# 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** | 2011/009784-1~16 |
| **Premises** | Roy Hill Iron Ore Mine<br>M46/518 and M46/519<br>NEWMAN WA 6753<br>As depicted in Schedule 1 of the licence |
| **Date of Report** | 11 January 2022 |
| **Decision** | Revised licence granted |

Alana Kidd

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**ALANA KIDD**
**MANAGER, RESOURCE INDUSTRIES**
**REGULATORY SERVICES**
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

# Table of Contents

# 1. Decision summary

Licence L8621/2011/1 is held by Roy Hill Iron Ore Pty Ltd (Licence Holder) (Roy Hill) for the Roy Hill Iron Ore Mine (the Premises), located on Mining Tenements M46/518 and M46/519, Newman Western Australia.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the construction and operation of the Premises. As a result of this assessment, amended Licence L8621/2011/1 has been granted. The amended Licence issued supersedes the existing Licence previously granted in relation to the Premises.

# 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 Amendment summary

On 29 June 2021, the Licence Holder submitted an application to the department to amend Licence L8621/2011/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Installation of a 50 million tonnes per annum crushing plant at Run-of-Mine (ROM) 4, comprising a gyratory crusher, ROM bin, vibrating grizzly, conveyors and dust suppression equipment (water sprays/chutes);
- Installation of an overland conveyor to connect ROM 4 to the existing conveyor at ROM 3;
- Installation of 10 new injection bores and associated monitoring bores in the existing South-West Injection Borefield (SWIB); and
- Amendment to the definition to define ‘continuous’ in the licence.

This amendment is limited only to changes relating to Category 5 and 6 activities from the Existing Licence, but with no change to design/throughput capacities. No changes to the aspects of the existing Licence relating to Category 12, 52, 54, 57, 64, 73 or 85B have been requested by the Licence Holder.

Ancillary infrastructure required for the proposal, but not assessed within the licence amendment application includes, but is not limited to, ablutions, offices, crib rooms, process water, fire water, power or other enabling works required.

### 2.2.1 Crushing plant at ROM4 and overland conveyor

The indicative location of the overland conveyor and ROM 4 crushing plant is shown in Figure 1 and Figure 2 below.

Whilst the amendment seeks the installation of a new crushing plant at ROM 4, Roy Hill Iron Ore Pty Ltd are not seeking an increase to the tonnage approved for Category 5 on the licence. The proposed crushing plant will work within the existing approved throughput for Category 5, delivering efficiencies from mining activities located within the southern mining pits at the Roy Hill tenure.

Construction is proposed to commence in December 2021 and take approximately twelve

months. Water for the construction and operation of the crushing plant will be supplied by the existing production and dewater borefield.

The proposed crushing plant is expected to consist of a Gyratory Crusher, ROM bin, Vibrating Grizzly and conveyors. Dust will be controlled using internal and external dust curtains, primary and secondary scrapers, water sprayers, chutes and dust collectors. There will not be an increase in throughput at the Premises with the operation of the new crushing plant.

The crushing plant will be located within a previously cleared area. Surface water will be diverted away from the crushing plant area. All surface water collected within the crushing plant will be retained within the designated plant area.

Any soil contaminated by hydrocarbons in the crushing area will be taken to the bioremediation facility for treatment or disposal off-site.

The proposed overland conveyor will run from the new ROM4 area to the existing conveyor at ROM3. The conveyor will be designed to maintain existing surface water flows. Dust will be controlled through the use of water sprays.

### 2.2.2 Additional reinjection bores

The amendment also requests approval for the installation of an additional 10 (ten) injection bores and associated monitoring bores at the existing SWIB area as approved in the existing Licence.

The additional 10 reinjection bores will not increase the quantity of water disposed of in the SWIB. The source of the water for disposal (reinjection) also remains unchanged.

The exact location of these bores is subject to final bore design. Nominal locations have been provided for this amendment application, with the final bore location and construction details to be provided following installation. The nominal locations provided for assessment can be found in Appendix 2 of this report.

### 2.2.3 Other

Include a definition for continuous in the definition section.

Ancillary infrastructure required for the proposal, but not assessed within the licence amendment application includes, but is not limited to, ablutions, offices, crib rooms, process water, fire water, power or other enabling works required.

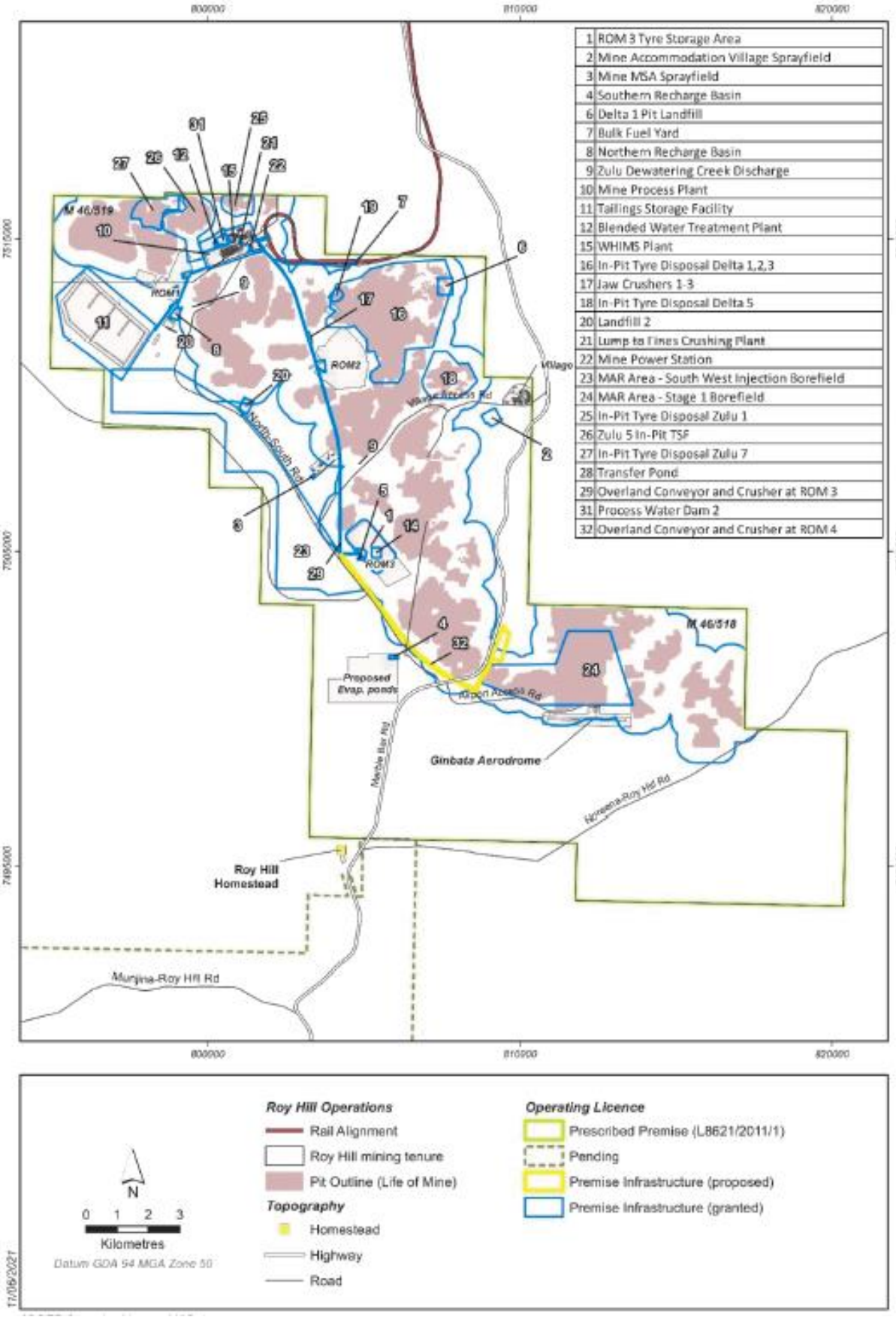


**Figure 1 Location of the proposed overland conveyor and ROM 4 crushing plant**

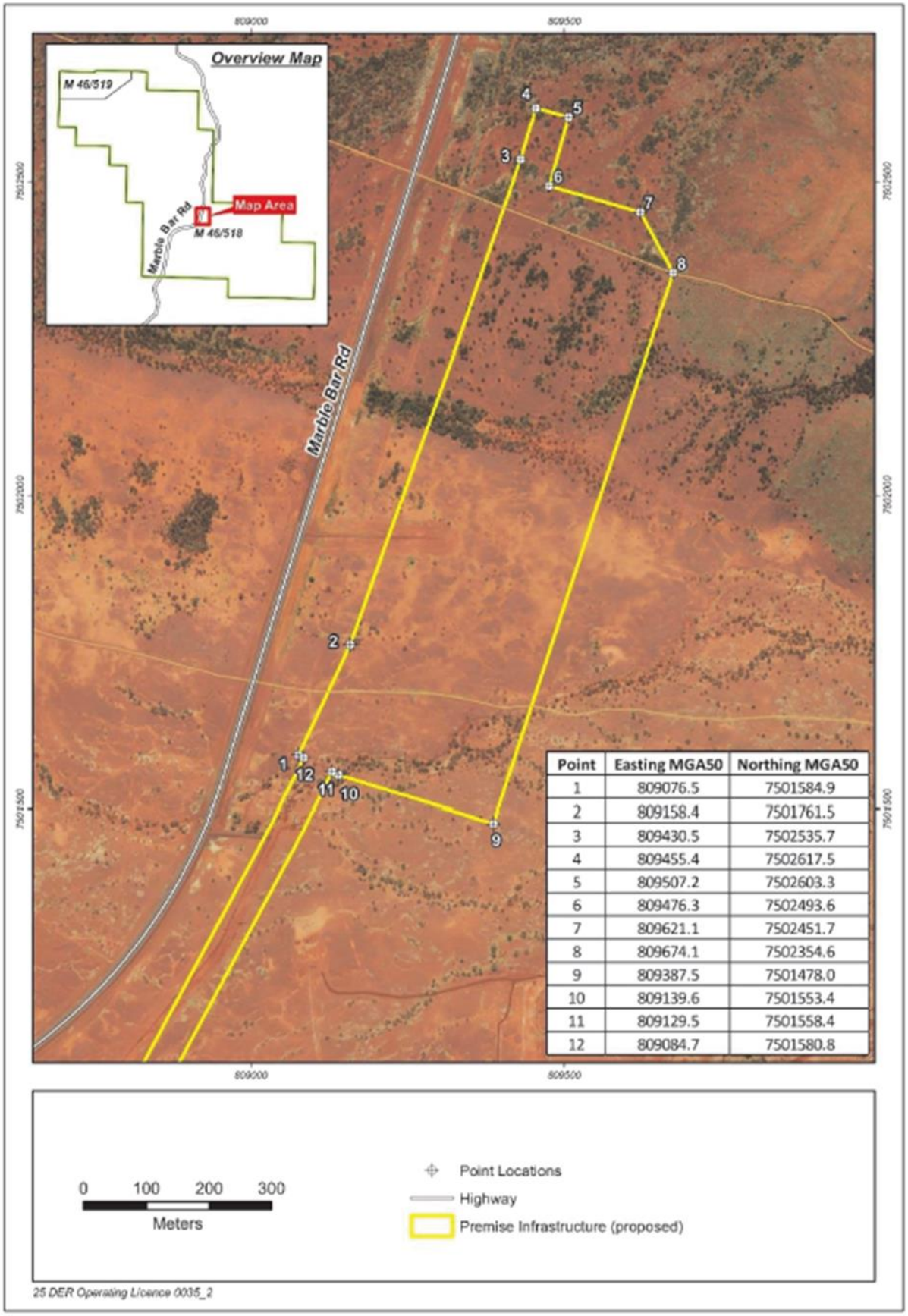


**Figure 2 Indicative ROM 4 crushing plant location (Roy Hill Iron Ore Pty Ltd, 2021)**

## 2.3 Part IV of the EP Act

Ministerial Statements (MS) 824 and 829 were issued under Part IV of the *Environmental Protection Act 1986* (EP Act) in December 2009 and March 2010, respectively.

MS 824 and MS 829 provide conditions at the Roy Hill Iron Ore Mine for the management of groundwater drawdown, groundwater dependent vegetation (from groundwater abstraction), impacts from run-off and seepage from the waste rock dump, waste fines storage plant and evaporation pond.

On 11 March 2018, Attachment 5 to MS 824 and Attachment 3 to MS 829 approved Dewatered Saline Groundwater up to 30,000 mg/L TDS and RO Plant reject water, to be disposed to recharge basins and/or reinjection bores to the extent of up to 55 GL per annum for a period of up to 2 years.

On 30 September 2020, Attachment 8 to MS 824 and Attachment 5 to MS 829 approved Dewatered Saline Groundwater up to 30,000mg/L TDS, Reverse Osmosis Plant reject water, and Tailing Storage Plant (TSF) Decant to be disposed to recharge basins and/or reinjection bores for up to 55 GL per annum for an additional period of up to 3 years (total trial of 5 years). The new trial completion date is now 25 March 2023. No requirements were imposed in the Part IV approvals to monitor for quality of the discharge waters or monitor the ambient groundwater at the location of the recharge basins and/or reinjection bores.

The proposed crushing plant at ROM4 and the overland conveyor from ROM3 to ROM4 are planned to be located within the approved 'Stage 2 mining and associated activities area' (Stage 2 area) identified in Figure 6 of MS 824 and Figure 9 of MS 829.

The department notes MS 824 and MS 829 do not specifically identify all components of infrastructure located within the Stage 2 area. However, the department also notes when MS 824 and MS 829 were amended on 21 May 2018 where authorised processing rates for iron ore were removed (deemed to be better regulated under Part V of the EP Act) that future infrastructure regulated under Part V, although still permitted in that area, would no longer be shown. Therefore, the operation of the crushing plant at ROM4 and the overland conveyor from ROM3 to ROM4 will be regulated under Part V of the EP Act.

## 2.4 DMIRS Mining Proposal

The Department of Mines, Industry Regulation and Safety (DMIRS) advised DWER on 21 September 2021 (DWER Record DWERDT506790) that they are currently assessing a revised Mining Proposal (ID 98441), which includes the works proposed in this licence amendment. DMIRS has advised that it is unclear from the application if any clearing is required for the installation of the additional bores, however if required the Licence Holder should liaise directly with DMIRS to ensure that any clearing is approved under the relevant Mining Proposal and scope of works.

Search of minedex.dmirs.wa.gov.au shows the last update to the Mining Proposal occurred 11 March 2021 (version 12).

# 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 construction and 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** | | | |
| Dust | Vehicle movements, lift-off from stockpiles and/or stored product, earthworks, transport of equipment and machinery etc. | Air/windborne pathway | Visual inspections undertaken daily.<br>Dust suppression (water) applied to access roads during construction.<br>Implement dust suppression measures where dust generation is visible, except during topsoil clearing.<br>Water for the construction and operation of the ROM 4 crushing plant will be sourced from the existing dewatering and production borefields. |
| Noise | Vehicle movements, earthworks, drilling of bores, transport and handling of infrastructure | Air/windborne pathway | Nil |
| Contaminated stormwater or soil<br>(Hydrocarbons)<br>(continued into operation) | Hydrocarbon spills during refueling activities | Overland/Surface water run off<br>Direct discharge to land | All spills will be managed in accordance with the Roy Hill Spill Response Procedure (OP-PRO-00275)[1].<br>Any soil contaminated by hydrocarbons will be taken to the bioremediation facility for treatment or disposed off-site.<br>Groundwater level and quality monitoring will continue as per the Roy Hill Iron Ore Mine Monitoring Manual (OP-MAN-00007). |
| **Commissioning and Operation** | | | |
| Dust | Crushing of material, vehicle movements, lift-off from stockpiles, conveyor and/or stored product, handling and transport of product along overland | Air/windborne pathway | Plant will operate within existing cleared mine pit area, reducing the potential for vegetation and priority flora to be impacted.<br>Water sprays at transfer points.<br>Water sprays and water carts to minimise dust emissions from material |

| Emission | Sources | Potential pathways | Proposed controls |
|---|---|---|---|
| | conveyor | | stockpiles.<br>Roy Hill Dust Management Procedure OP-PRO-00180.<br>Conveyors and loading bin fitted with skirt module, internal/external dust curtains, primary and secondary scrapers, water sprayers and dust collectors.<br>Daily/ continuous inspection for dust emissions from the Crushing Plant to activate additional dust suppression, if required.<br>Water for the construction and operation of the crushing plant sourced from the existing dewatering/ production borefields.<br>Monthly inspection of dust control equipment. |
| Noise | Crushing of material | Air/windborne pathway | N/A - as the crushing plant and overland conveyor will be located within an existing disturbed area of the premises there are no identified receptors requiring additional noise controls. |
| Contaminated stormwater or soil<br>(Hydrocarbons and chemicals) | Hydrocarbon spills during refueling activities<br>Chemical spills | Overland/Surface water run off<br>Direct discharge to surface water<br>Direct discharge to land<br>Infiltration to groundwater | Stormwater diversion structures around the ROM 4 crushing plant to divert stormwater away from the operational area.<br>All surface water collected within the ROM 4 crushing plant will be retained within the designated plant area.<br>All spills will be managed in accordance with the Roy Hill Spill Response Procedure (OP-PRO-00275)[1].<br>The crushing plant will be managed in accordance with Roy Hill Hazardous Materials Management Procedure (OP-PRO-00289)[1] and Roy Hill Water Discharge Management Procedure (OP-PRO-00178)[1].<br>Vegetation health is monitored across the Mine in accordance RHIO Vegetation Environmental Management Plan (OP-REP-00363).<br>Roy Hill Chemical Management Procedure[1]<br>Any soil contaminated by hydrocarbons will be taken to the bioremediation facility for treatment or disposal off-site. |

| Emission | Sources | Potential pathways | Proposed controls |
|---|---|---|---|
| | | | Groundwater level and quality monitoring will continue as per the Roy Hill Iron Ore Mine Monitoring Manual (OP-MAN-00007). |
| Sediment-laden stormwater | Dust emissions<br>Fines | Air/windborne pathway<br>Direct discharge to surface water<br>Overland runoff/surface water run off | Overland conveyor will be constructed to maintain existing surface water flows.<br>Vegetation health is monitored across the Mine in accordance RHIO Vegetation Environmental Management Plan (OP-REP-00363).<br>Stormwater diversion structures around the ROM 4 crushing plant to divert stormwater away from the operational area.<br>All surface water collected within the ROM 4 crushing plant will be retained within the designated ROM 4 plant area. |
| Discharge of dewatering water to additional reinjection bores | No change (excess dewatering effluent, TSF decant water and RO waste). | Direct injection into aquifer. | As per existing reinjection bores. Each injection bore will be fitted with flow meter, electrical conductivity sensor, water level sensor and sampling tap. |
| Discharge of saline water | Failure of additional reinjection pipelines | Overland flow | Pipeline integrity, pumps and monitoring equipment will be inspected weekly.<br>Pipelines constructed in cleared areas.<br>Pipelines from transfer dam to the reinjection bores fitted with pressure transducers and connected to the SCADA system (for detection of flow or pressure anomalies, and alarms). |

Note 1. Roy Hill Operating Procedures are further detailed in Appendix 1

### 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 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)).

Due to the distance from the proposed ROM 4 crushing plant area, the Roy Hill Homestead (7km away) and Fortescue Metals Christmas Creek mining camp (20km away) are not considered sensitive receptors for this amendment application.

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

| Environmental receptors | Distance from prescribed activity |
|---|---|
| Fortescue Marsh<br>(area shown in green on Figure 3).<br>Priority 1 Ecological Community (PEC) | Approximately 3km west of the proposed overland conveyor route.<br>Approximately 7.5km west of the proposed crushing plant at ROM 4.<br>Approximately 1.4km from the MAR system. |
| Ephemeral creeks<br>The premises is drained by several ephemeral creeks, including No Name Creek, which generally flow in a south westerly direction towards the Fortescue River and Marsh.<br>(shown by the light blue lines on Figure 3) | A significant stream, Kulbee Creek (shown by the green line on Figure 3), runs through the middle of the mine area in a NE to SW direction towards the Fortescue River.<br>A major river (Kulbinah Creek) runs through the southern portion of the premises and intersects the proposal area, also connecting to the Fortescue River.<br>No Name Creek lies to the northwest.<br>The mine pit areas are located within the No Name Creek Mine, Mine Central, Kulbee Creek Mine, Kulbee Creek Upper, Kulbee Creek Tributary (South East), Kulbee Creek Tributary (east), Golf 201, Christmas Creek, Gold 203, Sierra 101 – 104, Sierra 400, Eastern Mine and Kulkinbah Creek catchments (Roy Hill 2021). |
| Fortescue River<br>(shown by the dark blue line on Figure 3) | Within the premises boundary (southern portion), draining to the Fortescue Marsh. |
| Groundwater<br>Pilbara, Hamersley – Fractured Rock groundwater aquifer | Depth to groundwater is approximately 30m below ground level. |

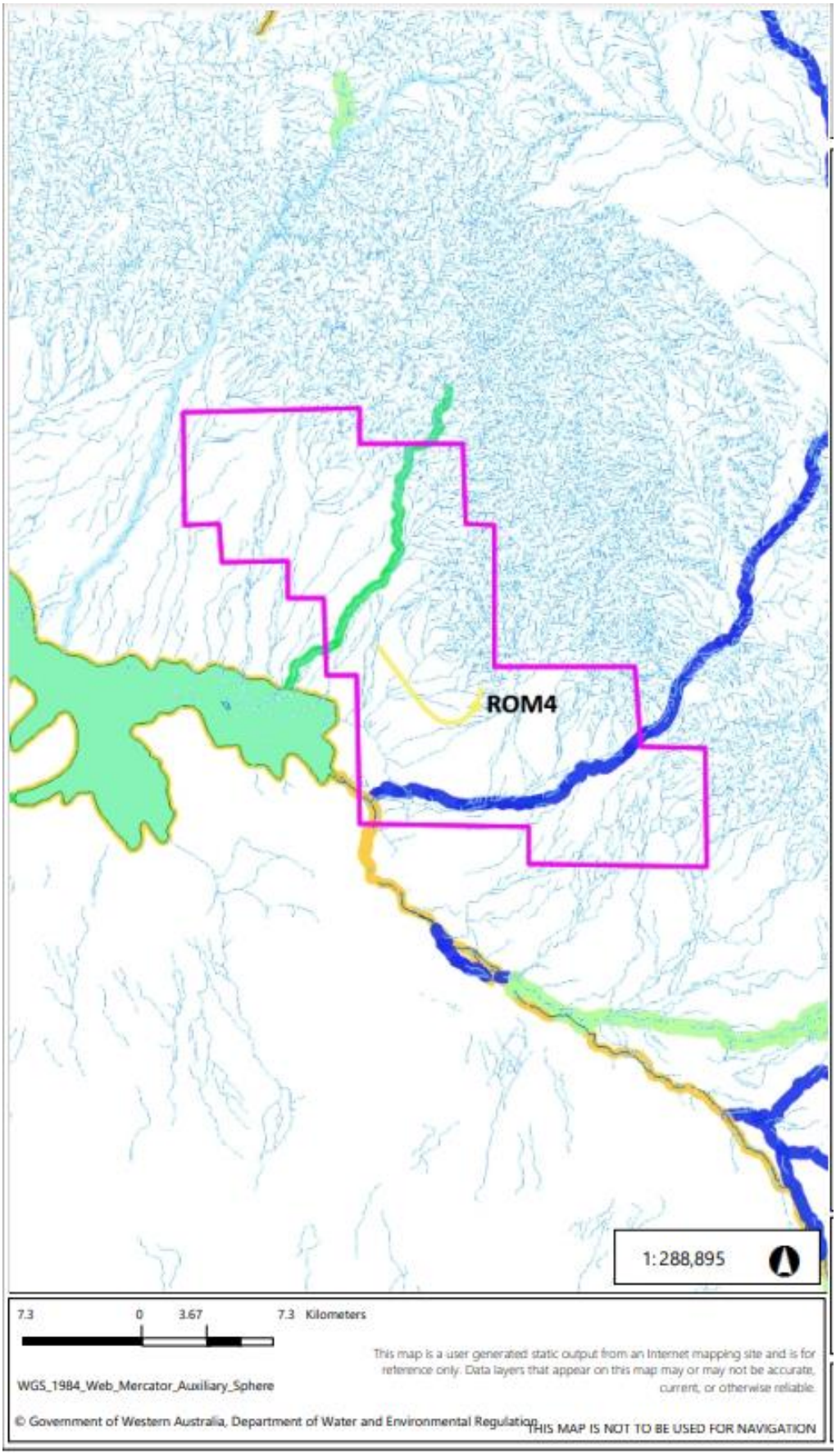


**Figure 3 Sensitive surface water receptors**

## 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 Amended Licence L8621/2011/1 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises.

The conditions in the Amended 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]<br>C = consequence<br>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** | | | | | | | | |
| Construction and placement of crusher, screen and associated equipment including vehicle movements (reversing beepers).<br>Construction of stormwater diversion channels.<br>Construction of overland conveyor<br>Installation of injection bores | Dust | Air/windborne pathway causing impacts to vegetation health from smothering. | Surrounding remnant vegetation | Refer to Section 3.1 | C = Slight<br>L = Possible<br>**Low Risk** | Y | Condition **13**, 14 and 15 | Update to condition 13 to include construction conditions and location of the infrastructure. |
| | Hydrocarbon or chemical contaminated stormwater or soil | Discharge to land causing contamination of soil<br>Discharge to surface water or overland runoff causing contamination of surface water bodies | Soil<br>Tributaries to the Fortescue River and Fortescue Marsh | Refer to Section 3.1 | C = Slight<br>L = Unlikely<br>**Low Risk** | Y | Condition **13**, 14 and 15 | Update to condition 13 to include construction conditions and location of the infrastructure.<br>Provisions of the *Environmental Protection* (*Unauthorised discharges) Regulations 2004* also apply for certain discharges to the environment, such as hydrocarbons. |
| **Commissioning and Operation (including time-limited-operations operations)** | | | | | | | | |
| Operation of the crushing plant, movement of ore on conveyors, stackers and stockpiles, vehicle movements | Dust | Air/windborne pathway causing impacts to vegetation health from smothering. | Remnant Vegetation | Refer to Section 3.1 | C = Minor<br>L = Possible<br>**Medium Risk** | Y | Condition **13** | Applicant controls conditioned for the management of dust at the crushing plant.<br>Standard administration and reporting |

| Risk Event | | | | | Risk rating[1]<br>C = consequence<br>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 | | | | |
| | | | | | | | | requirements. |
| | Hydrocarbon or chemical contaminated stormwater or soil | Discharge to land causing contamination of soil<br>Discharge to surface water or overland runoff causing contamination of surface water bodies | Soil<br>Tributaries to the Fortescue River | Refer to Section 3.1 | C = Slight<br>L =Unlikely<br>**Low Risk** | Y | Condition 13 | Applicant controls for diversion of stormwater conditioned in the Licence.<br>Installation of infrastructure to be generally located as identified in the submitted application.<br>Applicant controls conditioned in licence requiring infrastructure is located at least 50m from any surface water body.<br>Provisions of the *Environmental Protection* (*Unauthorised discharges) Regulations 2004* also apply for certain discharges to the environment, such as hydrocarbons |
| | Sediment laden stormwater | Surface/Overland water run off causing erosion and scouring of ground.<br>Direct discharge causing turbidity, | Soil<br>Tributaries to the Fortescue River and Fortescue Marsh | Refer to Section 3.1 | C = Minor<br>L = Possible<br>**Medium Risk** | Y | Condition **13** | Applicant controls for diversion of stormwater conditioned in the Licence.<br>Installation of infrastructure to be |

| Risk Event | | | | | Risk rating[1]<br>C = consequence<br>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 | | | | |
| | | sedimentation and contamination of the Fortescue River and tributaries | | | | | | generally located as identified in the submitted application.<br>Applicant controls conditioned in licence requiring infrastructure is located at least 50m from any surface water body. |
| Operation of additional pipelines and reinjection bores at the SWIB area | Saline water to land due to pipeline failure/ruptures before injection | Overland water run off causing erosion and scouring of ground.<br>Direct discharge causing turbidity, sedimentation and contamination of the Fortescue River and tributaries. | Soil<br>Tributaries to the Fortescue River and Fortescue Marsh<br>Vegetation | Refer to Section 3.1 | C = Minor<br>L = Possible<br>**Medium Risk** | Y | Condition 12, **13,** 14, 15, 39, 40, 43, 44 | Condition 13 Table 6 updated to include the requirement to install the 10 additional reinjection bores within the SWIB area.<br>Existing conditions for routine inspections, documentation and reporting apply.<br>Provisions of the *Environmental Protection Act 1986* regarding pollution and environmental harm apply.<br>Provisions of the *Environmental Protection* (*Unauthorised discharges) Regulations 2004* also apply for certain discharges to the environment. |

| Risk Event | | | | | Risk rating[1]<br>C = consequence<br>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 | | | | |
| | Disposal of excess mine pit dewater, RO plant reject water and TSF decant.<br>No change in discharge volume or the source of the emission. | Direct reinjection into aquifer (Managed Aquifer Recharge).<br>The potential impacts remain unchanged from current operations with no change to the emission source or quantity discharged. | Groundwater<br>Soils<br>Vegetation<br>Tributaries to the Fortescue River and Fortescue Marsh | Refer to section 3.1 | Previous risk rating (Licence amendment 5/10/18)<br>C = Moderate<br>L = Possible<br>**Medium Risk**<br>Current<br>C = Moderate<br>L = Possible<br>**Medium Risk**<br>No change | Y | Conditions **13**, 14, 15, 16, 18, 19, 20, 27, 28, 29, 30, 31, 32, 36, 39, 40, 43, 44, 45, 46 and 47 | The addition of 10 new reinjection bores at the existing SWIB area does not alter the risk from current operations due to the volume and quality of the discharge waters remaining unchanged, and the new bores are replacing discontinued reinjection bores.<br>Dewatering effluent and RO plant reject water disposed to recharge basins and/or reinjection bores, was assessed and approved under Part IV of the EP Act (s45C approvals to MS 824 and MS 829 as signed 11 May 2018). Part IV set a quantity limit of 55 GL/yr and salinity limit of 30,000 mg/L TDS. However, no monitoring of the discharge waters or ambient monitoring were imposed in the Part IV approvals.<br>The Existing Licence requires routine inspection of the reinjection |

| Risk Event | | | | | Risk rating[1]<br>C = consequence<br>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 | | | | |
| | | | | | | | | infrastructure, monitoring of the emission including additional parameters besides TDS, monitoring of ambient conditions at the SWIB area and reporting requirements. These conditions will also be applied to the additional reinjection bores. |

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 |
|---|---|---|
| Local Government Authority (Shire of East Pilbara) advised of proposal on 7/9/2021 (DWER Record A2042158) | No response received. | N/A |
| Department of Mines, Industry Regulation and Safety (DMIRS) advised of proposal on 7/9/2021 (DWER Record A2042144). | DMIRS responded on 21/09/2021 (DWER Record DWERDT506790). DMIRS have advised that they are currently assessing a revised Mining Proposal, which includes the works proposed in this licence amendment. DMIRS have advised that it is unclear from the application if any clearing is required for the installation of the additional bores, however if it is required the Licence Holder should liaise with DMIRS to ensure that any clearing is approved under the relevant Mining Proposal and scope of works. | Noted. DWER also notes the 10 new injection bores will be installed within the already cleared SWIB area.<br>Search of minedex.dmirs.wa.gov.au shows the last update to the Mining Proposal occurred 11/3/21 (version 12). |
| Licence Holder was provided with draft amendment on 22 November 2021 | Refer to Appendix 3 | Refer to Appendix 3 |

# 5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that an Amended 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 Amended Licence as part of the amendment process.

**Table 5: Summary of licence amendments**

| Condition no. | Proposed amendments |
|---|---|
| Condition 13 | Include work specifications for the:<br>- 50 Mtpa ROM 4 crushing plant;<br>- overland conveyor from ROM4 to the existing ROM3; and<br>- additional 10 new reinjection/monitoring bores. |
| Definitions | Inclusion of definition for 'continuous' |
| Schedule 1 | Inclusion of updated map for Figure 1, and inclusion of new Figure 13: ROM 4 crushing plant area |
| Appendix 1 | Update to the MAR Area Groundwater Monitoring Bore Details table to include the coordinates of new proposed injection and monitoring bores |

# 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 Iron Ore Pty Ltd (Roy Hill) 2021, *Operating Licence Amendment Application – ROM 4 Crusher*, OP-APP-00080, Perth, Western Australia.

# Appendix 1: Roy Hill Operating Procedures Summary

The Roy Hill Operating Procedures are further detailed below, to provide additional Licence Holder emission control information.

1. Roy Hill Spill Response Procedure (OP-PRO-00275), provides for:
   - Control the spill at source if safe to do so (for example: turn off leaking valves, stand up overturned drums, isolate burst hydraulic hose);
   - Contain the extent of the spill using absorbent material/socks around the perimeter of the spill using an oil and hydrocarbon spill kit;
   - Prevent hydrocarbons from entering drains and waterways as a priority.
   - Use spill kit mats, absorbent pillows and peat or similar material to absorb the residual surface liquids in accordance with the SDS including in drains or creek lines. Use a vacuum truck to siphon free liquid (e.g. from within a sump, drain or otherwise dry creek line) and transfer the waste hydrocarbons to the appropriate waste hydrocarbon tank for removal offsite.
   - Place used and contaminated absorbent booms, pillows and matting into designated hydrocarbon waste bins for removal offsite;
   - Remove contaminated soil in accordance with work instructions and dispose of contaminated soil at the Bioremediation Facility
   - Undertake the removal of any contaminated waste from site in accordance with the *Environmental Protection (Controlled Waste) Regulations 2004* (Roy Hill, 2021b).

2. Roy Hill Chemical Management Procedure (OP-PRO-00289) provides details on refuelling practices. These refuelling practices are adopted across the mine site for all refuelling activities and are not specific to this ROM4 crushing plant.

3. The procedure outlines the following key points relevant to this facility:
   - Carry out the distribution of diesel fuel using dedicated self-bunded service tanker trucks and refuelling facilities.
   - Provide secondary containment for all hydrocarbon and chemical transfer points in case of failure or leaks.
   - Fit service trucks, re-fuelling trailers and other vehicles used for the transportation of hydrocarbons and chemicals with stocked spill kits and drip trays at all times.
   - Close drains or valves in bunds, drip trays and other containment equipment during normal use.
   - Place drip trays under fuel connection points where there is no containment to capture any spills or leaks that may occur.
   - Ensure that personnel undertaking fuel transfer remain in attendance to observe the transfer and respond promptly to any fuel overflows (Roy Hill, 2021b).

4. Roy Hill Hazardous Materials Management Procedure (OP-PRO-00289) provides for:
   - Utilisation of ChemAlert as a chemical management system for chemical requests, tracking risk assessments and stock holdings, and searching holdings and the register
   - All chemicals shall be approved for use onsite in ChemAlert prior to being brought to a Roy Hill work area
   - All work areas that store chemicals shall ensure they have either a Safety Data Sheet folder, that accurately reflects the chemicals stored in the area, or access to ChemAlert.
   - Transport of Dangerous Goods according to the Australian Dangerous Goods Code.
   - Store chemical's in approved containers, bulk tanks, fit for purpose bulk facilities or in package stores.
   - All chemicals supplied shall be labelled in accordance with the Code of Practice for the Labelling of Workplace hazardous chemicals

- Work areas shall conduct regular inspections of chemical storage facilities, including bulk stores and minor storage (such as workshop chemical cabinets and warehouses) to assess compliance with this procedure and the Performance Standard.
- Remove waste hazardous material from site and dispose of using an approved waste disposal contractor, and in accordance with the `Waste Management Procedure' (OP-PRO-00063).
- Maintain spill management equipment appropriate to the volume and type of Chemical being stored and ensure that the equipment is easily available, clearly labelled and highly visible at each hazardous material storage location at all times.

5. Roy Hill Water Discharge Management Procedure (OP-PRO-00178). The procedure outlines the following key points relevant to this facility:
   - Bund temporary hydrocarbon and chemical storage areas in accordance with Australian Standard 1940 (2004) `The Storage and Handling of Flammable and Combustible Liquids' and construct with materials of an impervious nature to prevent soil and groundwater contamination in the event of accidental spillage.
   - Ensure that bunding is capable of holding 110% of the whole tank's contents where chemical and hydrocarbon storage tanks are not double skinned and self-bunded.
   - Provide secondary containment for all hydrocarbon and chemical transfer points in case of failure or leaks.
   - Ensure that personnel undertaking fuel transfer remain in attendance to observe the transfer and respond promptly to any fuel overflows.
   - Grade semi-permanent and permanent bunded storage areas to drain away from storage tanks to a sump which can be emptied or pumped out, as required.
   - Manage the spill in accordance with the Spill Response Environmental Management Procedure (OP-PRO-00275).

# Appendix 2: Nominal SWIB bore locations provided for assessment

| Injection Bore ID | Associated Monitoring Bore ID | Nominal Easting | Nominal Northing |
|---|---|---|---|
| RHIB0502 | RHPZ0541 | 797620 | 7510300 |
| RHIB0503 | RHPZ0542 | 797180 | 7510250 |
| RHIB0504 | RHPZ0543 | 798780 | 7510340 |
| RHIB0505 | RHPZ0544 | 799610 | 7509880 |
| RHIB0506 | RHPZ0545 | 800473 | 7509530 |
| RHIB0507 | RHPZ0546 | 801100 | 7508648 |
| RHIB0508 | RHPZ0547 | 803060 | 7504970 |
| RHIB0509 | RHPZ0548 | 803830 | 7504020 |
| RHIB0510 | RHPZ0549 | 802713 | 7506604 |
| RHIB0511 | RHPZ0550 | 802658 | 7506315 |

**Figure 4 – Nominal SWIB bore locations (Roy Hill Iron Ore Pty Ltd, 2021)**

# Appendix 3: Summary of Licence Holder's comments on risk assessment and draft conditions

| Condition | Summary of Licence Holder's comment | Department's response |
|---|---|---|
| 13, Table 6 | The Licence Holder advised:<br>- screening is not part of the ROM4 processing circuit with a vibrating grizzly instead being used to size product;<br>- surge bins are not required at ROM4 because multiple conveyors are not used;<br>- wind guards are not fitted on all conveyors and are only fitted to lengthy conveyors to prevent mistracking; and<br>- telescopic chutes were not included in the proposed design of the crushing plant at ROM4. | Supported. All reference to 'screening', 'surge bins', 'wind guards' and 'telescopic chutes' have been removed from the Licence. |
| 13, Table 6 | The Licence Holder has requested the condition relating to the installation of the 10 additional reinjection/monitoring bores, is reworded to allow flexibility for the position of the bores within the SWIB area. | Supported. Reworded to allow the bores to be suitably positioned with the approved SWIB area. Once installed the location to be provided to the department as part of the compliance report. |
| Figure 13 | Figure description refers to 'screening'.<br>Updated figure provided for location of ROM 4 crusher. | Supported. Reference to screening removed and new figure included. |
| Appendix 1<br>Injection Bore details table | Appendix 1 include wording that supports flexibility as discussed in Roy Hills response to Condition 13 for the MAR system. | Supported. Licence already worded so bores can only be located within the MAR Trail area as shown in Figure 14. Proposed coordinates removed from Appendix 1 and worded so exact coordinates to be provided following installation. Note bore locations in the MAR trial area is already approved under MS824. MS 824 only identifies the area for bores and not the exact location for each bore. |
| Appendix 1<br>MAR Area Groundwater Monitoring Bore details table | Appendix 1 include wording that supports flexibility as discussed in Roy Hills response to Condition 13 for the MAR system. | Supported. Licence already worded so bores can only be located within the MAR Trail area as shown in Figure 14. Proposed coordinates removed from Appendix 1 and worded so exact coordinates to be provided following installation. Note bore locations in the MAR trial area is already approved under |

| Condition | Summary of Licence Holder's comment | Department's response |
|---|---|---|
| | | MS824. MS 824 only identifies the area for bores and not the exact location for each bore. |

# Appendix 4: Application validation summary

| SECTION 1: APPLICATION SUMMARY (as updated from validation checklist) | | | | | |
|---|---|---|---|---|---|
| **Application type** | | | | | |
| Amendment to licence | ☒ | Current licence number: | L8621/2011/1 | | |
| | | Relevant works approval number: | | N/A | ☐ |
| Date application received | | 29 June 2021 | | | |
| **Applicant and Premises details** | | | | | |
| Applicant name/s (full legal name/s) | | Roy Hill Iron Ore Pty Ltd | | | |
| Premises name | | Roy Hill Iron Ore Mine | | | |
| Premises location | | M46/518 and M46/519 | | | |
| Local Government Authority | | Shire of East Pilbara | | | |
| **Application documents** | | | | | |
| HPCM file reference number: | | 2011/009784-1~16 | | | |
| Key application documents (additional to application form): | | Application Form (DWERDT471983)<br>Supporting Documentation (DWERDT471986) | | | |
| **Scope of application/assessment** | | | | | |
| Summary of proposed activities or changes to existing operations. | | The amendment application is for:<br>- Installation of an overland conveyor (The overland conveyor will connect to the existing conveyor at ROM 3);<br>- Installation of a 50 million tonnes per annum gyratory crusher at Run-of-Mine (ROM) 4;<br>- Installation of 10 new injection bores and associated monitoring bores in the South West Injection Borefield; and<br>Amendment to the definition to define 'continuous' in the licence. | | | |

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 (amendments only) |
|---|---|---|
| Category 5: Processing or beneficiation of metallic or non-metallic ore | 86,000,000 (wet) tpa to produce 65,000,000 (wet) tpa ore for export<br>Up to 4.5mtpa (wet) will be processed through the new ROM4 plant. | No change. |

| 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 ☐ No ☒ | Referral decision No: MS824 and 829 |

| | | |
|---|---|---|
| Does the applicant hold any existing Part IV Ministerial Statements relevant to the application? | Yes ☒ No ☐ | Referral decision No: MS824 and 829 |
| Has the proposal been referred and/or assessed under the EPBC Act? | Yes ☐ No ☒ | |
| Has the applicant demonstrated occupancy (proof of occupier status)? | Yes ☒ No ☐ | Mining lease / tenement ☒<br>M46/518 Expires 31/10/2031<br>M46/519 Expires 31/10/2031 |
| Has the applicant obtained all relevant planning approvals? | Yes ☐ No ☐ N/A ☒ | Managed under *Mining Act 1978* |
| Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal? | Yes ☐ No ☒ | No clearing is proposed. |
| Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal? | Yes ☐ No ☒ | No clearing is proposed. |
| Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal? | Yes ☒ No ☐ | Licence/permit No:<br>GWL172642(4) |
| Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)? | Yes ☐ No ☒ | Name: Pilbara Surface Water Area<br>Pilbara Groundwater Area<br>Type: Proclaimed Groundwater Area/Surface Water Area<br>Has Regulatory Services (Water) been consulted?<br>Yes ☐ No ☒ N/A ☐<br>Regional office: North West |
| Is the Premises situated in a Public Drinking Water Source Area (PDWSA)? | Yes ☐ No ☒ | |
| Is the Premises subject to any other Acts or subsidiary regulations (e.g. *Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx*) | Yes ☒ No ☐ | *Dangerous Goods Safety Act 2004*<br>*Mining Act 1978* |

| | | |
|---|---|---|
| Is the Premises within an Environmental Protection Policy (EPP) Area? | Yes ☐ No ☒ | |
| Is the Premises subject to any EPP requirements? | Yes ☐ No ☒ | |
| Is the Premises a known or suspected contaminated site under the *Contaminated Sites Act 2003*? | Yes ☐ No ☒ | Roy Hill have reported DWER of a potentially contaminated site on 11/11/2020 following a fuel spill. This was largely cleaned up but part of the area can't be accessed. |