Government of Western Australia
Department of Water and Environmental Regulation

Amendment Report

Application for Licence Amendment

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

Licence Number	L8621/2011/1
Licence Holder	Roy Hill Iron Ore Pty Ltd
ACN	123 722 038
File Number	2011/009784-1
Premises	Roy Hill Iron Ore Mine M46/518, M46/519, L47/772, L47/851 and Part of L47/346 and L47/642 NEWMAN WA 6753 As defined by the Premises maps attached to the Revised Licence
Date of Report	6/06/2024
Decision	Revised licence granted

Jarrod Abrahams
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MANAGER, RESOURCE INDUSTRIES
an officer delegated under section 20 of
the *Environmental Protection Act 1986* (WA)

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1. Decision summary

Licence L8621/2011/1 (Licence) is held by Roy Hill Iron Ore Pty Ltd (Licence Holder) for the Roy Hill Iron Ore Mine (the Premises), located approximately 60 km south of Nullagine within mining tenements M46/518 and M46/519.

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 L8621/2011/1 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 21 December 2023, the Licence Holder submitted an application (Roy Hill 2023) to the department to amend the Licence under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The application seeks the following changes to the Licence.

Category 5 increased throughput

The Licence Holder proposes to increase the quantity of ore processed at the Premises from the current 86 million tonnes per annum (Mtpa) to 102 Mtpa. The proposed increase is achieved by additional feed stock at the existing Mine Processing Plant (MPP) and Direct Shipping Ore (DSO) Plant 1, and the installation and operation of an additional DSO Plant 2, DSO Arrangement 1, and DSO Arrangement 2.

Existing infrastructure

- **Mine Processing Plant (MPP)**

An increase in throughput at the MPP is achieved through the availability of additional feedstock from the recent completion of an additional crusher at the Premises (Crusher 5 at the Run of Mine (ROM)). The throughput will increase from the current 86 Mtpa up to 90 Mtpa. No construction works will be required to achieve the increased processing rates. Existing controls remain in place to manage dust and contaminated/sediment laden stormwater.

- **Direct Shipping Ore (DSO) Plant 1**

The Licence Holder also proposes to increase ore feed at the existing DSO Plant 1 from 4.5 Mtpa to 5 Mtpa. The increase in ore processing will not require construction or installation of any new equipment. Existing dust and stormwater management controls remaining in place.

The DSO Plant 1 is located as shown in Figure 1 below however, the Licence Holder proposes to potentially redeploy the infrastructure to alternative locations at the Premises as shown in the revised Relocation Extent in Figure 3.

New infrastructure

- **Direct Shipping Ore (DSO) Plant 2**

  The Licence Holder proposes to construct a facility for the crushing and screening of up to 5 Mtpa of iron ore with the final product transferred by trucks to the MPP area where it will

be blended with other iron ore product stockpiles ready for transport off the Premises.

DSO Plant 2 will be powered by two 800 kVA diesel generators with an additional 800 kVA in reserve and will consist of a Primary Jaw Crusher, ROM Bin, Vibrating Grizzly Feeder, Bypass chute and conveyors. The facility will operate for 24 hours per day, 7 days a week, as required.

Dust emissions at the plant will be managed using water sprays, chutes, dust covers and curtains, skirts, scrapers, wind guards and dust collectors located at strategic locations. Water sprayers or water carts will be used to control dust at feedstock and product stockpiles.

The Licence Holder has stated the infrastructure will be located within mine pits or immediately adjacent to mine pit areas and will not be located within 50 m of any surface water bodies. Existing surface water flows will be diverted away from the infrastructure areas.

The facility will initially be located as shown in Figures 1 and 2 below, however may be redeployed to alternative locations at the Premises as shown in the revised Relocation Extent in Figure 3.

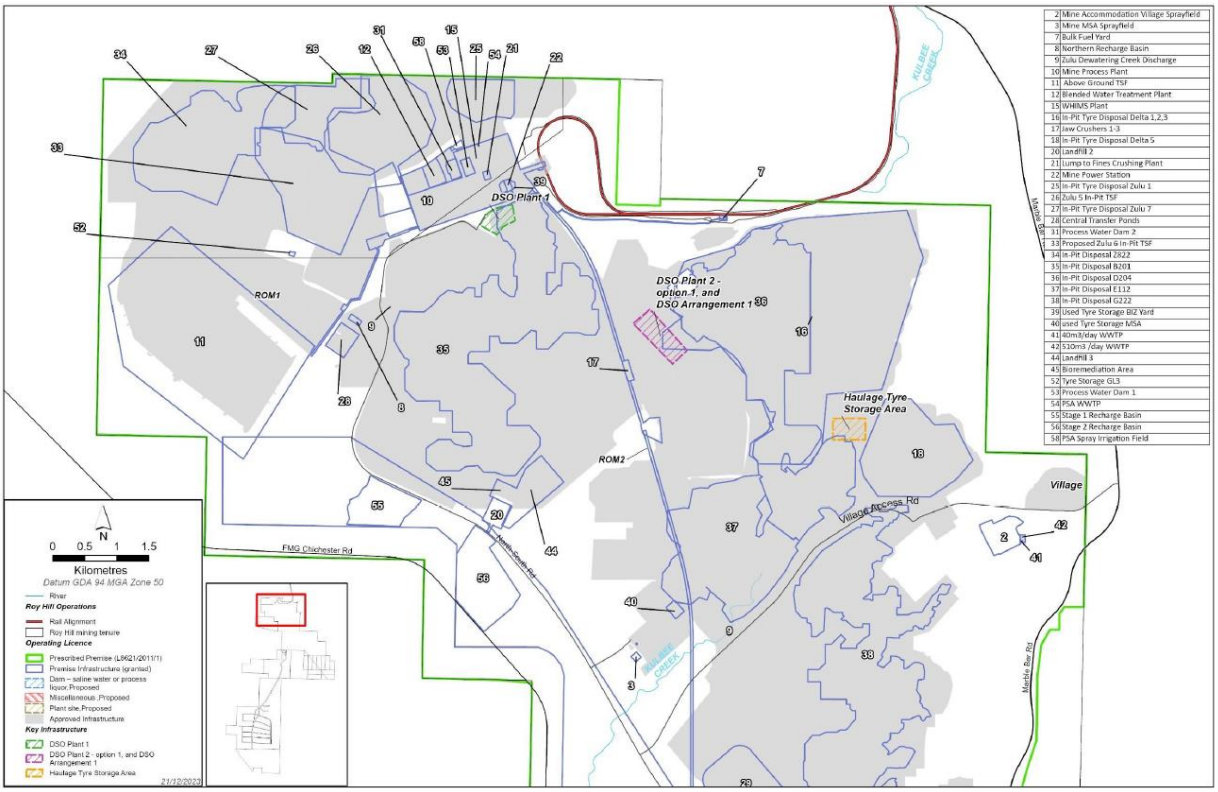

Figure 1: Infrastructure locations (Part A)

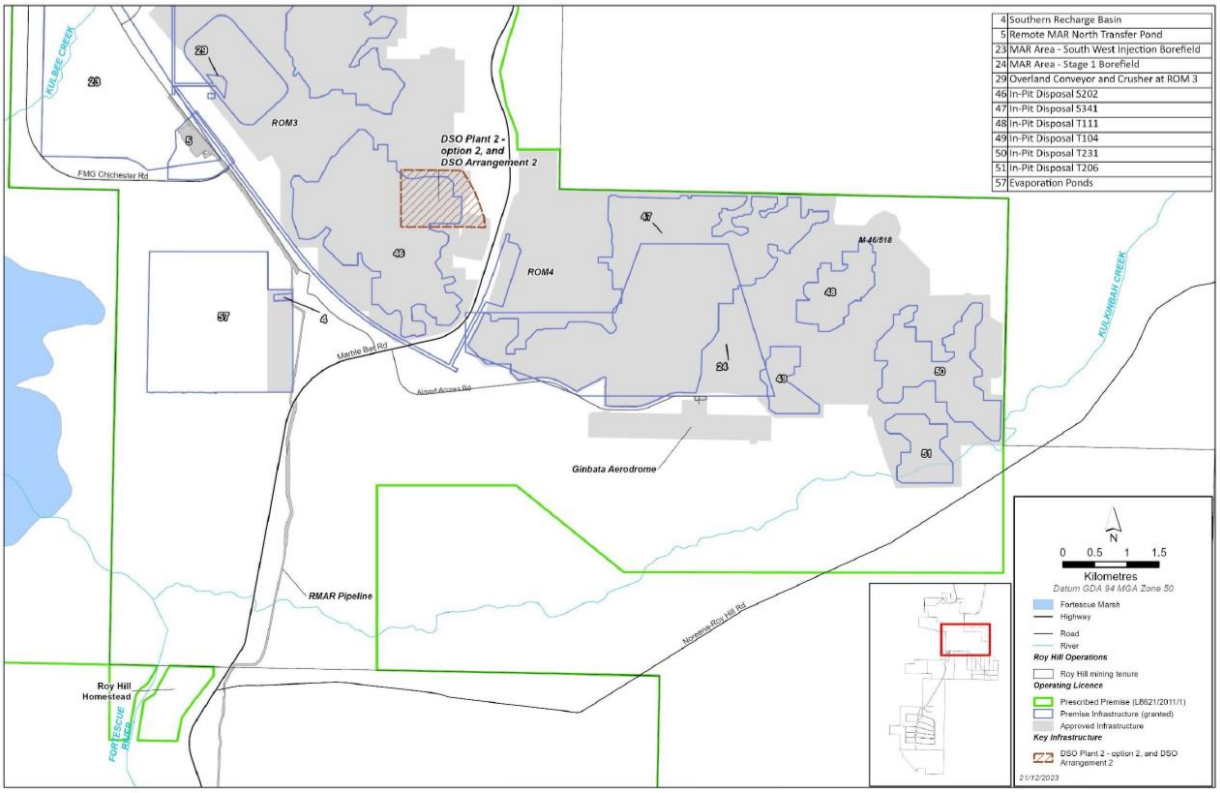

Figure 2: Infrastructure locations (Part B)

Direct Shipping Ore (DSO) Arrangement 1 and 2

DSO Arrangements 1 and 2 consist of multiple pieces of mobile equipment which include jaw and cone crushers, screener/grids and conveyors. The purpose for multiple pieces of mobile equipment is to allow flexibility in processing mined ore in relatively small areas, and to minimise mobilisation and installation requirements. The DSO Arrangements, like the DSO Plant 2, will initially be located as shown in Figures 1 and 2 below, however will be redeployed as required to alternative locations at the Premises as shown in the revised Relocation Extent in Figure 3.

The DSO Arrangements are smaller than the larger more static DSO Plant 1 and Plant 2 mentioned above, however, they undertake the same types of activities (i.e. crushing and screening) just on a smaller scale. The screened materials will be transferred via haul trucks to the MPP area where it will be blended into the ore product stockpiles ready for transport off the Premises.

Each DSO Arrangement will process up to 3 Mtpa and will be powered by two 25 kVA generators and two 150 kVA generators.

Dust emissions will be minimised by water sprays and chutes fitted at transfer points and the use of water sprays on conveyors. A water cart will be used to manage dust from stockpiles and may also be used to wet down preloading materials.

The Licence Holder has stated the infrastructure will be located within mine pits or immediately adjacent to mine pit areas and will not be located within 50 m of any surface water bodies. Existing surface water flows will be diverted away from the infrastructure areas.

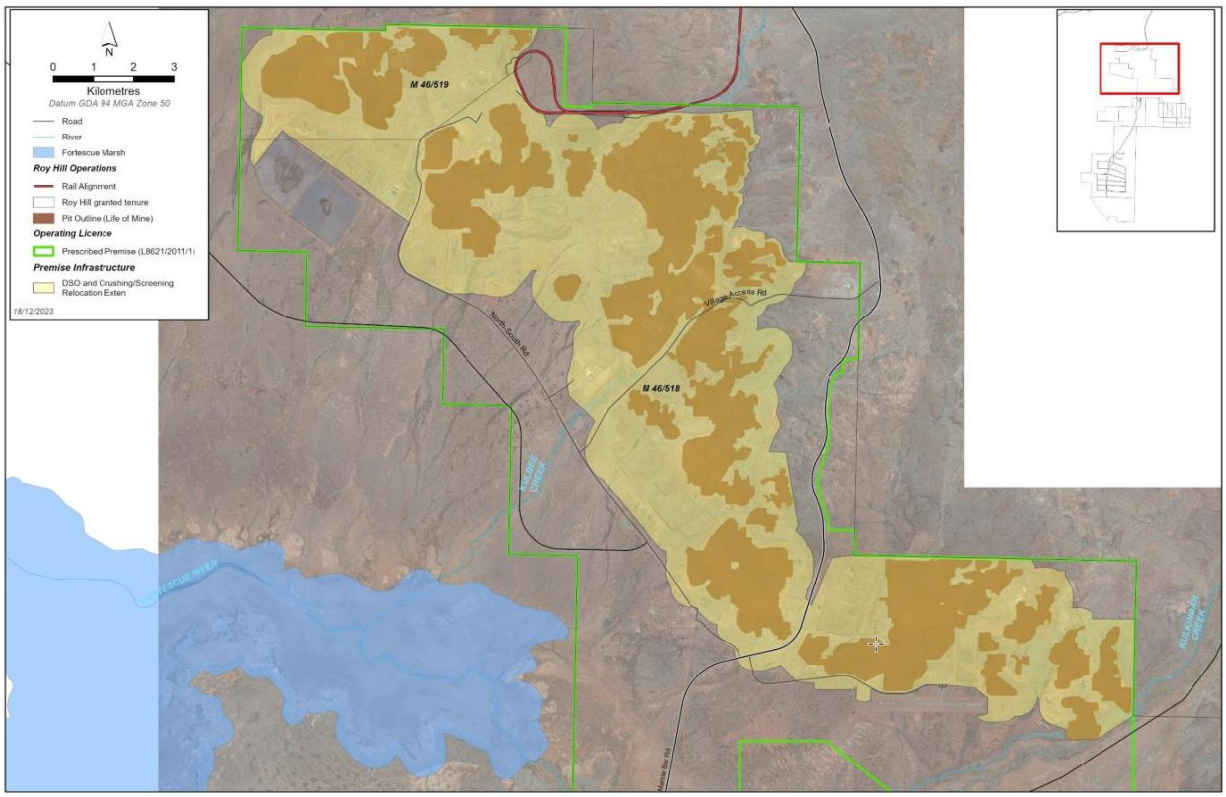

Figure 3: Proposed Relocation Extent of DSO Plant 1 and 2; DSO Arrangement 1 and 2; Crushing/Screening Plant

Category 12 proposed changes

The Licence Holder has proposed to change the scope of Category 12 operations at the Premises. The current Licence limit for Category 12 is up to 6.57 Mtpa which was originally based upon the use of mobile crushing and screening plants with capacities of 150 to 200 tonnes per hour (tph) and a 300 tph Stemming Plant. The infrastructure was used for the construction phase at the Premises with crushing and screening plants being located at ten indicative locations and the Stemming Plant located within mined pits.

The Licence Holder now proposes to use mobile crushing and screening infrastructure with capacities of up to 500 tph in locations shown in Figure 3 above to allow flexibility to suit operational needs. The infrastructure will be located within mine pits or immediately adjacent to mine pit areas and will not be located within 50 m of any surface water bodies. The Licence Holder has not requested a change to the Category 12 throughput of up to 6.57 Mtpa.

The Licence Holder proposes to use a water cart to manage dust emissions from stockpiles and also to wet down preloading materials. Hydrocarbons will be managed in accordance with *AS/NZ1940:2004 The Storage and Handling of Flammable and Combustible Liquids*.

Category 57 increase

The Licence Holder proposes to increase the Category 57 Licence limit by an additional 2,000 used tyres to allow a total storage of 8,000 used tyres at the Premises. The increased storage capacity is required to service a new proposed haulage workshop and to facilitate an increase in the number of used tyres stored at existing tyre storage areas (see Figure 1 above).

The used tyres will be stored in accordance with existing requirements in the Licence which includes storage of the used tyres in units not exceeding 100 tyres and each unit separated by at least 6 m.

Other amendments

No Name Creek – change to monitoring locations

Discharge of water stored in the Process Water Dam to No Name Creek (NNC) is regulated through conditions in the Licence. One of the Licence requirements is the routine monitoring of established photo points at 150 m and 300 m downstream of the NNC discharge point to determine vegetation and ecosystem health. Recent construction of hydraulic diversions at NNC has resulted in the removal of all riparian vegetation (receptor) at the monitoring locations. The hydraulic diversions were assessed by the Environmental Protection Authority (EPA) and the Department of Climate Change, Energy, Environment and Water (DCCEEW) with Ministerial Statement 1189 (MS1189) and EPBC 2018/8330 granted respectively.

As a result of these changes the Licence Holder proposes to move the current licence photo points to the 'NNC Wetting End' photo point and the 'NNC Discharge Vegetation' photo point as shown Figure 4 below. The NNC Wetting End is the location previously recorded as the maximum extent of the wetting front while the NNC Discharge Vegetation location is where the NNC Diversion ends and returns to undisturbed riparian vegetation (receptor).

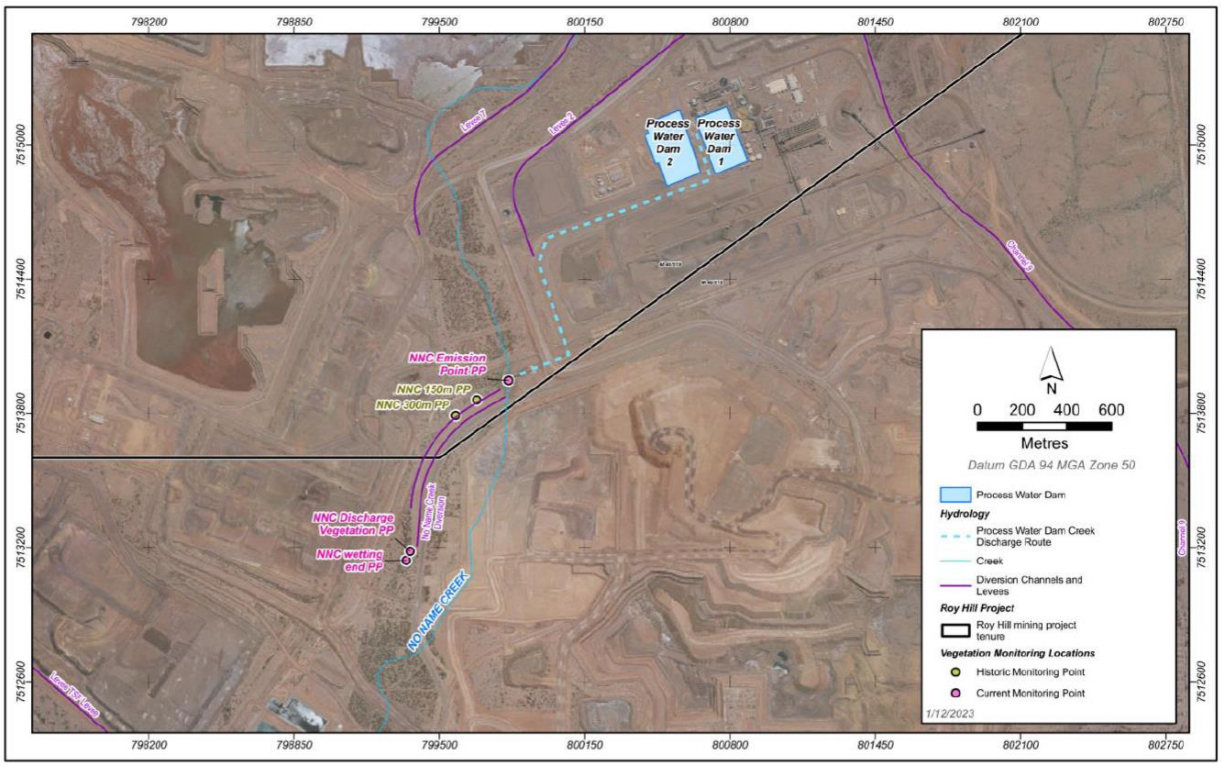

Figure 4: No Name Creek Discharge and Proposed Photo Monitoring Points

Additional dust suppression water sources

The Licence Holder proposes to include additional water sources for dust suppression use at the Premises and set a limit of 15 mg/L for Total Recoverable Hydrocarbons (TRH) levels in the dust suppression water. The additional water sources will include collected wastewater from the MSA workshop, LV/HV washdowns, HV washdowns and Haulage Workshop. The wastewater will pass through an Oily Water Separation (OWS) system prior to use for dust suppression at the MSA Turkeys Nest B Standpipe, MSA Turkeys Nest C Standpipe, and Haulage Turkey Nest areas as shown in Figure 5 below.

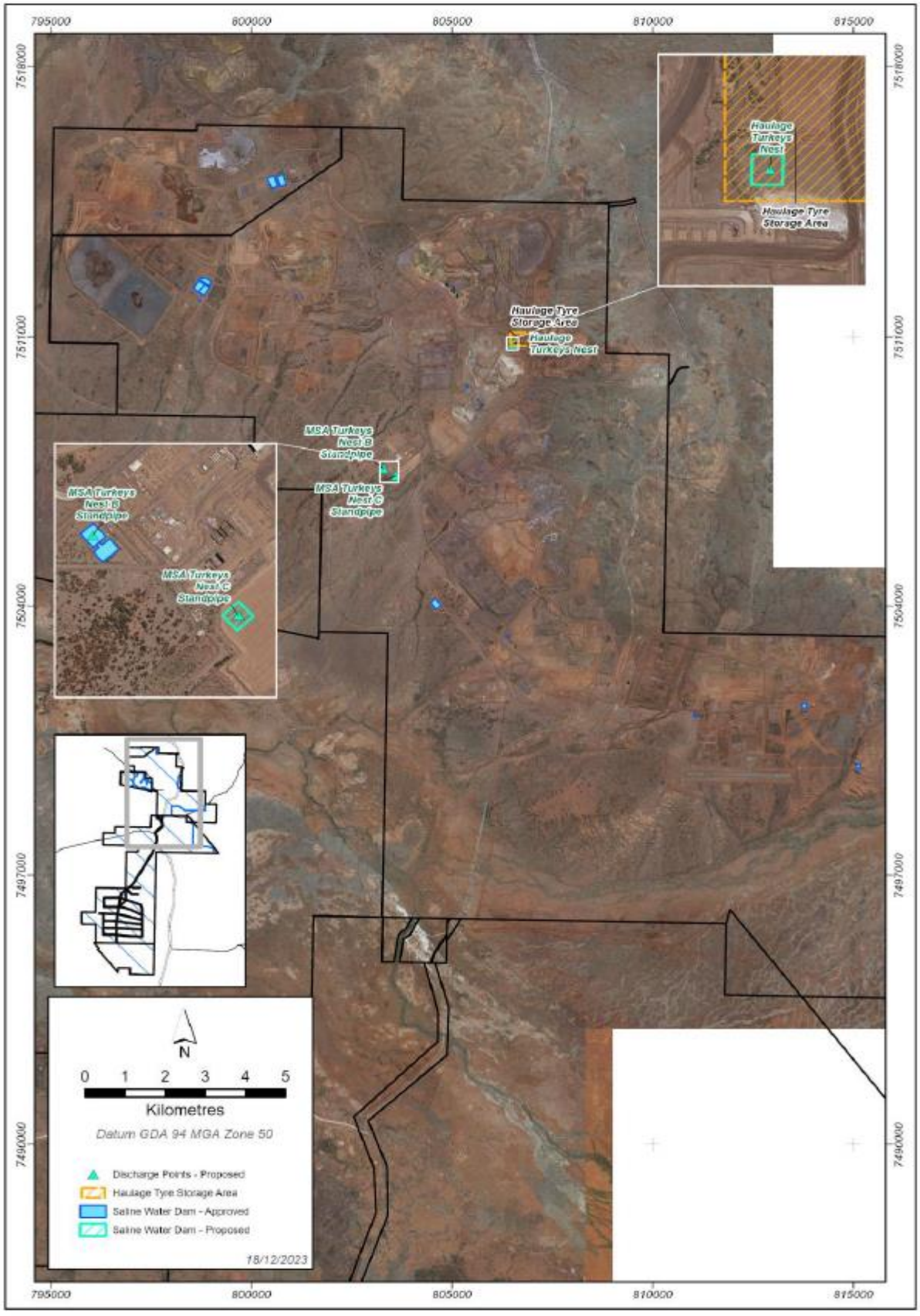

Figure 5: Additional dust suppression storage

The discharge of excess TSF decant water for dust suppression at the Premises is already an authorised discharge to land under the licence. No other regulatory controls are applied under

the Licence as MS1189 and EPBC 2028/8330 regulate the use of excess water for dust suppression at the Premises, with conditions applied to manage impacts to the environment by setting a Total Dissolved Solids (TDS) limit of 50,000 mg/L and the use of no more than 7.4 Gigalitres (GL). Monitoring and reporting requirements are also regulated under MS1189 and EPBC 2028/8330 (see Sections 2.3 and 2.4 below).

The Licence Holder has requested a limit of 15 mg/L for TRH in dust suppression water used at the discharge points shown in Figure 5 above is applied to the Licence. A limit for TRH in dust suppression water is not applied to conditions under MS1189 and EPBC 2028/8330. The Licence Holder has proposed a TRH limit of 15 mg/L to coincide with the limit set for TRH in oily water discharge at the Bulk Fuel Yard and Power Station.

Update to managed aquifer recharge bore list

The reinjection of excess water at the Premises is identified in the Licence as an authorised discharge point to groundwater with the coordinates presented for each individual reinjection bore. The regulation of this discharge (i.e. monitoring, setting limits and reporting) is managed through conditions under MS1189 and EPBC 2028/8330 (see Sections 2.3 and 2.4 below). The Licence Holder has advised the Geocentric Datum for Australia has been updated resulting in some coordinates in the Licence being incorrect which will now need updating. This proposed change to the Licence is administrative only with no changes occurring to the current reinjection bores in place at the Premises and therefore the Delegated Officer considers a risk assessment is not required.

2.3 Part IV of the EP Act

MS 1189

The Roy Hill Iron Ore Mine revised proposal was assessed by the Environmental Protection Authority (EPA) and approved under MS 1189 on 19 May 2022. MS1189 is subject to conditions under the EP Act with the following conditions shown below being relevant to this amendment under Part V of the EP Act.

Condition 1 – Revised Proposal Implementation

Condition 1-1: When implementing the revised proposal, the proponent shall ensure the proposal does not exceed the following extent:

- Excess water used for dust suppression of no more than 7.4 GL in total and up to 50,000 mg/L total dissolved solids (TDS).

Condition 2

Condition 2 relates to Inland Water and Subterranean Fauna, with Condition 2-1 requiring the proponent to avoid impacts to the Fortescue Marsh and to vegetation outside the disturbance footprint by ensuring the following outcome is met:

(1) no indirect disturbance to vegetation outside the disturbance footprint regardless of whether the outcomes of conditions 2-1(2), 2-1(3), 2-1(4), 2-1(5), 2-1(6) and 2-1(7) are met.

Condition 7

Condition relates to Terrestrial Fauna – Ghost Bat, with Condition 7-1 requiring no adverse impact to the structural integrity or viability of the ghost bat cave.

Condition 11

Condition 11 relates to Social Surroundings – Cultural Heritage Management Plan, with Condition 11-1 requiring the revised proposal to meet the following objectives:

(1) avoid, where possible, and minimise direct and project attributable indirect impacts to

social, cultural, heritage, and archaeological values within and surrounding the development envelope.

Condition 11-3 requires a Cultural Heritage Management Plan to be implemented which was developed in consultation with the Nyiyaparli People registered native title body corporate.

Requirements of MS 1189 are not re-assessed in this Amendment Report and will not be duplicated as conditions in the existing licence.

2.4 Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)

Under sections 130(1) and 133(1) of the EPBC Act the Licence Holder was given approval by the Department of Climate Change, Energy, the Environment and Water (DCCEEW) to expand the Roy Hill Iron Ore Mine (EPBC 2018/8330, 5 August 2022). The EPBC approval included amending mine pit boundaries, additional waste rock landforms and stockpiles, borefields for dewatering and water supply as well as re-injection bores, evaporation ponds, additional surface water structures, and additional supporting infrastructure.

Key environmental values identified are the Fortescue Marsh, Fortescue River and its tributaries; Sheet-flow dependent vegetation; Surface water dependent (riparian) vegetation; and Groundwater Dependant Vegetation (GDV) including Priority Ecological Communities, Terrestrial Fauna Habitats, Stygofauna; Troglofauna.

The EPBC approval is subject to conditions under the EPBC Act with the following conditions shown below being relevant to this amendment under Part V of the EP Act.

Condition 6

To minimise impacts to protected matters, the Fortescue March, Fortescue River and Kulkinbah Creek from the use of TSF decant water for dust suppression within and surrounding the development envelope, the EPBC approval holder must:

(a) Use no more than 7.4 gigalitres in total with up to 50,000 mg/L Total Dissolved Solids (TDS) for dust suppression for the life of the EPBC approval; and

(b) Ensure no TSF decant water and dust suppression water is applied outside the mine area.

Condition 7

To minimise impacts to protected matter habitats within and outside the development envelope from changes to groundwater and surface water, the EPBC approval holder must not commence the action until the Roy Hill Iron Ore Water Management Plan (WMP) is approved by the Minister in writing. The approved WMP must be implemented to meet the following objectives:

(a) Not allow changes to groundwater recharge, surface water flows and water quality from action undertaken within the development envelope to result in impacts to the Fortescue Marsh and the habitats outside the development envelope.

Condition 13

If the approval holder exceeds any threshold criterion specified within the WMP and/or VMP, the approval holder must:

(b) Notify DCCEEW when reporting on any exceedance event in the same timeframes as required by Condition 2-7 of MS1189. The reporting must include an assessment of any impact(s) to protected matters and habitats arising from the exceedance event, including evidence that the objectives in Condition 7 of this EPBC approval continue to be met;

(c) Within 6 months of any exceedance of a threshold criterion, submit to DCCEEW for the Federal Minister's approval, a Remediation Plan reviewed by an independent suitably qualified person for any impact(s) to protected matters arising from the exceedance as detailed in the report required by Condition 2-7(5) of MS1189.

(d) If the Federal Minister determines that it's not possible to remediate the impact(s) on protected matter(s) as a result of the exceedance, then the approval holder must submit within 10 months an Offset Strategy which specifies how the impact(s) will be offset in accordance with the relevant offset policy.

The requirements of EPBC 2018/8330 are not re-assessed in this Amendment Report and will not be duplicated as conditions in the existing licence.

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

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
Construction/installation of the DSO Plant 2 and DSO Arrangement 1 and 2			
Dust	Vehicle movements, lift-off from cleared areas, construction activities, earthworks etc.	Air/windborne pathway	• Minimise the removal of vegetation. • Use of water carts on roads and construction areas. • Infrastructure located at least 50 m away from any surface water body.
Hydrocarbon and/or sediment contaminated stormwater	Run-off from cleared and construction areas	Overland run-off	• Divert surface water away from infrastructure. • Locate infrastructure within mine pits or immediately adjacent to mine pit areas. • Infrastructure located at least 50 m away from any surface water body. • All hydrocarbon storage and

Emission	Sources	Potential pathways	Proposed controls
			dispensing will be managed in accordance with AS 1940-2004. • Spills kits provided in vehicles and spills managed in accordance with the Spill Response Procedure (OP-PRO-00275).
Increased throughput at the existing Mine Process Plant and DSO Plant 1			
Dust	Increased processing of ore. Lift-off from additional feed and product stockpiles. Additional use of loading equipment on the ROM.	Air/windborne pathway	• Mainly a wet processing circuit (MPP only). • Maintain existing water sprays and chutes at transfer points. • Maintain existing water sprays, dust covers, dust curtains, skirts, scrapers, wind guards and dust collectors at conveyors. • Maintain existing water sprayers/water cannons and/or water carts used for wetting down stockpiles and loading area. • Infrastructure is located at least 50 m away from any surface water body.
Contaminated/sediment laden stormwater	Run-off from additional feed stock and product stockpiles. Increased vehicle movements on the ROM and load out area.	Overland run-off	• Maintain existing infrastructure to ensure uncontaminated surface water is diverted away from stockpile areas. • Maintain existing infrastructure to collect, store and treat contaminated/sediment laden stormwater. • Infrastructure located at least 50 m away from any surface water body.
Operation of new infrastructure - DSO Plant 2; DSO Arrangement 1 and 2; Crushing and Screening Plant			
Dust	Dust emissions from the crushing and screening of mined ore. Lift-off from feed stock and product	Air/windborne pathway	• Install water sprays and chutes at transfer points. • Install water sprays, dust covers, dust curtains, skirts, scrapers, wind guards and dust collectors at conveyors. • Install water sprayer/water

Emission	Sources	Potential pathways	Proposed controls
	stockpiles. Movement of loading equipment		cannons and/or use water carts for wetting down feed and product stockpiles. • Infrastructure to be located at least 50 m away from any surface water body.
Contaminated/sediment laden stormwater	Infrastructure areas, feed stock and product stockpiles.	Overland run-off	Divert surface water away from infrastructure. Locate infrastructure within mine pits or immediately adjacent to mine pit areas. Infrastructure located at least 50 m away from any surface water body. All hydrocarbon storage and dispensing will be managed in accordance with AS 1940-2004. Spill kits provided in vehicles and each generator location. Spills managed in accordance with the Roy Hill Spill Response Procedure
New haulage used tyre storage area – 2,000 tyres			
Contaminated water (fire suppression water)	Storage of used tyres	Overland run-off	Stored in units not exceeding 100 used tyres. Stacked on their side walls; or if stored on treads, secured with a device made of non-combustible material. Each unit of tyres separated by at least 6 m.
Dust	Movement of vehicles and plant at the storage area	Air/windborne pathway	Use of water carts on roads and laydown areas
Use of treated water for dust suppression			
Hydrocarbon contaminated water	Stored wastewater at MSA Turkeys Nest B and C and Haulage Turkey Nest	Direct discharge to land	Oily Water Separation (OWS) prior to use for dust suppression. Quarterly sampling to ensure TRH levels in stored water remains below 15 mg/L. Quick-break detergents only used in workshops and washdown areas.

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 and Figure 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 2020)).

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

Human receptors	**Distance from prescribed activity**
Nyiyaparli People – Traditional owners.	**Screened out.** **Managed under MS 1189:** **Refer to section 2.3 under Condition 11.**
Environmental receptors	**Distance from prescribed activity**
Riparian vegetation is recorded at No Name Creek, Kulbee Creek and Kulkinbah Creek.	Within the Premises boundary. No Name Creek within 300 m of the MPP Kulbee Creek (diversion) within 800 m of the Haulage Used Tyre Storage area and 400 m of the MSA Turkeys Nest C standpipe area.
Native vegetation and riparian vegetation outside the disturbance footprint (Premises boundary).	**Screened out.** **Managed under MS 1189.** **Refer to section 2.3 under Condition 2.** **and** **Managed under EPBC 2018/8330.** **Refer to section 2.4 under Condition 7.**
Fortescue River and Marsh (Fortescue River Valley) - listed as a Priority 1 Ecological Community (PEC), a wetland of national significance and proposed Ramsar Area.	**Screened out.** **Managed under MS 1189.** **Refer to section 2.3 under Condition 2.**
Premises is drained by several ephemeral creeks that generally flow in a south to south-westerly direction towards the Fortescue River and Fortescue Marsh. Kulbee Creek passes through the center of the Premises while the Kulkinbah Creek is located to the southeast and No Name Creek to the northwest. The Kulbee, Kulkinbah and No Name Creek catchments combined represent less than 0.5% of the Fortescue River Catchment. There are no permanent creeks, surface water pools or wetlands within the prescribed premise boundary	Within the Premises boundary. No Name Creek within 300 m of the MPP Kulbee Creek (diversion) within 800 m of the Haulage Used Tyre Storage area.
Two underlying aquifers are present, the superficial	**Screened out.**

(shallow) aquifer and the deep aquifer. The superficial aquifer is generally fresh to marginally saline with a natural depth of 40 – 50 mBGL. The deep aquifer is hyper saline.	Distance is considered too great to be considered a receptor for this amendment.

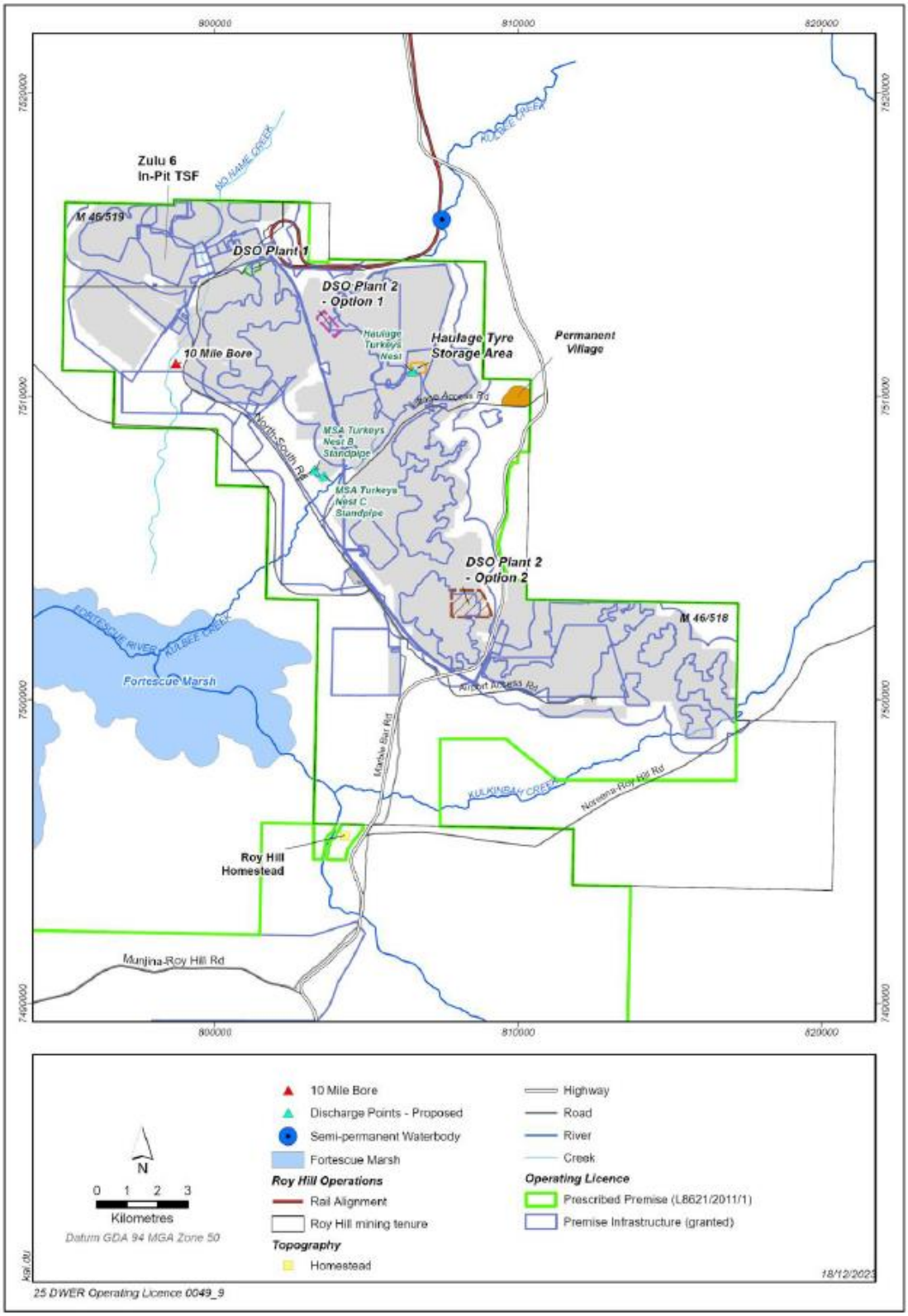

Figure 1: Distance to sensitive receptors

3.2 Risk ratings

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

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

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

The Revised Licence L8621/2011/1 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. Category 5, 6, 12, 52, 54, 57, 64, 73 and 85B 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 construction 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 / comments
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
Construction								
Installation/relocation of DSO Plant 1, DSO Plant 2, DSO Arrangement 1 and DSO Arrangement 2 including earth moving activities and vehicle movement.	Dust	Air/windborne pathway Smothering of vegetation impacting photosynthesis Reduced amenity for road users	On-site ephemeral creeks containing riparian vegetation. Road users on Marble Bar Road (within 200 m)	Refer to Section 3.1	C = Minor L = Rare **Low Risk**	Y	Conditions **13**, **30**, **31**, 33, 34, **35**, 37 and 38	Existing construction/ installation and reporting requirements updated to include the new infrastructure and equipment
	Contaminated/ high sediment laden stormwater	Overland flow causing contamination of nearby creek lines and impacts on riparian vegetation	On-site ephemeral creeks containing riparian vegetation.	Refer to Section 3.1	C = Minor L = Rare **Low Risk**	Y		
Operation								
Screening, crushing, unloading, loading and storage of material at MPP, DSO Plant 1, DSO Plant 2, DSO Arrangement 1, DSO Arrangement 2 and mobile crushing and screening plant Vehicle movements	Dust	Air/windborne pathway Smothering of vegetation impacting photosynthesis Reduced amenity for nearby road users	On-site ephemeral creeks containing riparian vegetation. Road users on Marble Bar Road (within 200 m)	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	Conditions **10**, **13**, **14**, 15, 33, 34, **35**, 37 and 38	Existing operational requirements for infrastructure and equipment updated to include the new DSO Plant 2, DSO Arrangement 1, DSO Arrangement 2 and mobile crushing and screening facility. Licence Holder proposed controls to manage dust emissions are considered acceptable and have

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls / comments
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
								been included as regulatory controls. Licence Holder proposed infrastructure locations have been included as regulatory controls.
	Contaminated/ high sediment laden stormwater	Surface run-off causing detrimental impacts on the surrounding ephemeral creeks and riparian vegetation due to poor water quality	No Name and Kulbee creeks (closest creek within 300 m) Riparian vegetation	Refer to Section 3.1	C = Moderate L = Possible **Medium Risk**	Y	Conditions **10,** **13**, **14**, 15, 33, 34, **35,** 37, 38	Operational requirements for existing infrastructure and equipment updated to include the new DSO Plant 2, DSO Arrangement 1, DSO Arrangement 2 and mobile crushing and screening plant. Licence Holder proposed controls to manage contaminated stormwater are considered acceptable and have been included as regulatory controls.
Use of treated wastewater for dust suppression	Hydrocarbon contaminated water	Direct discharge and surface run-off causing detrimental impacts on the surrounding ephemeral creeks and riparian vegetation due to poor water quality.	Kulbee creek Diversion 400 to the west Riparian vegetation	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Conditions 16, **17**, **18**, 20, 21, 22, 23, **24,** 33, 34, 35, 36, 37, 38, 39 and 40	The use of excess water at the Premises for dust suppression is regulated through conditions of MS1189 and EPBC 2018/8330 however the presence of hydrocarbons in the water is not considered. The Licence Holder has proposed the use of collected wastewater from workshops and vehicle washdown

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls / comments
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
								areas which has the potential to contain hydrocarbons. The use of wastewater for dust suppression has been included as an authorised discharge to land with Licence Holder proposed sampling and limits for TRH (OP-PLN-00300) considered acceptable and have been included as regulatory controls.
Storage of an additional 2,000 used tyres. Vehicle movement	Contaminated fire suppression water	Surface run-off causing detrimental impacts on the surrounding ephemeral creeks and riparian vegetation due to poor water quality	Kulbee creek within 800 m of the storage area	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Conditions 1, 2, 3, **<u>4</u>**, 25, 33, 34, 35, 37, 38, and 40	Used tyre storage including limits and processing requirements updated to include the additional 2,000 used tyres and the new storage area shown in updated Figure 9.
	Dust	Air/windborne pathway causing detrimental impacts on surrounding riparian vegetation	Kulbee creek within 800 m of the storage area Riparian vegetation	Refer to Section 3.1	C = Minor L = Rare **Low Risk**	Y	Conditions 1, 2, 3, **<u>4</u>**, 15, 25, 33, 34, 35, 37, 38, and 40	

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. **<u>Bold and underline text</u>** 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
Request for comment from Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) 26/02/2024.	No comments received.	N/A
Licence Holder was provided with draft amendment on 18/04/2024	Comments received 10/05/2024. Refer to Appendix 1 below.	Refer to Appendix 1 below.
Licence Holder was provided with second draft amendment on 30/505/2024	Comments received 4/06/2024. Requested a small amendment to include the constraint relating to the frequency of permitted process water dam discharge to No Name creek (once every 5 years). Condition 18 Table 9 did have the wording in it but this had been removed as part of previous licence updates.	Supported. Condition 18 (Table 9) has been updated to reflect the proposed change. Licence Holder endorsed proposed update on 6/06/2024 (DWER record A2284833)

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.

Note: Refer to Appendix 1 below for associated updates to the Revised Licence following comments received from the Licence Holder on 10 May 2024 and 4 June 2024.

Table 5: Summary of licence amendments

Condition no.	Proposed amendments
N/A	Changes to the table on the front page of the licence: Category 5 design capacity increased to 102,000 tonnes per annual period Category 57 design capacity increased to 8,000 used tyres
2, Table 1	Category 57 quantity limit increased to 8,000 used tyres
4, Table 2	Table updated by increasing used tyre process limit to 8,000 used tyres and include Figure 2 as an additional infrastructure location. Figure 9 which is referenced in this condition has

Condition no.	Proposed amendments
	also been replaced/revised.
10, Table 4 5.0 Mtpa DSO~~,~~ Plant 1, 5.0 Mtpa DSO Plant 2, 3.0 Mtpa DSO Arrangement 1 and 3.0 Mtpa DSO Arrangement 2	Table updated to include the additional infrastructure constructed under Condition 13 of the Licence. The table has also been updated to include an additional requirement to provide a spill kit at each infrastructure location or during refueling activities. The provision of spill kit/s at potentially remote locations provides quick response to any accidental hydrocarbon spills.
10, Table 4 Mobile crushing and screening facilities	Table updated to include Licence Holder proposed operational requirements for the mobile crushing and screening facility including the provision of spill kits.
13, Table 6	Design and construction/installation requirements proposed by the Licence Holder for the DSO Plant 1, DSO Plant 2, DSO Arrangement 1 and DSO Arrangement 2 has been included as a requirement under the Licence. Note: DSO Plant 1 is already operational at the Premises however the Licence Holder proposes to shift this infrastructure to other locations at the Premises as required.
13, Table 6	Removal of installation requirements for the additional 61 reinjection bores at the Remote MAR Borefield. These bores have now been installed and the Licence Holder has provided an updated list for inclusion in the Licence (Appendix 1 of the Licence).
14	Condition amended to allow the Licence Holder to operate the DSO Plant 1, DSO Plant 2, DSO Arrangement 1 and DSO Arrangement 2 following the submission of compliance documentation.
15, Table 7	Limit for Category 5 updated. Note: The updated Limit increase for used tyre storage is regulated under Condition 2 and 4.
17, Table 8	Table updated to include new locations for the discharge of treated wastewater for dust suppression use.
18, Table 9	Table updated to include Licence Holder proposed Total Recoverable Hydrocarbon limits in dust suppression water used at the MSA Turkeys Nest B Standpipe, MSA Turkeys Nest C Standpipe and Haulage Workshop areas.
23, Table 10	Table updated to include Licence Holder proposed routine monitoring for TRH in dust suppression water used at the MSA Turkeys Nest B Standpipe, MSA Turkeys Nest C Standpipe and Haulage Workshop areas.
27, Table 13	Table updated to include the new vegetation health photo monitoring locations as provided by the Licence Holder. Previous 150 m and 300 m monitoring locations have been removed as these locations have been cleared as discussed in Section 2.2 above.
34, Table 15	Table updated to include the requirement to report the location of mobile processing infrastructure in the Annual Environmental Report.
Definitions, Table 18	Definition table updated.
Schedule 1, Figure 2, Figure 3, Figure 9, and	Updated figures included in the Licence.

Condition no.	Proposed amendments
Figure 13	
Schedule 2, Figure 31	Updated figure included in the Licence.
Schedule 2, Figure 32	New figure for the location of new emission points to land.
Appendix 1 Injection Bore details	Injection bore location details updated to show the latest coordinates. Previous coordinated removed from the Licence.

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. Roy Hill 2023, *Mine – Licence Amendment Application, Environment* (Document No. OP-APP-00091), received 21 December 2023 (DWERDT884835).

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

Condition	Summary of Licence Holder's comment	Department's response
10, Table 4	To align with design and construction requirements in Table 6, the Licence Holder requests amending wording of liner from: *'HDPE lined (1.5 mm thickness) dam…'* to *'HDPE (1.5 mm) or equivalent lined dam…'*	Supported. Table 4 updated with amended wording.
	Amend condition to clearly state a spill kit is required at each infrastructure location and not at each generator location.	Supported. Table 4 updated.
	Missing figures 2 and 3 for infrastructure locations	Supported. Table 4 updated.
12, Table 5	Update weather station inspection frequency to monthly 'when the evaporators are in use'.	Supported. Table 5 updated.
13, Table 6 and 14	The DSO Plant 1 is constructed, and its operating requirements are already included in Table 4. Please remove from Table 6 and corresponding Condition 14.	Supported. Table 6 updated
13, Table 6	Amend to read 'Maximum capacity of 5Mtpa per Plant' to remove potential confusion of 5 Mtpa capacity for combined DSO Plant 1 and 2.	Not applicable. Construction of the DSO Plant 1 is completed and compliance demonstrated therefore design and construction requirements for the DSO Plant 1 are no longer required. See comment above.
	Amend highlighted point to read 'Maximum capacity of 3 Mtpa per Arrangement to remove potential confusion of 3 Mtpa capacity for combined DSO Arrangement 1 and 2.	Supported. DSO Arrangement 1 and DSO Arrangement 2 placed into separate rows.
	To ensure Environment Compliance Reporting and future licence versions are clear and concise, the Licence Holder has requested separating out the infrastructure into individual rows i.e. • DSO Plant 1	Supported. As discussed above, DSO Plant 2, DSO Arrangement 1 and DSO Arrangement 2 construction requirements have been separated into individual rows. DSO Plant 1 is no longer applicable as discussed above.

Condition	Summary of Licence Holder's comment	Department's response
	• DSO Plant 2 • DSO Arrangement 1 • DSO Arrangement 2	
	The number of injection bores initially approved (65) is different to the current licence (61). Licence Holder requests reverting to the original 65 injection bores to reduce confusion in the future. The Licence Holder plans to commission several additional bores over the next few years, either as additional or replacement of current injection bores. These bores will be installed within the MS1189 approved MAR Borefield area.	Supported. DWER notes the administrative error that occurred at the last Licence amendment stage and has updated Table 6 to indicate the installation of 65 injection bores. DWER notes the injection bores within the MAR Borefield area are regulated (monitoring and reporting) through conditions under MS1189.
14	The DSO Plant has already been completed with compliance demonstrated 11/01/2023 (DWERDT710070).	Supported. Reference to DSO Plant 1 has been removed.
17, Table 8	DWER initiated.	Table 8 updated. The discharge of excess water to an unlined recharge basin has been relocated as an Emission to Land within the table. Disposal of excess water to an unlined recharge basin is not considered a discharge to a point source emission to groundwater.
		Process Water Dam emission description updated.
	Incorrect discharge point location figures identified within the table.	Supported. Figures referenced within Table 8 updated.
	'Haulage Workshop – Haulage Turkeys Nest' updated to 'Haulage Workshop – Haulage Turkeys Nest Standpipe'.	Supported. Definition updated.
18, Table 9	DWER initiated.	Recharge Basins repositioned within the table as Emissions to Land.
		The description of the discharge to No Name Creek updated.
	Licence Holder proposed a minor change to include the constraint relating to the frequency of permitted process water dam discharge to no name creek (once every 5 years). Condition 18 Table 9 originally had the wording, but this had been removed as part of the most recent draft update. Once this amendment has been made the Licence Holder would like the licence issued.	Supported. Condition 18, Table 9 updated to included 'Spot sample during discharge, once every 5 years' for the averaging period for point source emission limits to surface water. DWER notes an unplanned discharge to No Name Creek can also occur as a result of extreme weather events and

Condition	Summary of Licence Holder's comment	Department's response
		equipment failure. An EP Act s72 notification is provided to DWER when this occurs and is considered an appropriate regulatory control.
19	DWER initiated.	Fromer Condition 19 is considered redundant and has been removed. Condition 28 requires the Licence Holder to monitor discharge to No Name Creek when it is occurring. The Licence Holder is also required under condition 34 to submit the results of the monitoring in an Annual Environmental Report each year. DWER considers these existing monitoring and reporting requirements are sufficient regulatory controls for this discharge.
23, Table 10	Amend rows to: • MSA Turkeys Nest B • MSA Turkeys Nest C • Haulage Turkeys Nest There should be no separation of LV/HV and HV washdown.	Supported. Table updated.
	Roy Hill requests the removal of 'prior to use for' dust suppression' as this is not practical with more than quarterly frequency of the operation of the turkeys nests for dust suppression.	Supported. Table updated.
Figures 9, 30 and 31	Updated image provided.	Supported. Licence updated with new figure.
Figure 13	There are two Figure 13's within the licence. An updated higher resolution Figure was also provided.	Supported. Numbering updated with duplication removed and new higher resolution figure added to replace the original figure 13.

Condition	Summary of Licence Holder's comment	Department's response
39, Table 17	The Licence Holder requested clarification from DWER regarding the No Name Creek (NNC) discharge condition/s and the relationship of the two Parameters below and set of related conditions so RHIO can be clearer on its implementation of the Licence. Two Parameters of interest under Condition 39, Table 17 are: 1. **Condition 28, Table 13** - *Unscheduled release of water to No Name Creek Discharge location* 2. **Condition 19** - *Discharge of water to No Name Creek*	Former Condition 19 is redundant and has been removed from the licence. See comments above also which clarify requirements for reporting and record keeping for licence monitoring requirements. Fromer Condition 28 (now 27) – requires the Licence Holder to monitor the receiving environment at No Name Creek following the discharge of Process Dam Water. Monitoring consists of determining the vegetation health at set points at the commencement and then quarterly thereafter. The Licence Holder is also required to monitor the wetting front within 24 hours following the cessation of each discharge event. Reporting and record keeping requirements for condition 27 are regulated under conditions 33, 34, 35, 36 and 37. Condition 39 has therefore been updated by removing the notification requirement for conditions 19 and 28 (now 27). DWER also notes that notification of an 'unscheduled release' of water to No Name Creek is already a requirement under s72 of the EP Act. See comments above for condition 18 (Table 9) regarding an 'unplanned' discharge.