



Application for Licence Amendment

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

Licence Number	L9375/2023/1
Licence Holder	OZ Minerals Musgrave Operations Pty Ltd
ACN	640 213 341
File Number	DER2023/000114
Premises	West Musgrave Project Mining tenement M 69/149. As defined by the coordinates in Schedule 1 of the Revised Licence
Date of Report	17 January 2025
Proposed Decision	Revised licence granted

Michael Greenslade Digitally signed by Michael Greenslade
Date: 2025.01.17 09:58:41 +08'00'

MANAGER, PROCESS INDUSTRIES

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

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1. Decision summary

Licence L9375/2023/1 is held by OZ Minerals Musgrave Operations Pty Ltd (Licence Holder) for the West Musgrave Project (WMP) (the premises), located at tenements M 69/149, L 69/56 and L 69/57 in the West Musgrave Ranges of Western Australia approximately 1,300 km north-east of Perth near the intersection of the borders between Western Australia, South Australia and the Northern Territory.

OZ Minerals Musgrave Operations Pty Ltd, was previously a subsidiary of OZ Minerals before OZ Minerals was acquired by BHP in May 2023.

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 L9375/2023/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

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

2.2 Application summary

On 2 October 2024, the Licence Holder submitted an application to the department to amend Licence L9375/2023/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Operation of the Expo Fuel Facility for the storage of diesel and filling of mobile equipment (as constructed under Works Approval W6579/2021/1).
- Operation of the Aviation Fuel Facility for the storage of Jet A1 fuel and filling of airplanes at the aerodrome (as constructed under Works Approval W6579/2021/1).
- Operation of the Accommodation Camp Power Station bulk diesel tank, Living Hub 1 and Living Hub 2 Power Stations bulk diesel tanks as dedicated fuel supplies to diesel power generators (as constructed under Works Approval W6579/2021/1).
- Operation of the solid waste storage and transfer station (WTS) for the temporary storage, segregation and transfer of wastes, including use of the pad for bioremediation purposes, prior to recycling or final disposal at appropriately licenced facilities (as constructed under Works Approval W6579/2021/1).
- Administrative change to conditions related to the existing Wastewater Treatment Plant (WWTP) infrastructure, approved under the existing licence L9375/2023/1, to remove ozone from the disinfection process.
- Administrative change to amend the definition of the annual reporting period and the dates for the submission of annual and biennial reports to allow for the coordination of annual reporting across BHP Western Australia Nickel operations.

This amendment is limited only to changes to Category 62, and 73 activities from the existing licence. No changes to the aspects of the existing licence relating to Category 12, 54, 64, and 77 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 or throughput capacity	Proposed design or throughput capacity	Description of proposed amendment
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.	<u>Existing:</u> 1,500,000 tonnes per year	No change	No change
Category 54: Sewage facility: premises (a) on which sewage is treated (excluding septic tanks); or (b) from which treated sewage is discharged onto land or into waters	<u>Existing:</u> 275 m ³ day	No change	No change
Category 62: Solid waste depot: premises on which waste is stored or sorted, pending final disposal or re-use	<u>Proposed:</u> 1,800 tonnes per annual period	This is a new category proposed to be added from works approval W6579 to the existing licence	Operation of Waste Transfer Station
Category 64: Class II or III putrescible landfill site	<u>Existing:</u> 2,300 tonnes per annual period.	No change	No change
Category 73: Bulk storage of chemicals etc. premises on which acids, alkalis or chemicals are stored:	<u>Proposed:</u> 8901 m ³ in aggregate	This is a new category proposed to be added from works approval W6579 to the existing licence	<p>Operation of Accommodation Power Stations Fuel Storage – three self-bunded 67 kL diesel tanks and associated distribution and refilling infrastructure, total capacity of 201 kL.</p> <p>Operation of Expo Fuel Facility – four 110 kL self-bunded diesel tanks and associated distribution and refilling infrastructure, total capacity 440 kL</p> <p>Operation of Aviation Fuel Facility – one 110 kL self-bunded Jet A1 tank and associated aeroplane refuelling and refilling infrastructure, total capacity 110 kL.</p>

Category 77: Concrete batching and cement products manufacturing: premises on which cement products or concrete are manufactured for use at places or premises other than those premises.	<u>Existing</u> 150,000 tonnes per year	No change	No change
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2.2.2 Proposed Category 62: Solid waste storage area

The applicant advises that some wastes will be stored at the premises' Waste Transfer Station (WTS) prior to either landfilling onsite or offsite removal. The Waste Transfer Station (WTS) was approved under the design, construction and installation requirements of works approval W6579/2021/1.

The solid waste transfer area is constructed over a covered and bunded concrete pad to prevent stormwater access.

The Waste Transfer Station Environmental Compliance Report was provided to DWER on 27 August 2024 and the department confirmed that it demonstrated that the construction of the WTS complies with the requirements of the works approval. The location of the WTS is indicated in Figure 1.

2.2.3 Proposed Category 73: Bulk storage of chemicals facility

Under works approval, the licence holder has constructed various Category 73: bulk storage of chemical facilities across the prescribed premises. All bulk fuel storage and handling infrastructure has been constructed in accordance with AS 1940, and:

- (a) is fitted with leak detection system and alarms.
- (b) is equipped with high level alarms to prevent overflow during operation, and
- (c) is designed to be able to transfer potentially contaminated stormwater within bunded areas to an oily water separator.

On completion of the construction of the facilities, Critical Containment Infrastructure Reports were submitted to the department as follows:

- Expo Fuel Facility Critical Containment Infrastructure Report (CCIR) provided to DWER on 29 July 2024.
- Aviation Fuel CCIR provided to DWER on 23 July 2024.
- Accommodation Power Stations Fuel Storage CCIR provided to DWER on 13 September 2024.

The department confirmed that the reports demonstrated that the relevant facilities had been constructed in general compliance with the conditions of the works approval. The only deviation noted was in respect of the aviation fuel facility where the filling area for the tank was provided with a drive-over sump, and the aircraft refueling area has a fuel-resistant membrane on the runway, instead of the sloped concrete and sump arrangement specified by the works approval. The department reviewed this deviation and determined that the implemented variation will achieve the same purpose and does not increase the risk to the environment.

2.2.4 Change to WWTP conditions related to ozone disinfection

The wastewater treatment plant (WWTP) was originally constructed and licenced to include a three-part disinfection process involving ozone, ultraviolet (UV) and chlorination disinfection of

treated water.

The system currently operates using UV and chlorine treatment only and consistently achieves results of *E. coli* <1 cfu (mg/L) which indicates that the additional ozone disinfection is unnecessary.

The Licence Holder considers that the use of ozone in the disinfection process presents a risk to human health arising from its toxicity, and considers that the removal of ozone disinfection from the WWTP process will not have any detrimental effect on the level of disinfection. The Licence Holder proposes to bypass and lock out the ozone disinfection circuit to reduce this health and safety risk. Monitoring of treated effluent will continue as conditioned within L9375/2023/1 and the Licence Holder will report on discharge parameters including *E.coli* (cfu/100 mL)

2.2.5 Administrative change to reporting requirement dates

As the West Musgrave Project has now transferred to BHP's Western Australia Nickel division, and to simplify statutory reporting requirements across operations in the division, the Licence Holder has requested that the definition for an 'annual period' be changed to align with all other BHP Western Australian Nickel reporting requirements.

In addition, the Licence Holder has requested that the submission date for the Annual Audit Compliance Report and biennial environment report be changed to align it with all other BHP Western Australian Nickel reporting requirements.

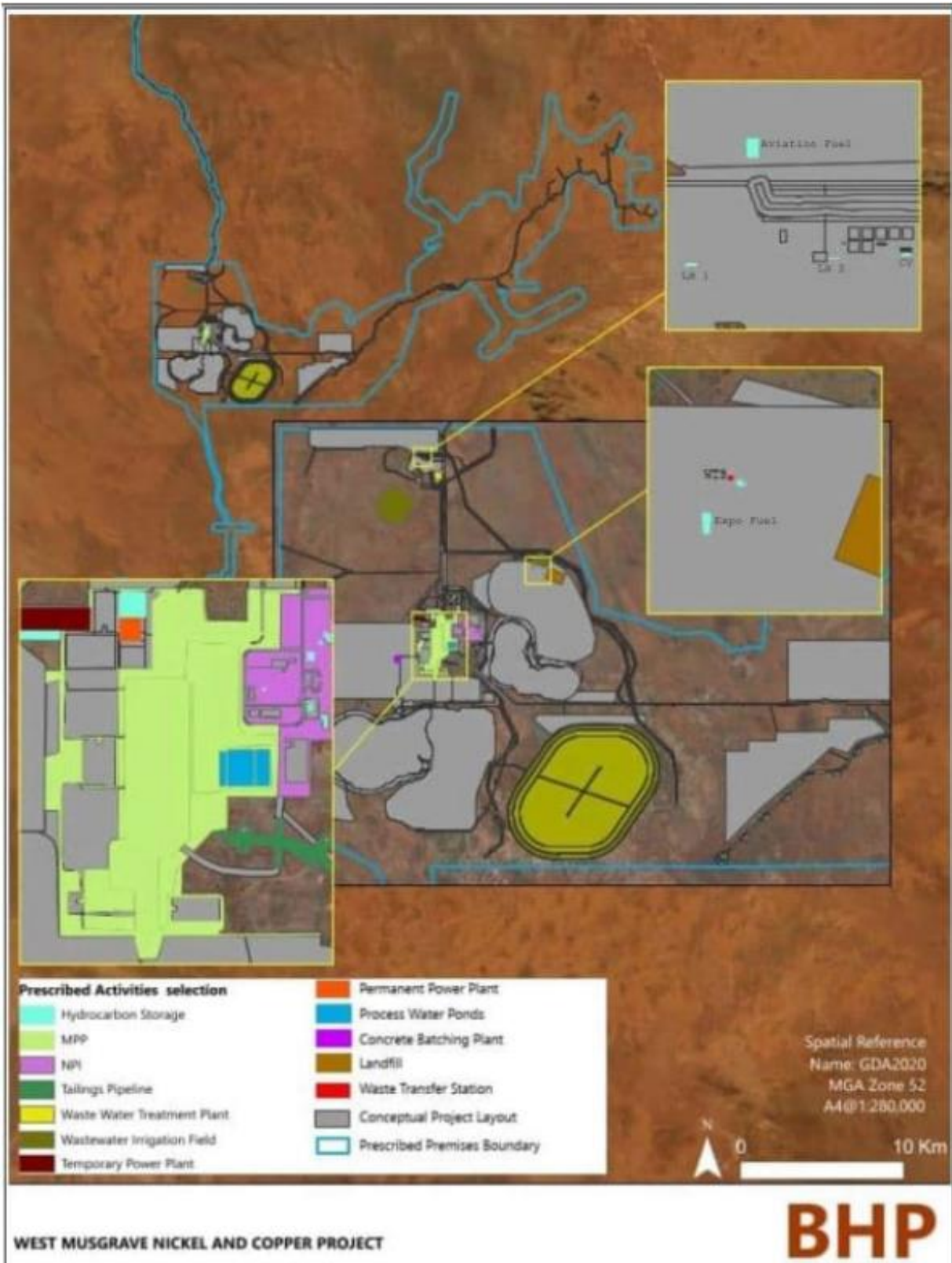


Figure 1: Map and layout of the prescribed premises

2.3 Part IV of the EP Act

The premises is subject to Ministerial Statement 1188 (MS 1188) Report 1720, issued on 20 April 2022, which specifies criteria for the construction and operation of a copper and nickel

mine, processing facility and supporting infrastructure and requires the implementation of the West Musgrave Copper and Nickel Project Groundwater Monitoring and Management Plan due to the potential for tailing storage facility (TSF) seepage impacts as a result of the project.

3. Risk assessment

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

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

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises operation which have been considered in this Amendment Report are detailed in Table 1 below. Table 1 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 1: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Spills and leaks of hazardous materials and hydrocarbons	Operation of Category 62: Waste transfer facility and Category 73: Bulk storage of chemical facilities	Overland runoff from site Seepage or infiltration causing groundwater contamination.	<ul style="list-style-type: none"> All liquid chemical reagents stored within tanks or silos in appropriately bunded facilities whereby 110% of the largest vessel and 25% of the total volume is contained according to Australian Standards. Refueling and fuel delivery inlets located on concrete or HDPE-lined pads to contain any drips or spills and draining to a sump to allow removal of collected material. Waste transfer station (WTS) designed with a concrete foundation graded to a sump to allow the collection of surface water run-off and spilled material.
Erosion and contaminated surface water runoff from operational areas	Uncontrolled stormwater runoff	Overland runoff from site	<ul style="list-style-type: none"> Surface water redirected around operational areas. Drainage infrastructure and/or surface water diversions constructed to ensure natural flow paths are maintained where possible. Covered WTS and hydrocarbon storage areas to prevent interaction with rain. Exit road from the hydrocarbon storage shed are concreted and regularly cleaned to prevent tracking of hydrocarbon materials.

3.1.2 Receptors

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

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

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

Human receptors	Distance from prescribed activity
Residential receptor – Jameson community (Mantamaru)	26 km north of the premises
Groundwater Bores	Jameson Bore – 29 km North Linton Bore – 17 km Southeast of premises
Environmental receptors	Distance from prescribed activity
Terrestrial fauna Threatened / Priority fauna	Priority fauna species in the project envelope Great Desert Skink (<i>Egernia kintorei</i>) listed as vulnerable
Native vegetation Threatened Ecological Communities (TEC) Priority Ecological Communities (PEC)	No threatened flora identified No TEC / PEC within 100 km of premises
Surface waters	No surface waters nearby
Groundwater	Depth to groundwater ranges from 2.7 to 14.5 metres below ground level (mbgl) – average 6.5 mbgl Gradients of 0.1% running north to south
Cultural receptors	Distance from prescribed activity
Heritage sites with artefacts, scatter, camp, plant and water resources	Registered place (ID 2888 – Pilypiriny) 4 km NNE

3.2 Risk ratings

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

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

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

The Revised Licence L9375/2023/1 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. Category 62: Solid waste depot, and Category 73: Bulk storage of chemical activities.

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

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

Risk Event					Risk rating ¹ C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions ² of licence	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
Operation								
Operation of Category 62: Waste transfer facility and Category 73: Bulk storage of chemical facilities	Spills and leaks of hazardous materials and hydrocarbons	<p>Pathway: Overland runoff from site Seepage or infiltration causing groundwater contamination.</p> <p>Impact: Causing adverse health impacts to downgradient native vegetation and local ecosystems. Toxicological impacts to groundwater dependent ecosystems.</p>	<p>Adjacent vegetation associations.</p> <p>Depth to groundwater approximately within 6.5 mbgl.</p> <p>No human groundwater users in the area.</p>	Refer to Section 3.1.1	C = Moderate L = Rare Medium Risk	Y	<p>Condition 1 - Infrastructure and equipment requirements</p> <p>Condition 2 - Emissions and discharges</p> <p>Condition 7 - Monitoring of groundwater during operation</p>	The Delegated Officer has determined that the proposed controls are critical for maintaining an acceptable level of risk during operations of the premises and has therefore conditioned these requirements within the licence.
	Erosion and contaminated surface water runoff from operational areas	<p>Pathway: Overland runoff from site</p> <p>Impact: Causing adverse health impacts to downgradient native vegetation and local ecosystems</p>	<p>Adjacent vegetation associations.</p>	Refer to Section 3.1.1	C = Minor L = Rare Low Risk	Y	<p>Condition 1 - Infrastructure and equipment requirements</p> <p>Condition 4 - Management of the discharge of treated wastewater</p>	<p>Activities are located away from defined waterways and stormwater flows and topography is gently undulating, minimising the stormwater velocities even during high rainfall events.</p> <p>Infrastructure has been constructed over bunded concrete pads to prevent stormwater access.</p> <p>The Delegated Officer has determined that risk can be acceptably managed based on controls implemented.</p>

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

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

4. Consultation

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

Table 4: Consultation

Consultation method	Comments received	Department response
Licence Holder was provided with draft amendment on 18 December 2024	The Licence Holder responded on 23 December 2024, with no comments and requested that the remainder of the comment period be waived.	Noted.

5. Conclusion

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

5.1 Summary of amendments

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

Table 5: Summary of licence amendments

Condition no.	Proposed amendments
Cover page	Update 'date of amendment' and include Category 62 and Category 73 to the licence.
Licence history	Update licence history table to include Category 62 solid waste depot and Category 73 bulk storage of chemicals, administrative change to conditions related to the existing Wastewater Treatment Plant (WWTP) infrastructure to remove ozone from the disinfection process, and an administrative change to amend the definition of the annual reporting period and the dates for the submission of annual and biennial reports.
Condition 1, Table 1 Infrastructure and equipment requirements Item 1	Remove ozone disinfection system from operational requirements of the Passive Wastewater Treatment Plant (WWTP)
Condition 1, Table 1 Infrastructure and equipment requirements Item 5	Add 'solid waste storage and transfer station' operational requirements.
Condition 1, Table 1 Infrastructure and equipment requirements Item 6	Add general 'fuel storage and delivery area' operational requirements.
Condition 1, Table 1 Infrastructure and equipment requirements Item 7 - 9	Add three line items for the Accommodation Power Stations Fuel Storage, Aviation Fuel Facility, and Expo Fuel Facility, along with operational requirements and location of each.

Condition 10 Records and reporting	Change submission date of the Annual Audit Compliance Report from “no later than 30 days after the end of that annual period” to 30 September.
Condition 11 Records and reporting	Change the submission date of the environmental report from “no later than 1 March in each year” to 30 September.
Definitions	Change the definition of ‘annual period’ from “commencing from 1 January until 31 December” to 1 July until 30 June of the immediately following year. Remove “ozone” from the definition of ‘tertiary treatment’
Schedule 1: Maps Figure 1: Map of the boundary of the prescribed premises	Update Figure 1 to show the location of hydrocarbon storage, waste transfer station and various fuel depot

6. References

1. BHP (on behalf of OZ Minerals Musgrave Operations Pty Ltd) 2024, Application form and supporting document, “*West Musgrave Copper and Nickel Project Licence Amendment Application – Bulk Fuel Storage and Waste Transfer Station, September 2024*”, Melbourne, Victoria.
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
4. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.