



Application for Licence Amendment

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

Licence Number	L9037/2017/1
Licence Holder	Process Minerals International Pty Ltd
ACN	063 988 894
File Number	DER2017/000318-1
Premises	Mount Marion Lithium Project Mining tenement M15/1000, M15/717 and on private land known as Hamptons Lease Area 53, portion of Lot 105 on Deposited Plan 40396, Volume 2668 Folio 420. As defined by the Premises maps attached to the Revised Licence
Date of Report	5 July 2022
Decision	Revised licence granted

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

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1. Decision summary

Licence L9037/2017/1 is held by Process Minerals International Pty Ltd (Licence Holder) for the Mount (Mt) Marion Lithium Project (the premises). The premises is located 36 kilometers south-west of the City of Kalgoorlie-Boulder in the Eastern Goldfields region of Western Australia, on mining tenement M15/1000 and M15/717.

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 L9037/2017/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the Department of Water and Environmental Regulation (DWER, or 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

Process Minerals International Pty Ltd is a 100% subsidiary of Mineral Resources Limited (MRL) and the Mt Marion Lithium Project is jointly owned by MRL and joint venture partner Jiangxi Gangfeng Lithium Co. Ltd.

Mineral Resources Limited, through Process Minerals International Pty Ltd (as the Licence Holder), is responsible for the operation of the premises which include mining, accommodation, and approvals for Mt Marion Lithium Project development. The premises is licenced to operate under *Environmental Protection Act 1986* (EP Act) Licence L9037/2017/1.

On 16 December 2021, the Licence Holder applied to the department to amend Licence L9037/2017/1 under section 59 and 59B of the EP Act. The following amendments are being sought:

- Change in Prescribed Premise boundary.
- Change in Category 6: Dewatering location (prescribed premise)
- Change to the Category 64: Class II putrescible landfill
- Addition of Category 12: Screening of material,
- Change to Category 85: Sewage facility and WWTP capacity,
- Change in Table 9: Infrastructure and Equipment description, and
- Removal of completed conditions.

This amendment is limited only to capacity changes to Category 12, 64 and 85 activities from the Existing Licence. No capacity changes to the existing Licence relating to Category 5, 6 and 57, 73, or 85B have been requested by the Licence Holder. Some administrative changes have been requested by the Licence Holder. Table 1 below outlines the proposed changes to the existing Licence.

Table 1: Proposed design or throughput capacity changes

Category	Current design capacity	Proposed design capacity	Description of proposed amendment
Category 5: Processing or beneficiation of metallic or nonmetallic ore	3,000,000 tonnes per year	N/A	Removal of specific conveyor numbers from the licence.
Category 6: Dewatering	650,000 tonnes per year	N/A	N/A
Category 12: Screening of material	N/A	100,000 tonnes per year	Mobile screening plant to screen 100,000 tpa of mine waste for use as construction material to be used on an ad-hoc basis for construction projects. All screening operations will be confined to within the prescribed premises boundary.
Category 57: Used tyre storage	1,000 tyres	N/A	N/A
Category 64: Class II putrescible landfill	1,250 tonnes per year	2,000 tonnes per year.	An increased footprint of an active landfill facility location is proposed in an existing Waste Rock Landform (WRL) located within both M15/7171 and M15/1000. Increase the per annum (p/a) volume allocation; to accommodate the increase in camp accommodation.
Category 73: Bulk storage of chemicals	480 kL LNG, 554 kL diesel	N/A	Update the bulk fuel storage infrastructure to match what is currently installed on the premises
Category 85: Sewage pumping station	70 m ³ /day	90 m ³ /day	Replacement of two 35 m ³ systems with a single 70 m ³ /day WWTP Additional 20 m ³ /day WWTP to increase capacity of the WWTP system to 90 m ³ /day.
Category 85B: Water desalination plant	730,000 tonnes per year.	N/A	N/A

2.2.1 Proposed prescribed premises boundary change

The Licence Holder has requested an alteration to the current boundary of the prescribed premise, expanding it north to include a portion of Lot 105 on Deposited Plan 40396, Volume 2668 Folio 420 (Hamptons Lease Area) as identified in Figure 1.

Lot 105, including the Hamptons Lease Area, is owned by Northern Star (Hamptons Gold Mining

Areas) Limited (NS Hamptons). NS Hamptons has granted a lease of the Hampton Lease Area to Reed Industrial Minerals Pty Ltd (Reed Industrial).

The Hampton Lease Area forms part of Mount Marion Lithium Project, and the project tenure is held by Reed Industrial, which is 50% owned by Mineral Resources Limited (MRL). The project is operated by Process Minerals International Pty Ltd (the Licence Holder), a wholly owned subsidiary of MRL. The Licence Holder has been given authority to act as an agent for, and on behalf of NS Hamptons in respect to all matters related to the conduct of exploration and mining operations on the Hampton Lease Area.

The increase in boundary increases the premises by 302.37 ha; and will facilitate mining activities in the North Pit. This activity has been approved under a development application through the Shire of Coolgardie (PA 12/2019) and Clearing Permit 8632-1.

The Delegated Officer has reviewed the relevant supporting documentation, supplied by the Licence Holder, and considers this change to be acceptable. Premises maps and tenements have been updated in the revised licence.

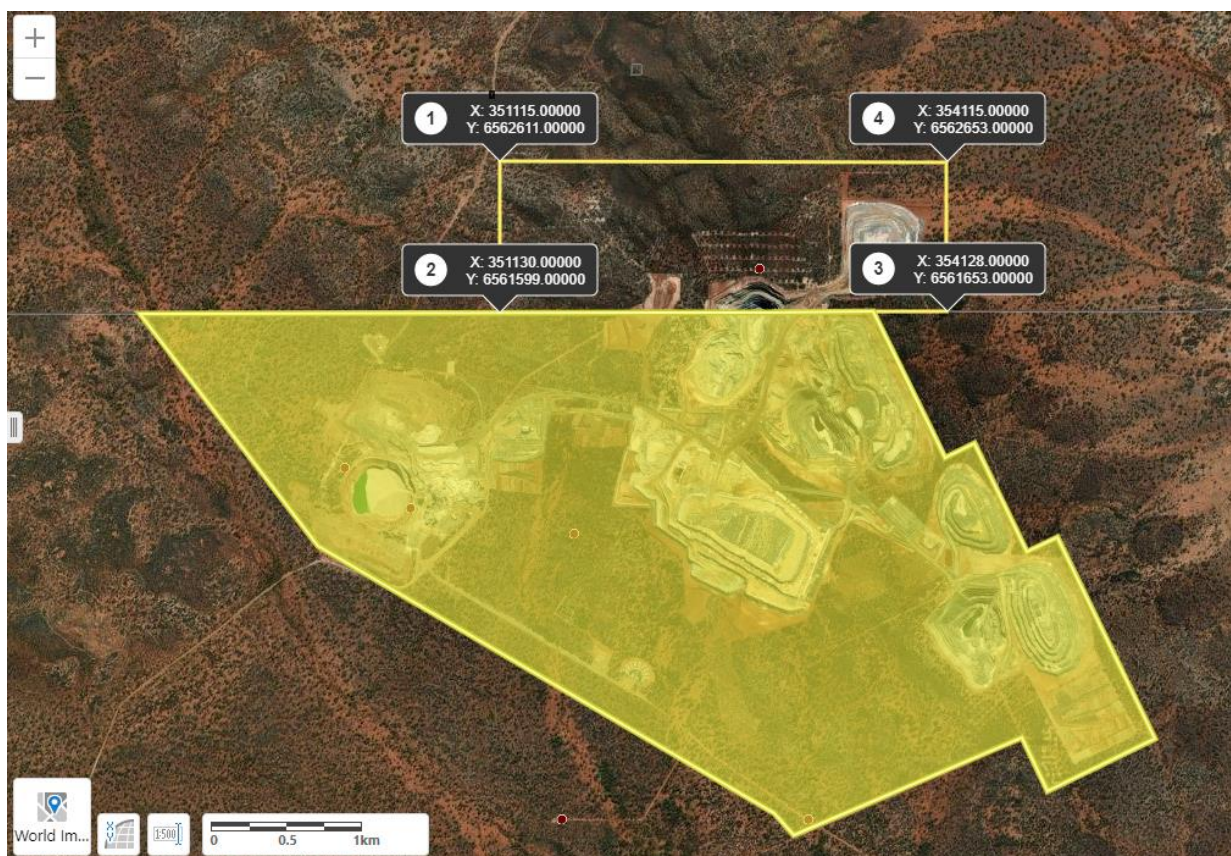


Figure 1: Prescribed premises (shaded yellow) and Hampton Lease (unshaded)

2.2.2 Expansion of dewatering location

The inclusion of the Hamptons Lease Area (refer 2.2.1) will also facilitate future pit dewatering activities as the northern mine pit development progresses.

The Delegated Officer reviewed the original analytical models by Golder Associates Pty Ltd (Golder 2018), which were previously assessed during an amendment to licence (September 2019). The Golder 2018 report was used to determine the abstraction allocation at Mount Marion, and it considered future dewatering of the north pit, within the Hamptons Lease Area.

The Delegated Officer notes that reported dewatering in the 2020 Annual Audit Compliance Report was 21,140 tonnes (0.021 GL), about 3% of the production capacity allowable in

L9307/2017/1, but that Golder (2018) indicated that dewatering would be variable over time, and that 0.65 GL/annum, including the dewatering from the Hamptons Lease Area, to be the upper limit threshold.

The currently approved volume allocation within Schedule 2, table 8 of L9307/2017/1 (seen above in Table 1), storage locations/discharge points and associated infrastructure will remain unchanged as indicated in Figure 2 (marked as “Pit Dewatering Pipeline & Turkey’s Nest”) and the Delegated Officer notes that no significant change to dewatering activities are proposed as part of this amendment application. The Delegated Officer has updated the licence with the requested expansion of the dewatering location into the Hamptons Lease Area.

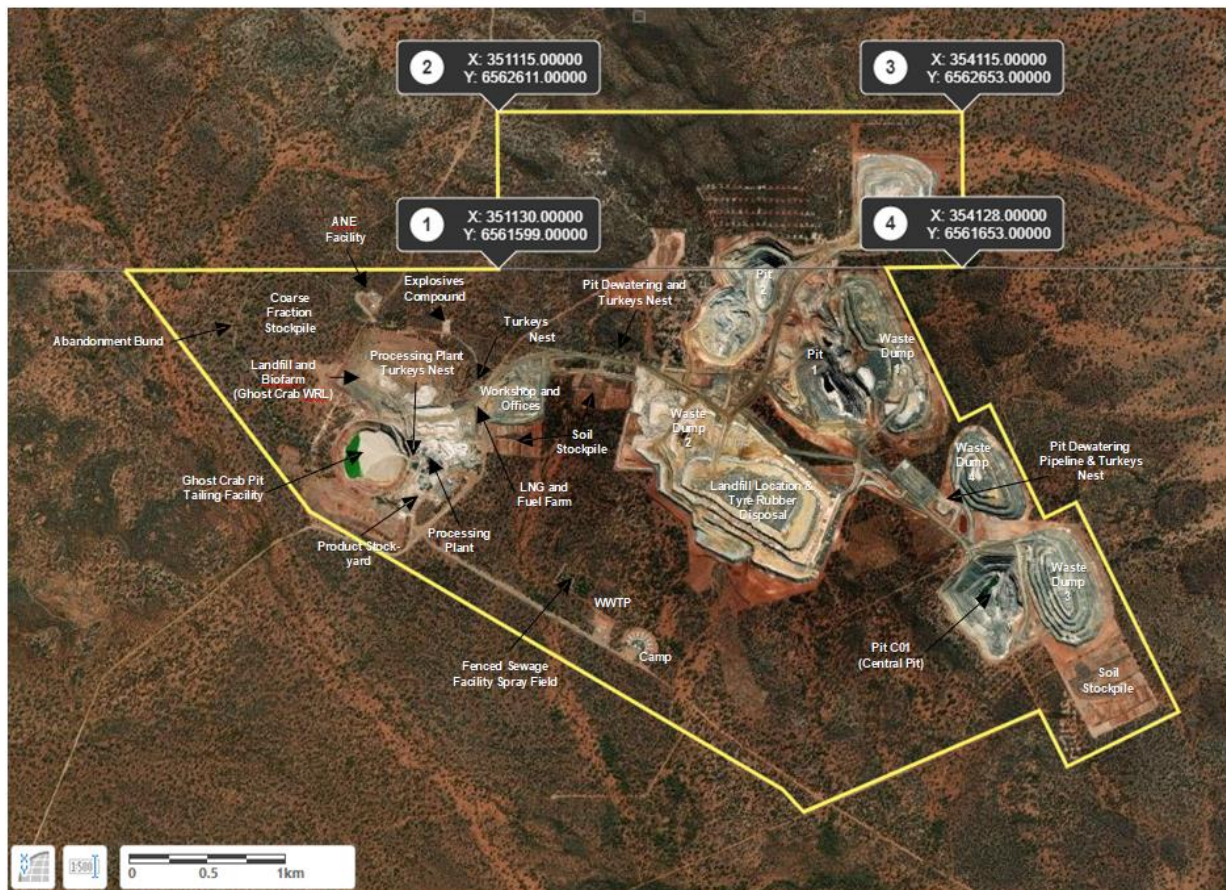


Figure 2: Current Mount Marion operation and site layout

2.2.3 Change to Category 64: Class II putrescible landfill

As reported in the Annual Audit Compliance Report in 2021, the final constructed location of the waste rock landform (WRL) landfill was 250 m to the west of the proposed footprint, see Figure 3.

The Licence Holder informed the Department that this was due to a change in site layout from original design plans. This non-compliance was reported to Industry Regulation and was investigated by Compliance and Enforcement and was deemed to be a minor variation to the licence conditions. The department suggested the Licence Holder correct and update the licence when next submitting a licence amendment application.

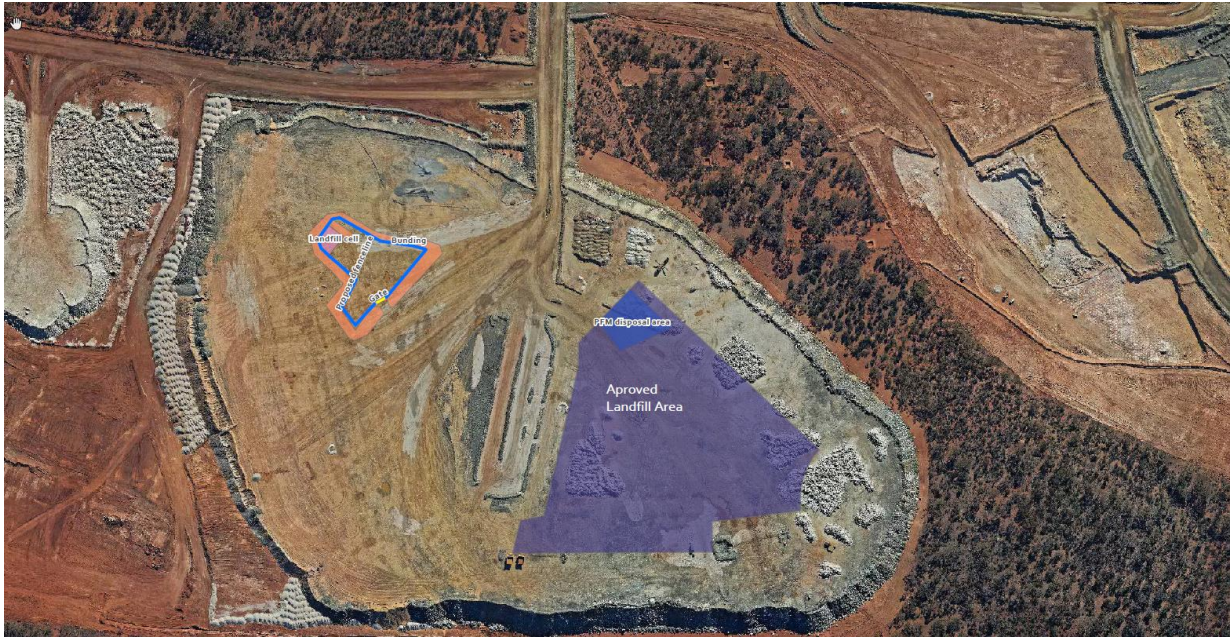


Figure 3: WRL landfill as approved by DWER and as constructed

As part of this amendment application the Licence Holder has requested that the footprint of the landfill facility include the constructed location of the landfill and be extended to cover the entire waste rock landform. The Licence Holder considers the increase in footprint will serve multiple purposes, including a reduction of risk of traffic interaction with mining equipment as the WRL continues to be developed.

Indicated in Figure 4, the proposed landfill location footprint is an expansion of previously approved landfill located within the active WRL.

In addition to the proposed increase in the landfill footprint, MRL are seeking to increase the per annum (p/a) volume allocation from 1,250 tonnes to 2,000 tonnes for the Category 64: Class II putrescible landfill.

The landfill will be managed under the *Environmental Protection (Rural Landfill) Regulations 2002* and *Landfill Waste Classification and Waste Definitions 1996* (as amended December 2009). Construction will be like the existing landfill located on M15/717 Waste Dump 2 that is currently operational.

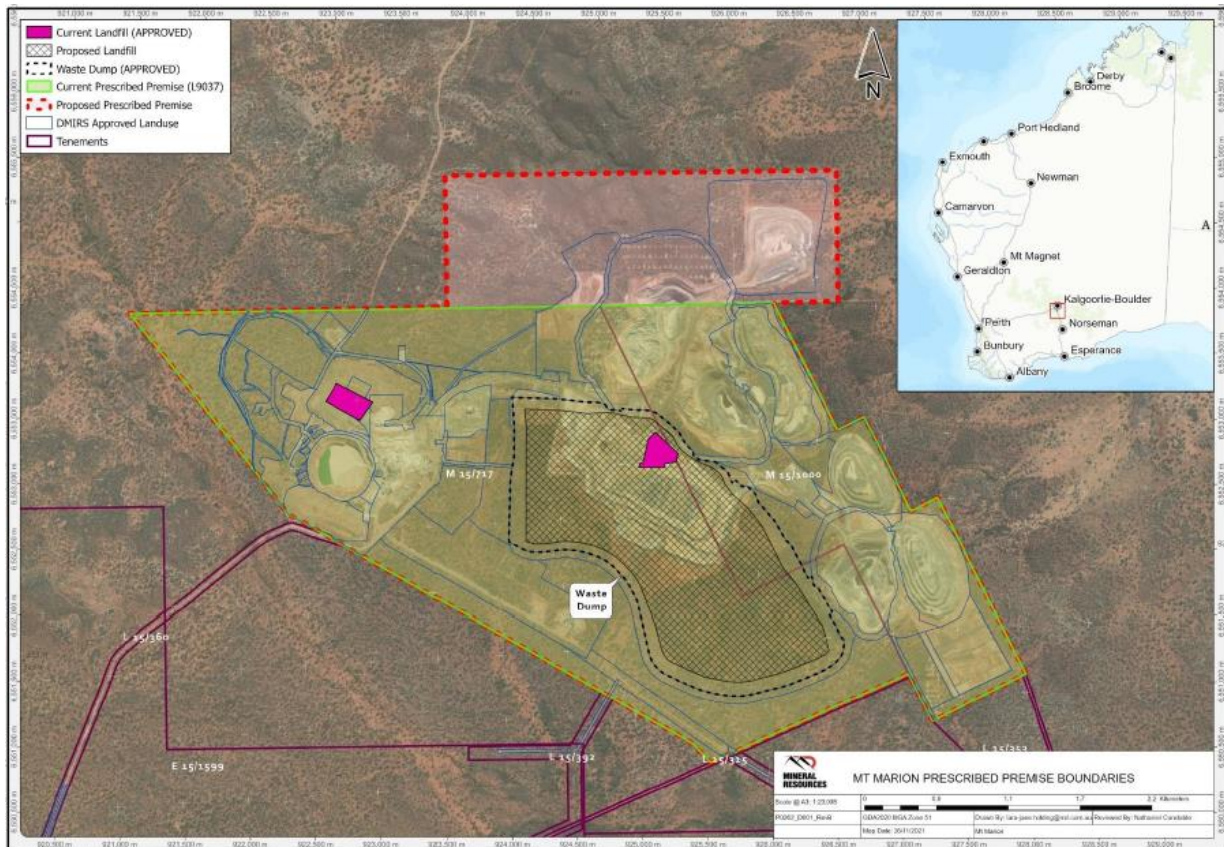


Figure 4: Proposed change to Mount Marion landfill area

2.2.4 Addition of Category 12: Screening of material

The Licence Holder propose to add an additional prescribed premises category (Category 12) to the licence, to allow for the installation and operation of mobile screening plant equipment within the premise boundary.

Table 2 describes the addition to the prescribed premises categories approved production / design capacity requested by this licence amendment.

Table 2: Proposed Category 12 activity

Proposed addition of category	Category threshold	Requested premises production or design capacity	Maximum premises production or design capacity
Category 12: Screening of material	50,000 tonnes or more per year	100,000 tonnes per year	600 tonnes per hour (equivalent to 5,256,000 tonnes per year, assuming 24 hours a day, 7 days a week).

The mobile screening plant equipment will be utilised to screen up to 100,000 tonnes per annum of mine waste for use as construction material to be used on an ad-hoc basis for construction projects, as they arise throughout the project's life of mine.

The Licence Holder does not consider that the proposed addition of mobile screening plant equipment will significantly increase the severity of impacts to receptors. The Licence Holder states that all screening operations will be confined to within the prescribed premises boundary.

Depending on the site requirements for either fine or lump material, Figure 5 and Figure 6 depict the expected configurations of the mobile crushing plant on site.

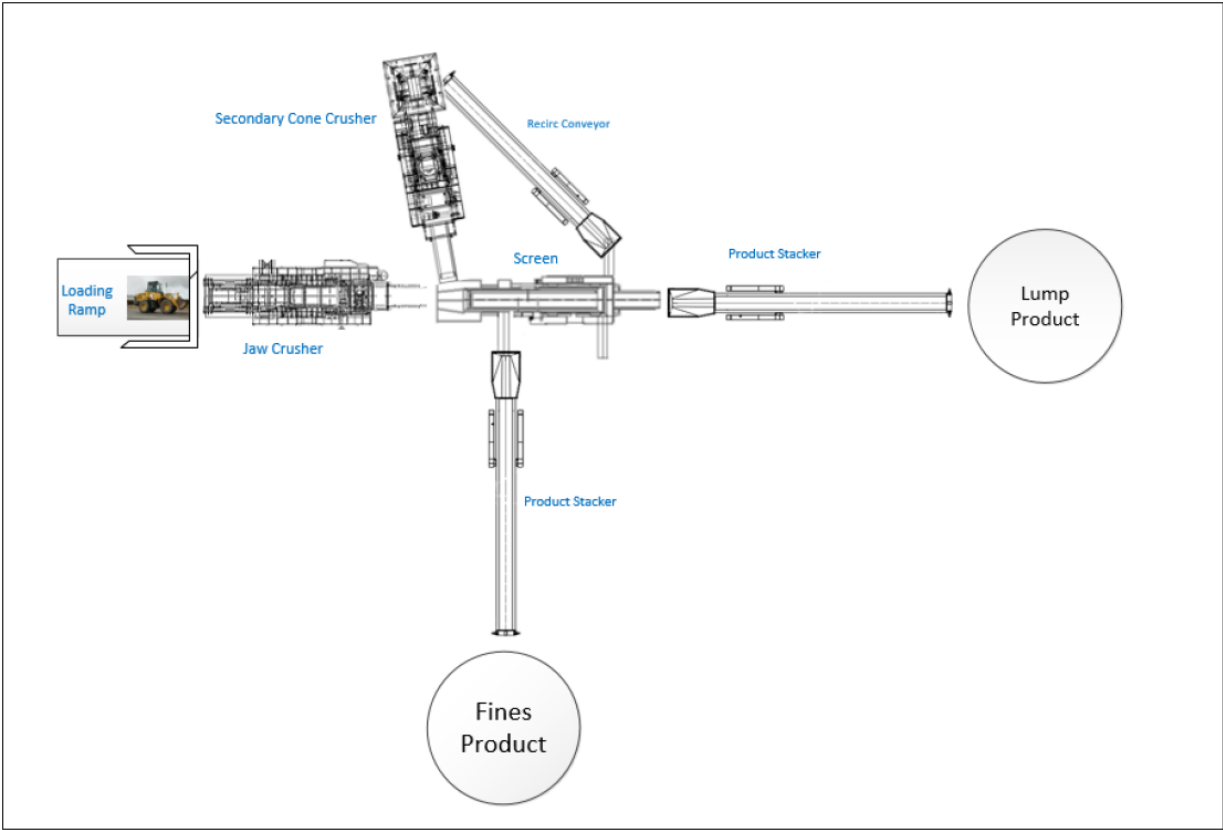


Figure 5: Mobile crushing fine and lump secondary crushing configuration

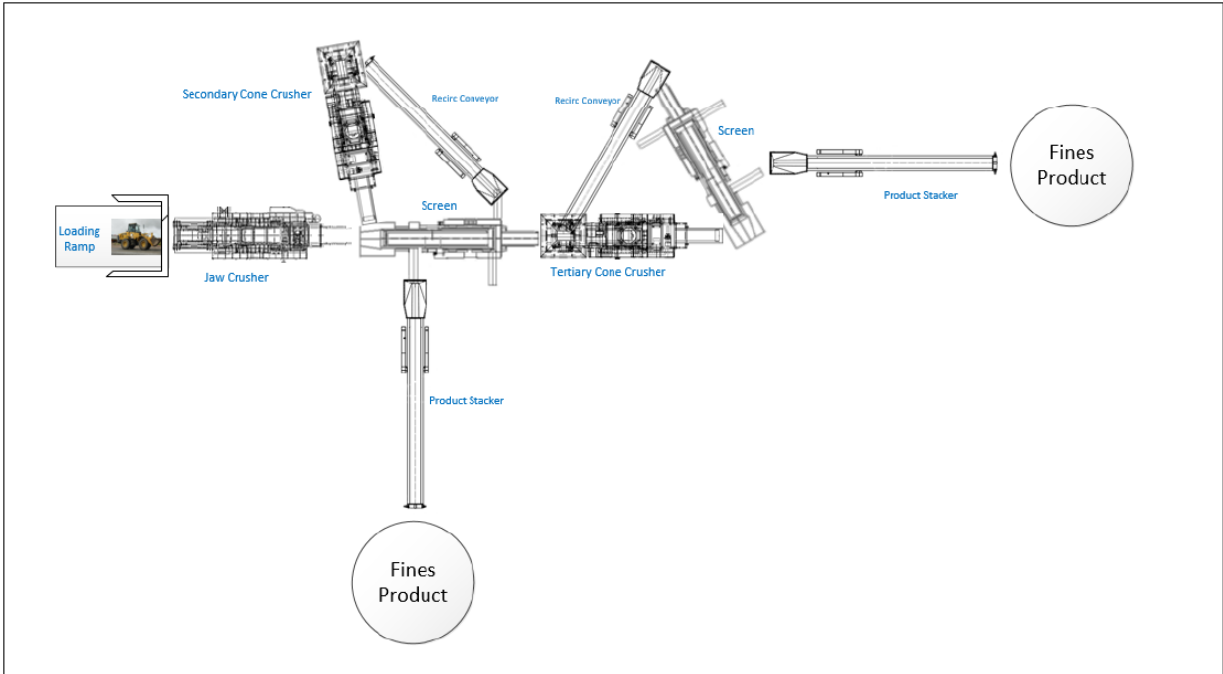


Figure 6: Mobile crushing fine tertiary crushing configuration

2.2.5 Change to Category 85: Sewage facility

The Licence Holder proposes to replace the two existing 35 m³/day Submerged Aerated Filter (SAF) wastewater treatment units with a single 70 m³/day SAF wastewater treatment unit.

In recent Annual Audit Compliance Reports (AACR) the Licence Holder has reported wastewater effluent discharged to the irrigation area exceeded the Treated Effluent Quality Limits of Licence L9037/2017/1 in seven instances in 2021. Inspections of the spray field by the Licence Holder did not identify any impacts to vegetation and the Licence Holder engaged a third-party wastewater specialist to provide advice on system adjustment on an ongoing basis.

The Licence Holder considers that the removal and replacement of the parallel units with a single unit will simplify the operational and maintenance requirements of the system and improve treatment reliability. Table 3 provides a comparison of the wastewater treatment system configuration before and after the proposed changes. The Licence Holder states that the new infrastructure will be a “like for like replacement”, except for the following:

- The new system comprises of one single 70 m³/day containerised SAF unit, whereas the original WWTP comprised of two 35 m³/day containerised SAF units connected in parallel.
- The new SAF unit does not have an internal Balance Tank and the Primary Tank No. 2 acts as an Anoxic Tank.
- The existing Irrigation Tanks has been retained to provide emergency storage capacity in the event the system is inoperable for a period due to fault and maintenance activities.

Table 3: Proposed SAF WWTP infrastructure description changes

Current licence infrastructure description	Proposed licence infrastructure description
<p><u>Two SAF WWTP (each 35 m³/day), consisting of:</u></p> <ul style="list-style-type: none"> • Internal Balance Tank • Primary Tank No.1 • Primary Tank No 2 • Anoxic Tank • Aerobic Tank • Clarifier Tank • Chlorine Contact Tank, and • Irrigation Tank 	<p><u>One SAF WWTP (70 m³/day), consisting of:</u></p> <ul style="list-style-type: none"> • Primary Tank No.1 • Primary Tank No 2 (Anoxic) • Aerobic Tank • Clarifier Tank • Chlorine Dosing Unit • 2 x External Balance Tanks (existing) • Irrigation Tank (new) • Potable Water Tanks (existing) • 1 x Emergency Overflow Tank (repurposed original Irrigation Tank)

2.2.6 Increase in WWTP capacity

Due to expected increase in worker capacity at the Mount Marion Project, the Licence Holder has requested that WWTP capacity be increased from 70 m³ to 90 m³/day through the addition of a second wastewater treatment plant.

The new WWTP plant will sit in parallel to the proposed 70 m³ unit on site, and make use of infrastructure, piping and electrical networks that remains once the existing 35 m³ units are removed (Figure 7).

The proposed WWTP will be a sequence batch reactor (SBR) system that operates in a five-step mode:

1. Filling of the reactor basin
2. A reaction phase
3. A settling phase
4. A decant phase
5. An idle phase

The reaction phase is a combination of anoxic and aerobic phases to achieve high levels of biochemical oxygen demand (BOD) and nitrogen removal.

The system is a 12 metre long, containerised unit, constructed of 6 mm steel, and “plug and play” capability, thus requiring minimal installation work on site. The vendor states that the system only require an inlet connection to the bar screen and electrical power connection to the control panel.

The proposed WWTP will discharge treated Class C wastewater to the environment by way of the existing irrigation field setup. This irrigation field was established and is maintained as per DoW WQPN 70 – Wastewater treatment and disposal – domestic systems.

The area that is used as an irrigation field falls under risk category D as it consists of fine-grained soils e.g. loam, clays or peat and the absence of any surface water bodies within 500 m of the site. To control the risk of eutrophication to land, the irrigation area was extended from 0.9 ha to 2 ha in May 2019. In the WWTP commissioning report (2019), the Licence Holder stated that about 3.5 ha were to be used for irrigation from the WWTP and this will be sufficiently sized to prevent excessive nutrient accumulation at 90 m³/day.

The Licence Holder expects the additional WWTP to meet the parameters listed in Table 4, meeting the existing licence limit as seen below.

Table 4: WWTP influent & effluent specifications

Parameter	Units	Effluent	Licence limit
Hydraulic Capacity	kL/d	20-50	-
BOD	mg/L	<20	<30
TSS	mg/L	<30	<40
TN	mg/L	<30	<50
TP	mg/L	<8	<12
pH	pH units	6.5 - 8.5	6.5 – 8.5
E Coli	cfu/100 mL	<1,000	<1,000
Chlorine	mg/L	0.2 - 2.0	-

Existing monitoring regimes are conditioned in the licence and the Licence Holder has not proposed any additional controls related to wastewater management. Future expansion of the WWTP will be assessed with attention paid to the AACR for the 2022/2023 reporting period.

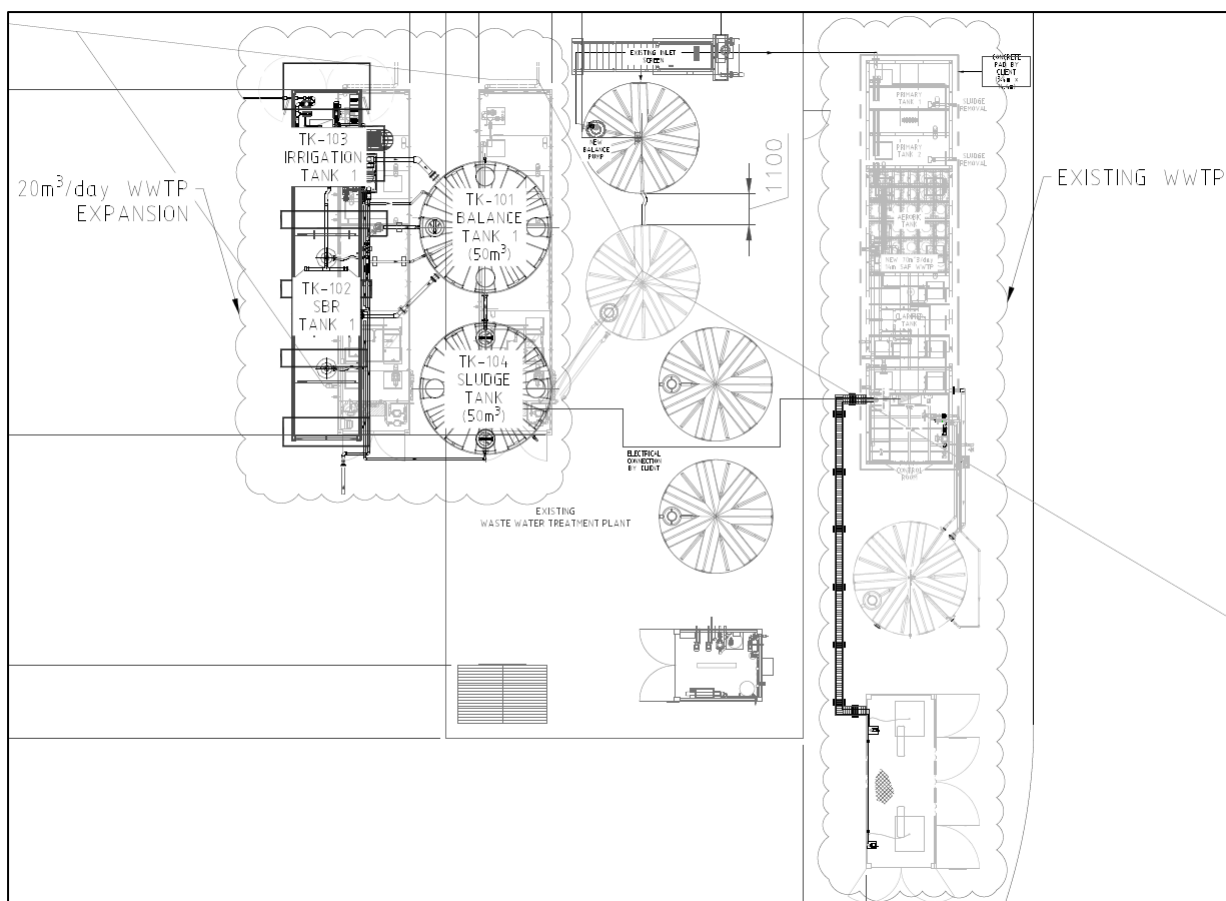


Figure 7: Mount Marion SAF wastewater treatment plant upgrade diagram

2.2.7 Changes to infrastructure and equipment description

Category 73: Bulk storage of chemicals

Previous licence amendments in 2017 and 2019 increased Category 73: Bulk storage of chemical capacity for diesel and liquified natural gas (LNG). However, the amended licence lists outdated infrastructure related to this Category. As part of this licence amendment the Licence Holder is seeking to update the bulk fuel storage infrastructure to match what is currently installed on the premises. The proposed changes are indicated below in Table 5 and the Licence Holder notes that the location of bulk fuel storage has not changed.

Table 5: Bulk fuel storage (category 73) description changes

Fuel	Current Licence Infrastructure Description	Proposed Infrastructure Description
Diesel (approved volume: 554 kL)	3 x 57 kL tanks and 1 x 53 kL tank.	3 x 57 kL tanks, 1 x 53 kL tank and 3 x 110 kL tanks.
LNG (approved volume: 480 kL)	4 x 60 kL tanks	8 x 60 kL tanks.

Category 5: Processing or beneficiation of metallic or non-metallic ore

The Licence Holder has requested that conveyor numbers (CV1 to CV11) be removed from Table 9: Infrastructure and equipment, so that additional conveyors can be installed where required. The Delegated Officer considers this requested amendment acceptable as conveyors will be fitted with water sprays where required, and the number of conveyors is not likely to impact overall emissions.

The Licence Holder has requested that some additional infrastructure and equipment be added to Table 9 of Licence L9037/2017/1 to reflect plant description changes, and proposed plant upgrade which duplicate the existing crushing infrastructure of the beneficiation plant. This upgrade is proposed to improve recovery in future plant feed and will allow the Licence Holder to achieve the licensed throughput of 3,000,000 tonnes per annum.

The Licence Holder considers the plant upgrade will improve screening efficiency; with better sized and designed screens and reduce over-crushing by replacing the rod mill crusher with a cone crusher.

These upgrades do not change the overall category limit for the premises and are not considered to increase assessed emissions from the activity. The Licence Holder expects that the reduction in over crushing will reduce fines generation and rates of dust emissions, relative to the current rod mill tertiary crushing.

The new crushing circuit incorporates existing dust management strategies with expected improved general rates of dust emissions from new and upgraded plant equipment including chutes and general materials handling. The changes to Category 5 infrastructure are listed in Table 6.

Table 6: Crusher and beneficiation plant (category 5) change

Existing infrastructure and equipment listed in L9037/2017/1	Proposed infrastructure and equipment*
Primary Crusher Secondary Crusher	Rock Breaker Primary Crusher Secondary Crusher
Conveyors (CV1- CV11)	Tertiary crusher Conveyors (CV1-CV11)
Product stacker	Product stacker
Drive in sumps	Drive in sumps
Dust suppression system	Dust suppression system
Rod Mill	Red Mill Tertiary crusher
Grinding circuit (ball mill), primary and secondary cyclone circuits, rejects hopper, conveyor and tailings pump	Grinding circuit (ball mill), primary and secondary cyclone circuits, rejects hopper, conveyor and tailings pump Secondary Screens Tertiary Screens Belt Feeders
Process and raw water tanks	Process and raw water tanks
Dense Media Separation (DMS) plant	Dense Media Separation (DMS) plant
Classification cyclone and classifiers	Classification cyclone and classifiers
Thickener	Thickener
Flotation circuit	Flotation circuit Mobile Crushing Plant

*red text denotes changes

Other activities

As part of the licence amendment application, the Licence Holder requested that the capacity of the workers accommodation camp be increased from 180 people to 250 people.

During a scoping meeting on 14 April 2022 a request was made by the Licence Holder to remove the number entirely and list the activity as “Workers’ accommodation camp”, without a maximum capacity. The Delegated Officer agreed to this request as the impact of the accommodation camp capacity is assessed as part of the proposed change to landfill and WWTP.

2.2.8 Removal of completed conditions from L9037/2017/1

As part of the licence amendment the Licence Holder has also requested to remove previously completed conditions “Specified Action” condition 21 on page 15 of L9037/2017/1:

“The Licence Holder must provide to the CEO, by 31 October 2019, a report on the analysis of radiological quality of the pit water in N2, N3 and C01 pits and the RO brine. The following radionuclide concentrations must be analysed as a minimum with results expressed in the units of becquerels per litre (Bq/L): radium 226, radium 228, uranium 238, gross alpha and gross beta.”

A report regarding this condition was originally submitted by the Licence Holder on 31 October 2019, with additional supporting documentation submitted on 13 November 2019, 20 December 2019, and 14 January 2020.

The department assessed the information that was provided and determined that the information satisfied the requirements of condition 21 of L9037/2017/1.

The Delegated Officer agrees that this condition has been complied with and has removed it from the amended licence.

DWER noted that radiological assay data was unable to be provided for surface water within C01 pit as there was no water available at the time of sampling. To date, no water has been encountered in this pit and DWER requests that the sampling of the water be conducted, and the results forwarded to DWER when available.

2.3 Legislative context and other approvals

Approval for the Mt Marion Lithium Project was obtained under the *Mining Act 1978* via Mining Proposal (MP) REGID 28674, granted on 2 February 2012, with clearing of approved infrastructure areas commencing in June 2012.

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 7 below. Table 7 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 7: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Dust	<p>Placement of screen and associated equipment including vehicle movements</p> <p>Operation of crushing and mobile screening plant</p>	<p>Air/wind dispersion.</p> <p>Impact to health and amenity.</p>	<ul style="list-style-type: none"> • The nearest residence is the Woolibar homestead, located approximately 15 kilometres from the premises. • Mobile screening plant fitted with shields and covers on transfer points. • Water trucks will be utilised to spray work areas, roads, and stockpiles during times when the screening plant is operational. • Daily inspection of plant area will include observation of dust assessment and walking of plant site perimeter. • Monitoring of operational and weather conditions to support dust management; and • Incident reporting system
Noise	<p>Placement of screen and associated equipment including vehicle movements (reversing beepers)</p> <p>Operation of mobile screening plant</p>	<p>Air/wind dispersion.</p> <p>Impact to health and amenity.</p>	<ul style="list-style-type: none"> • Noise emissions to be managed in accordance with the <i>Environmental Protection (Noise) Regulations 1997</i>. • The nearest residence is the Woolibar homestead and is located approximately 15 kilometers from the premises. • Regular servicing/maintenance of equipment.
Hydrocarbon (e.g., hydraulic oil or diesel) and chemicals	<p>Operation of vehicles, trucks, and mobile equipment</p> <p>Refueling of plant and equipment</p> <p>Damage to equipment causing leaks</p>	<p>Infiltration to groundwater via soil.</p>	<ul style="list-style-type: none"> • Screening plant infrastructure will undergo regular maintenance to ensure the risk of equipment failure is minimised. • Spillages will be cleaned up and disposed in accordance with MRL environmental procedures; and • Any release which is likely to cause pollution or environmental harm will be reported to the DWER in accordance with the <i>Environmental Protection Regulations 1987</i>.
Stormwater – sediment laden	<p>Screening of material</p> <p>Handling and stockpiling of material including loading of material into trucks</p>	<p>Overland runoff</p>	<ul style="list-style-type: none"> • Bund will be constructed around the screening plant and product stockpile area. • All hydrocarbons and dangerous goods on site will be stored and handled according to the applicable sections of the <i>Dangerous Goods</i>

Emission	Sources	Potential pathways	Proposed controls
	Vehicle movements		<p><i>Safety Act 2004, Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007 and Dangerous Goods Safety (Explosives) Regulations 2007.</i></p> <ul style="list-style-type: none"> • Chemical storage areas will be bunded with a containment capacity equivalent to 110% of the capacity of any tank or 25% of the total capacity of an interlinked system. • Regular inspection of bunded areas to ensure capacity is maintained; and • Surface water management infrastructure as required.
Windblown rubbish	Direct discharge/movement by surface water following rainfall	Soil and fauna. No native vegetation is adjacent to the landfill.	<ul style="list-style-type: none"> • No additional controls specified • Existing controls include; <ul style="list-style-type: none"> ○ fencing around the landfills within the waste rock landforms ○ use of signage around landfills ○ landfill trench tip faces to not exceed 30 m in length. • Landfill is within a waste rock landform and surrounded by cleared and heavily disturbed areas.
Poorly treated effluent	Irrigation from WWTP	Soil and vegetation adjacent to the discharge area	<ul style="list-style-type: none"> • No additional controls specified

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 8 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 8: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
Residential Premise, Woollibar station homestead	15 km east of premises
Environmental receptors	Distance from prescribed activity

Parks and Wildlife Managed Lands and Waters	<ul style="list-style-type: none"> • “Class C” Yallari Timber Reserve, 2.3km southwest of the Premises (Native Vegetation Solutions 2016). • Karamindie State Forest, 6km northwest of Premises • Kambalda Nature Reserve, 5km southeast of Premises
Underlying groundwater (non-potable purposes)	<p>The palaeochannel tributary passing through the pit is hypersaline with a TDS of between 32,000 and 40,000 mg/L and pH of 6.4 (PSM 2016) and therefore is not considered of environmental value.</p> <p>Groundwater samples taken from pegmatite intrusive stratigraphy at the Project (2 km east of Ghost Crab Pit) recorded low salinity water (TDS 4,500 – 5,200 mg/L and alkaline pH (7.9 – 8.3) (PSM 2016).</p> <p>Both groundwater sources are used for the purposes of mining or industrial applications. Adjacent towns are serviced by scheme water (PSM 2016).</p>
TECs/PECs	<p>The 2016 survey recorded a listed Priority 3 flora species under the <i>Wildlife Conservation Act 1950</i>, <i>Diocirea acutifolia</i>. It was recorded at 28 locations in the survey area. This species is widespread and in large numbers in the local and regional area (Native Vegetation Solutions 2016).</p> <p>A 2009 survey recorded 3 x Priority 3 flora species (<i>Diocirea acutifolia</i>, <i>Austrostipa blackii</i> and <i>Allocasuarina eriochlamys subsp grossa</i>) within the Premises (Recon Environment 2009 in DER 2010).</p> <p>Malleefowl (<i>Leipoa ocellata</i>) habitat is present within the boundaries of the Prescribed Premises. A survey in 2010 identified two extinct malleefowl mounds within the Premises boundary (DER 2016). Malleefowl is listed as vulnerable under the EPBC Act and is on schedule 1 of the <i>Wildlife Conservation Act 1950</i>, that is, fauna that is rare or is likely to become extinct.</p> <p>A condition has been added to the Clearing Permit CPS#6770/2 to require a fauna survey for Malleefowl and additional approval prior to clearing of its habitat.</p>

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and considers 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 9.

The Revised Licence L9037 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. screening of material and landfill activities.

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

Table 9: Risk assessment of potential emissions and discharges from the Premises during construction, commissioning, and operation

Risk Event					Risk rating ¹ C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions ² of Licence	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
Construction								
Placement of screen and associated equipment including vehicle movements (reversing beepers). Placement of WWTP.	Dust	Air/windborne pathway causing impacts to health and amenity	No nearby receptors	Refer to Section 3.1.1	C = Slight L = Unlikely Low Risk	Y	N/A	Minimal dust is expected to be generated during construction and installation of the new WWTP, crushing and screening infrastructure and the distance to residential receptors mean dust impacts from construction activities are unlikely to occur.
	Noise			Refer to Section 3.1.1	C = Slight L = Unlikely Low Risk	Y	N/A	The distance to residential receptors is too great for noise impacts from construction activities to occur. It is considered that a pathway for noise emissions to residential receptors does not exist. The provisions of the <i>Environmental Protection (Noise) Regulations 1997</i> are applicable.
Operation								
Screening, crushing, unloading, loading and storage of material Vehicle movements	Dust	Air/windborne pathway causing impacts to health and amenity	Adjacent vegetation	Refer to Section 3.1.1	C = Slight L = Unlikely Low Risk	Y	Condition 2 and 6	The inclusion of Category 12 activities on the premises is not expected to produce a significant change in dust emissions, compared with the Category 5 processing capacity that has already been assessed and approved under Licence L9037/2017/1. Existing dust control measures have been included for Category 12 activity on 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				
	Hydrocarbon (e.g., hydraulic oil or diesel) and chemicals	Infiltration to groundwater via soil.	Groundwater	Refer to Section 3.1.1	C = Slight L = Unlikely Low Risk	Y	N/A	Storage and handling requirements of bulk fuel (diesel and LPG) managed under the <i>Dangerous Goods Safety Act 1994</i> , and regulations administered by the Department of Mines, Industry Regulation and Safety.
	Noise	Air/wind dispersion. Impact to health and amenity.	No nearby receptors	Refer to Section 3.1.1	C = Slight L = Unlikely Low Risk	Y	N/A	The distance to residential receptors is considered too great for noise impacts from operational activities to occur. It is considered that a pathway for noise emissions to residential receptors does not exist. The provisions of the <i>Environmental Protection (Noise) Regulations 1997</i> are applicable.
	Sediment laden stormwater	Overland runoff. Impacts to TEC/native vegetation health.	Priority 3 flora species on the premises.	Refer to Section 3.1.1	C = Minor L = Unlikely Medium Risk	Y	Condition 1, 2	The Delegated Officer considers the existing Licence conditions to be adequate in managing sediment laden stormwater as an emission. The controls should ensure that the risk of sediment laden stormwater being created is low.
Category 64 Operation of Class II (putrescible) Landfill	Leachate	Seepage through soil	Groundwater	Refer to Section 3.1.1	C = Slight L = Unlikely Low Risk	Y	N/A	Previous assessments have not considered groundwater as a receptor given its hyper-salinity.
	Smoke	Air/wind dispersion.	No residences in proximity.	Refer to Section 3.1.1	C = Slight L = Unlikely Low Risk	Y	N/A	The distance to residential receptors is too great for air emission impacts from landfill activities to occur. It is considered that a pathway for landfill air emission to residential receptors does not exist.

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				
	Windblown waste	Direct discharge/movement by surface water following rainfall	Soil and fauna. No native vegetation is adjacent to the landfill; landfill is within a waste rock landform and surrounded by cleared areas.	Refer to Section 3.1.1	C = Slight L = Unlikely Low Risk	N	Condition 6 , 12 and 13	With the expansion of the waste dump boundary, the Delegated Officer considers the existing Licence conditions are not adequate to manage windblown rubbish as an emission. The Delegated Officer has added conditions related to the number of active landfills, plus landfill size, landfill location and operational requirement to the Licence.
Category 85 Operation of sewage facility.	Irrigation of poorly treated effluent	Direct discharge leading to soil contamination causing poor native vegetation health or death; vigorous weed growth	Soil and vegetation adjacent to discharge area	Refer to Section 3.1.1	C = Likely L = Minor Medium Risk	Y	Condition 2, 3, 7, 14 and 19	Due to past performance of the WWTP, the monitoring conditions set in previous licence amendments continue to be appropriate to ensure the quality of the discharge meets licence limits.

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

Table 10: Consultation

Consultation method	Comments received	Department response
Local Government Authority advised of proposal 21 March 2022	N/A	N/A
Department of Mines, Industry Regulation and Safety (DMIRS) advised of proposal 21 March 2022	N/A	N/A
Licence Holder was provided with draft amendment on 29 June 2022	<p>The Licence Holder responded to the draft licence on 1 July 2022 and requested that the reference to the sprinklers for the mobile plant be removed. The Licence Holder stated that this is not a practical setup for mobile equipment and is not typically included. The dust will be managed via the shields and covers on the transfer points.</p> <p>The Licence Holder requested that the remainder of the review period be waived and asked for the Revised Licence to be issued as soon as possible.</p>	<p>The Delegated Officer accepts that this control was not specified by the Licence Holder and was added to the draft licence in error.</p> <p>The Delegated Officer believes the Licence Holder controls and existing dust control measures will be sufficient to manage dust emissions from Category 12 activity on the premises.</p>

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 11 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 11: Summary of Licence amendments

Condition no.	Proposed amendments
Cover page	Update Date of Amendment
Cover page	Add Category 12: Crushing and screening
Table 2: Authorised Emissions	Changes to cross referencing
Table 3: Infrastructure and construction requirements	<p>Added infrastructure and equipment related to WWTP and mobile screening plant.</p> <p>Removed completed/constructed infrastructure and equipment</p>

	(effluent discharge pipeline, WWTP irrigation spray field, dewatering)
Table 5: Infrastructure and equipment controls table	Added infrastructure and equipment related to mobile screening plant, and controls relating to landfill trenches.
Condition 21. Specified Actions	Delete completed condition, refer to section 2.2.8
Schedule 1: Maps	Add in new Figure 1: Prescribed Premises Boundary, Figure 2: Site layout Update Figure 3: Location of landfills Update cross-referencing to maps throughout licence
Schedule 2: Primary Activities Table 8: Primary Activity	Added Category 12: Screening of material; 100,000 tonnes per annum Change Category 64: Class II putrescible landfill from 1,250 tonnes to 2,000 tonnes per annum Change Category 85: Sewage facility capacity from 70 m ³ /day to 90 m ³ /day
Schedule 2: Primary Activities Table 9: Infrastructure and equipment	Update infrastructure and equipment related to crusher and beneficiation plants Remove the reference to conveyor numbers (CV1 to CV11)
Schedule 2: Primary Activities Table 9: Infrastructure and equipment	Add in Mobile Screening Plant
Schedule 2: Primary Activities Table 9: Infrastructure and equipment	Change the number of bulk fuel storage tanks
Schedule 2: Primary Activities Table 9: Infrastructure and equipment	Update infrastructure and equipment related to WWTP comprising a Submerged Aerated Filter. Add in WWTP comprising a Sequence Batch Reactor Added size of WWTP irrigation spray field
Schedule 2: Primary Activities Table 9: Infrastructure and equipment	Remove accommodation camp capacity.

References

1. Process Minerals International Ltd (2021), *Application form: Mount Marion Lithium Project licence amendment application*, Applecross WA
2. Mineral Resources Limited (2021), *Mount Marion Lithium Project supporting document ENV-TS-RP-0344*, Applecross WA
3. Mineral Resources Limited (2022), RE: L9037/2017/1 Amendment to licence – Query from DWER, Applecross WA
4. Tristar Water Solutions Pty Ltd (2022), *Quotation for the design, supply, installation & commissioning of a staged 80 (200EP) Wastewater Treatment Plant incl associated ancillary equipment Q4359*, O'Connor WA
5. Process Minerals International Ltd (2022), *Licence 9037/2017/1: 2021 Annual compliance report*, Applecross WA
6. Process Minerals International Ltd (2021), *Licence 9037/2017/1: 2020 Annual compliance report*, Applecross WA
7. Golder Associates Pty Ltd (2018), *Mount Marion Lithium Mine - LoM Dewatering Concept Study*, West Perth WA
8. Pells Sullivan Meynink (PSM) 2016, *Mt Marion Lithium Project - PMP Geotechnical Assessment and slope design*, West Perth WA
9. Department of Water and Environmental Regulation (DWER) 2019, *Mt Marion Lithium Project – L9037/2017/1 – Specified action condition 21 A1845385*, Joondalup WA
10. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth WA
11. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Joondalup WA
12. DWER 2020, *Guideline: Risk Assessments*, Joondalup WA

Appendix 1: Application validation summary

SECTION 1: APPLICATION SUMMARY			
Application type			
Amendment to licence	<input checked="" type="checkbox"/>	Current licence number:	L9037/2017/1
		Relevant works approval number:	N/A <input checked="" type="checkbox"/>
Date application received	16 December 2021		
Applicant and Premises details			
Applicant name/s (full legal name/s)	Process Minerals International Pty Ltd		
Premises name	Mount Marion Lithium Project		
Premises location	Mining tenement M15/1000, M15/717 and on private land known as Hampton's Lease Area 53, portion of Lot 105 on Deposited Plan 40396, Volume 2668 Folio 420.		
Local Government Authority	Shire of Coolgardie		
Application documents			
HPCM file reference number:	DER2017/000308-1		
Key application documents (additional to application form):	Supporting document, 3B, 6A.		
Scope of application/assessment			
Summary of proposed activities or changes to existing operations.	<ul style="list-style-type: none"> • Change in Prescribed Premise boundary. • Change to the Category 64: Class II putrescible landfill • Change in Category 6: Dewatering location (prescribed premise) • Addition of Category 12: Screening of material, • Change in Table 9: Infrastructure and Equipment description, and • Removal of completed conditions. 		
Category number/s (activities that cause the premises to become prescribed premises)			
Table 1: Prescribed premises categories			
Prescribed premises category and description	Assessed production or design capacity	Proposed changes to the production or design capacity	
Category 5: Processing or beneficiation of metallic or non metallic ore	3,000,000 tonnes per year.	N/A	
Category 6: Dewatering	650,000 tonnes per year.	N/A	
Category 12: Screening of material	N/A	100,000 tonnes per year	
Category 57: Used tyre storage	1,000 tyres.	N/A	
Category 64: Class II putrescible landfill	1,250 tonnes per year.	2,000 tonnes per year.	
Category 73: Bulk storage of chemicals	480 kL LNG, 554 kL diesel.	N/A	
Category 85: Sewage facility, and	70m ³ / day.	90 m ³ /day	
Category 85B: Water desalination	730,000 tonnes per year.	N/A	
Legislative context and other approvals			

Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input type="checkbox"/>
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Ministerial statement No: EPA Report No:
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Reference No:
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Mining lease / tenement <input checked="" type="checkbox"/> Expiry: Reed Industrial Minerals Pty Ltd M15/717 expires: 18/09/2036 M15/1000 expires: 19/08/2030
Has the applicant obtained all relevant planning approvals?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Approval: 17 December 2019
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	CPS No: CPS 8632/1
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: N/A Licence/permit No: N/A
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Licence/permit No: 200665(3)
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: N/A
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: N/A
Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxx</i>)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<i>Mining Act 1978 and Mining Regulations 1981, Planning and Development Act 2005</i>
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises subject to any EPP requirements?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i> ?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Classification: Possibly contaminated – investigation required (PC-IR) Date of classification: 30/09/2021