a pathway for noise emissions does not exist. The provisions of the <i>Environmental Protection (Noise) Regulations 1997</i> are

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				
								also applicable.
	Hydrocarbon spills / leaks	Direct discharge to land. Overland runoff during rainfall events potentially causing ecosystem disturbance offsite.	Localised contamination of soils and impacts to vegetation No significant nearby surface water features	Refer to section 3.1	C = Minor L = Unlikely Medium Risk	Y	Condition 1, condition 10	Low level onsite impacts and minimal off-site impacts from hydrocarbon emissions may occur during operations. It is unlikely for this risk event to occur due to the applicant's proposed controls. Operational controls are conditioned within the licence.
	Sediment laden stormwater	Direct discharge to land. Overland runoff during rainfall events potentially causing ecosystem disturbance offsite.	No significant nearby surface water features Native vegetation (Impacts to priority flora within premises boundary managed under ministerial statement.).	Refer to section 3.1	C = Minor L = Unlikely Medium Risk	Y	Condition 1, condition 12	Low level onsite impacts and minimal off-site impacts from sediment emissions may occur during operations. It is unlikely for this risk event to occur due to the applicant's proposed controls. Operational controls are conditioned within the licence
	Discharge of RO plant brine to the Earl Grey saline water storage pit (brine will be trucked to the pit – no pipeline)	Direct discharge to land (storage of brine in Earl Grey saline water storage pit) via overtopping potentially causing ecosystem disturbance.	Localised contamination of soils and impacts to vegetation No significant nearby surface water features	Refer to section 3.1	C = Moderate L = Rare Medium Risk	Y	Condition 1	Mid-level onsite impacts to soil and vegetation may occur if the pit were to overtop causing a release of stored water to the environment (high in salts). The Delegated Officer believes this risk event may only occur in exceptional circumstances due to the large available storage volume within the old Earl Grey saline storage water pit (approximately 1,216,240 m ³).
		Seepage of brine from Earl Grey saline water storage pit into groundwater resulting in impacts to groundwater quality.	Groundwater	Refer to section 3.1	C = Minor L = Rare Low Risk	Y	Condition 1, condition 6, condition 19, condition 24	N/A

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				
	Discharge of RO plant brine to the South Ventilation Raise (SVR)	Seepage through soil into groundwater	Groundwater	Refer to section 3.1	C = Minor L = Rare Low Risk	Y	Condition 1, condition 6, condition 19, condition 24	The Delegated Officer notes that water currently in the SVR is from groundwater and surface water runoff. The groundwater monitoring data for the site indicates that water quality in the area ranges from 80,000 to 120,000 mg/L TDS. Depending on efficiency of the RO plant and level of salt in the process streams the salt content of the waste brine will vary from 9,000 mg/L to 45,000 mg/L. The average expected total dissolved solids (TDS) concentration of the brine from the RO plant is expected to be 15,000 mg/L (mainly as NaCl). Monitoring of ambient concentrations during operations is included as a condition in the licence.
		Direct discharge to land via pipeline rupture (transport of brine to SVR) potentially causing ecosystem disturbance offsite.	Localised contamination of soils and impacts to vegetation No significant nearby surface water features	Refer to section 3.1	C = Minor L = Unlikely Medium Risk	Y	Condition 1	Low level onsite impacts may occur due to rupture of pipelines transporting RO brine due to the saline nature of the waste. This risk event is unlikely to occur due to the applicant's controls (bundling, inspections of pipelines and most pipeline being installed underground).
Storage of used tyres	Fire / black smoke	Air emissions associated with potential combustion of tyres may include VOCs, PAHs, dioxins, ash, NOx and CO2	Native vegetation adjacent to premises Impacts to priority flora within premises boundary managed under ministerial statement No human receptors.	Refer to section 3.1	C = Minor L = Unlikely Medium Risk	Y	Condition 14	The Licence Holder proposes adequate storage of used tyres prior to collection by third-party carrier. No tyres will be burned or buried, and the Licence Holder has proposed controls in the event of an emergency fire on-site.
	Fire debris and wash	Discharges to land from fire control	Localised contamination of	Refer to	C = Minor	Y	Condition 14,	

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				
	waters	activities which may include liquid emissions containing hydrocarbon, metals and PM.	soils and impacts to vegetation No significant nearby surface water features	section 3.1	L = Unlikely Medium Risk		condition 15	
Addition of a new Ultra-Filtration (UF) Plant to the existing Wastewater Treatment Plant (WWTP) to produce water for dust suppression	Untreated and partially treated sewage	Infiltration to soil.	Localised contamination of soils and impacts to vegetation	Refer to section 3.1	C = Slight L = Possible Low Risk	Y	N/A	N/A
	Treated sewage Also, for dust suppression	Discharge of treated effluent via spray field. Direct application to ground, soil and vegetation.	Localised contamination of soils and impacts to vegetation	Refer to section 3.1	C = Minor L = Possible Medium Risk	Y	Condition 6, condition(s) 7 – 9, condition 16	The Delegated Officer believes wastewater produced from the UF Plant will be of high quality, suitable dust suppression and watering as per DOH Guidelines. Licence Holder propose water quality to be monitoring in accordance with above guideline for high-risk end use.

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

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

The disposal of wastes (DMS, reject and mica) into the waste rock landform has not been assessed and has not been authorised to be discharged to the waste rock landform as it was not included within the scope of the previously assessed works approval / amendment application(s) (not enough information has been provided to carry out a risk assessment). This needs to be included and assessed in a subsequent licence amendment application. Tailings disposal into an IWL/TSF has been risk assessed under W6673/2022/1.

4. Consultation

Table 5 provides a summary of the consultation undertaken by the department.

Table 5: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website 10 September 2024.	None received.	N/A
Licence Holder was provided with draft amendment on 16 October 2024.	Comment received by Licence Holder on 17 October 2024. Refer to Appendix 1	Refer to 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 6 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 6: Summary of licence amendments

Condition no.	Proposed amendments
Cover page	Updated registered business address. Added categories 12 and 57 to the licence. Add assessed production capacity of the Concentrator to the licence. Reformatted prescribed premises category description table.
Instrument history	Include this licence amendment summary of changes along with previous works approvals and works approval amendments related to the Earl Grey project to the licence.
Condition 1, Table 1	Added Concentrator, pipelines, stormwater management infrastructure, crushing and screening plant, RO plant, and RO brine pipeline, along with operational requirement and infrastructure location.
	Removed Sequence batch reactor wastewater treatment plant Train 3
	Added some text to clarify between different parts of infrastructure and updated infrastructure location cross-referencing.
Condition 2, Table 2	Added 'Used trye storage' to site infrastructure along with acceptance specifications
Condition 6, Table 3	Added 'RO Plant Brine' as an authorised emission into the Earl Grey saline water storage pit and South Ventilation Rise.
Condition 7, Table 4	Added 'dust suppression' as a discharge point

Condition 17, Table 6	Removed Sequence batch reactor wastewater treatment plant Train 3
	Added some text to clarify between different parts of infrastructure and updated infrastructure location cross-referencing.
Condition 24, Table 8	Added volume of RO brine deposited to SVR or Earl Grey saline water storage pit as a monitoring input.
Definitions	Added "SVR" as "South Ventilation Raise" to Definition table
Figures	Updated revised / higher quality Figures supplied licence holder. that show new infrastructure. Added in Figure 6 "Used tyre storage" and Figure 7 "SVR and Cat 12 crushing and screening plant"

References

1. Covalent Lithium 2024, *Application form: Licence amendment L9326/2022/1 Earl Grey Lithium Project*, Kwinana Beach, Western Australia
2. Covalent Lithium 2024, *Works Approval W6460/2020/1: Environmental Commissioning Report*, Kwinana Beach, Western Australia
3. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
4. Department of Water and Environmental Regulation (DWER) 2020a, *Guideline: Risk Assessments*, Perth, Western Australia.
5. Department of Water and Environmental Regulation (DWER) 2020b, *Guideline: Environmental Siting*, 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
Cover page	Licence Holder note that registered business address has changed from St Georges Terrace, Perth to Mason Road, Kwinana.	This has been changed on the licence cover page
	One mining tenement missing from premises details.	G77/129 added to premises details.
Condition 1, Table 1 Infrastructure requirements	The Licence Holder notes that Category 12 crushing and screening activities may occur a several sites, depending on construction requirements. Additional activity locations have been added to Figure 7.	<p>The distance to residential receptors is considered too great for dust impacts from operation of the project to occur. The Delegated Officer considers that a pathway for dust emissions to human receptors does not exist.</p> <p>Low-level offsite impacts to vegetation may occur during operations due to the expected dust emissions generated by the crushing and screening activity, but this risk event will probably not occur in most circumstances due to the applicant's proposed controls (water sprays etc.) which are conditioned within the licence.</p> <p>The Delegated Officer accepts the proposed change to Category 12 Crushing and screening locations within the premises boundary.</p>
	<p>The Licence Holde clarified that volume of RO plant brine will be monitored, but this will not be via online instrumentation.</p> <p>The Licence Holder request that this condition be removed from the final licence.</p>	The Delegated Officer has removed the reference to online instrumentation from the licence.
	The Licence Holder clarifies that most of the RO brine pipeline is underground, and the proposed volumes are small, so a daily visual inspection is considered unnecessary. The Licence Holder would like to change the frequency of inspections to monthly.	The Delegated Officer accepts this change. The volume of brine going from RO Plant to South Ventilation Plant is proposed to be small, and the pipeline is short. Both RO Plant and SVR are located within the Concentrator controlled drainage area.

Condition	Summary of Licence Holder's comment	Department's response
Condition 7, Table 4 Emissions and discharge limits	The Licence Holder would like the limit of <i>E. coli</i> changed from <1 CFU/100ml to <10 CFU/100ml. The reference to <1 CFU was from a manufacturers document and the Licence Holder would prefer to not be held to such a strict limit.	The Delegated Officer notes that under DOH guidelines for water to be used for dust suppression or for (urban) irrigation with potential human exposure, i.e., camp garden watering, <i>E. coli</i> levels should be <10 CFU/100 ml. The Delegated Officer does not believe this change will significantly alter environmental risk and agrees to the proposed change to allow the Licence Holder flexibility in UF Plant operations.
Condition 16, Table 5 Treated effluent water quality	The Licence Holder request that 'turbidity' be removed from the table. This parameter was included in the original works approval for the WWTP and related to early operations and commissioning. Going forward, testing for turbidity is not required.	The Delegated Officer agrees to this change. Other parameters such as TDS, Total N, Total K, pH and <i>E. coli</i> are still to be monitored monthly during operation.
Figure 1	The Licence Holder provided a new map of the prescribed premises with current site layout.	The Delegated Officer has replaced Figure 1 with the updated version.
Figure 7	Additional Category 12 Crushing and screening locations have been added to the licence.	The Delegated Officer has replaced Figure 7 with the updated version.