Government of Western Australia
Department of Water and Environmental Regulation

Decision Report

Application for Works Approval

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

Works Approval Number	W6958/2024/1
Applicant	Australian Garnet Pty Ltd
ACN	646 741 157
File number	DER2024/000404
Premises	Lucky Bay Garnet Project George Grey Drive Legal description – Mining Tenements M70/1280, G70/253, L70/215, L70/134, L70/178, L70/239, G70/269, G70/271, L70/170, M70/1387 and L70/167 within Lot 1 on Diagram 91564, Lot 300 on Plan 60565 and Lot 1431 on Plan 251608 As defined by the premises map in Schedule 1 and the coordinates in Schedule 2 of the works approval
Date of report	04/03/2025 (FINAL)
Proposed Decision	Intent to grant works approval

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1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction, commissioning, and time-limited operation of the premises. As a result of this assessment, Works Approval W6958/2024/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) 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 and overview of premises

Australian Garnet Pty Ltd (the applicant) currently holds Licence L9440/2024/1 for the operation of a heavy mineral sands operation (Category 8) at the Lucky Bay Garnet Project (the Premises) under Part V of the *Environmental Protection Act 1986* (EP Act). The Premises is situated within the Shire of Northampton, approximately 35 kilometres south of the town of Kalbarri.

On 02 August 2024, the applicant applied for a works approval under section 54 of the EP Act. This application seeks authorisation to:

- **Category 8 – Mineral sand mining or processing:**
  - Construct, commission and operate (under time-limited operation [TLO]) the Dry Separation Plant (DSP) upgrade including rotary dryer and baghouses; and
  - Upgrades to the Wet Concentration Plant (WCP).
- **Category 89 – Putrescible Landfill Site:**
  - Construct and operate (under TLO) a Class II putrescible landfill site.
- **Category 62 – Slimes Transfer Storage Area:**
  - Construct and operate (under TLO) a bunded storage area for dried clay slimes to facilitate the transfer of slimes for beneficial use as an agricultural lime and potential land trials.

The prescribed premises boundary is depicted in Figure 1, with a detailed site layout showing the location of the proposed expansion infrastructure shown in Figure 2.

The scope of the works approval application was amended during the assessment phase of the application process following findings obtained during a site inspection undertaken by the Department of Energy, Mining, Industry Regulation and Safety (DEMIRS) on 12 November 2024. The applicant had initially sought approval for the construction and TLO of six additional solar drying ponds on top of the Sand Tailings Storage Area (STSA) and the conversion of the STSA from a temporary stockpiling area to a permanent landform.

The applicant confirmed that this infrastructure had already been constructed prior to it being assessed by the department. The department does not support the retrospective approval of activities under a works approval; therefore, these components have been excluded from the scope of this assessment and will not be considered further.

The applicant submitted a Licence amendment application in May 2024 which included provision for solar drying ponds within the STSA. Licence L9440/2024/1 was issued on 16

December 2024 and includes conditions permitting the solar drying ponds within the STSA and imposes associated management controls.

The applicant understands that a permanent STSA has not been assessed by the Department, and that the current commitments for future rehandling of this landform continue to apply. The applicant will commence additional studies to support conversion of the STSA to a permanent landform and will submit required approval applications for this activity in the future.

The Premises relates to categories 8, 89 and 62 and assessed production / design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in Works Approval W6958/2024/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in Works Approval W6958/2024/1.

The Premises also includes wind turbines located on general purpose lease L70/178 that are managed and regulated under the Windfarm Mining Proposal Reg ID 58732 under the *Mining Act 1978* (Mining Act). It should be noted that the department does not regulate the operation of theses wind turbines, however, any potential noise emissions must comply with the assigned noise levels in the *Environmental Protection (Noise) Regulations 1997*.

The Premises is currently authorised under existing Licence L9440/2024/1 to process up to 8,400,000 tonnes per annum (tpa) of heavy mineral sands (Category 8).

2.3 Part IV of the EP Act

A third party submitted a Section 38 referral for the original proposal under Part IV of the EP Act on the 07 September 2021. The proposal was for the clearing of up to 161 hectares (ha) of native vegetation for the progressive development of above-groundwater mine pits which will be progressively backfilled and rehabilitated with processed sands and waste. A footprint of no more than 155 ha within a 421 ha development envelope was required for the associated processing infrastructure for the project including but not limited to the tailing's storage facility, site access road and borefield.

On 06 July 2022, the Environmental Protection Authority (EPA) determined under section 38G(1) of the EP Act that the proposal will not to be assessed under Part IV of the EP Act. The EPA concluded that the potential environmental impacts of the proposal including the clearing of native vegetation, processing activities are not so significant to warrant a formal assessment due to the impacts being mitigated and regulated under existing regulatory approvals. Section 2.4 below outlines the other regulatory approvals which are in-place for the project.

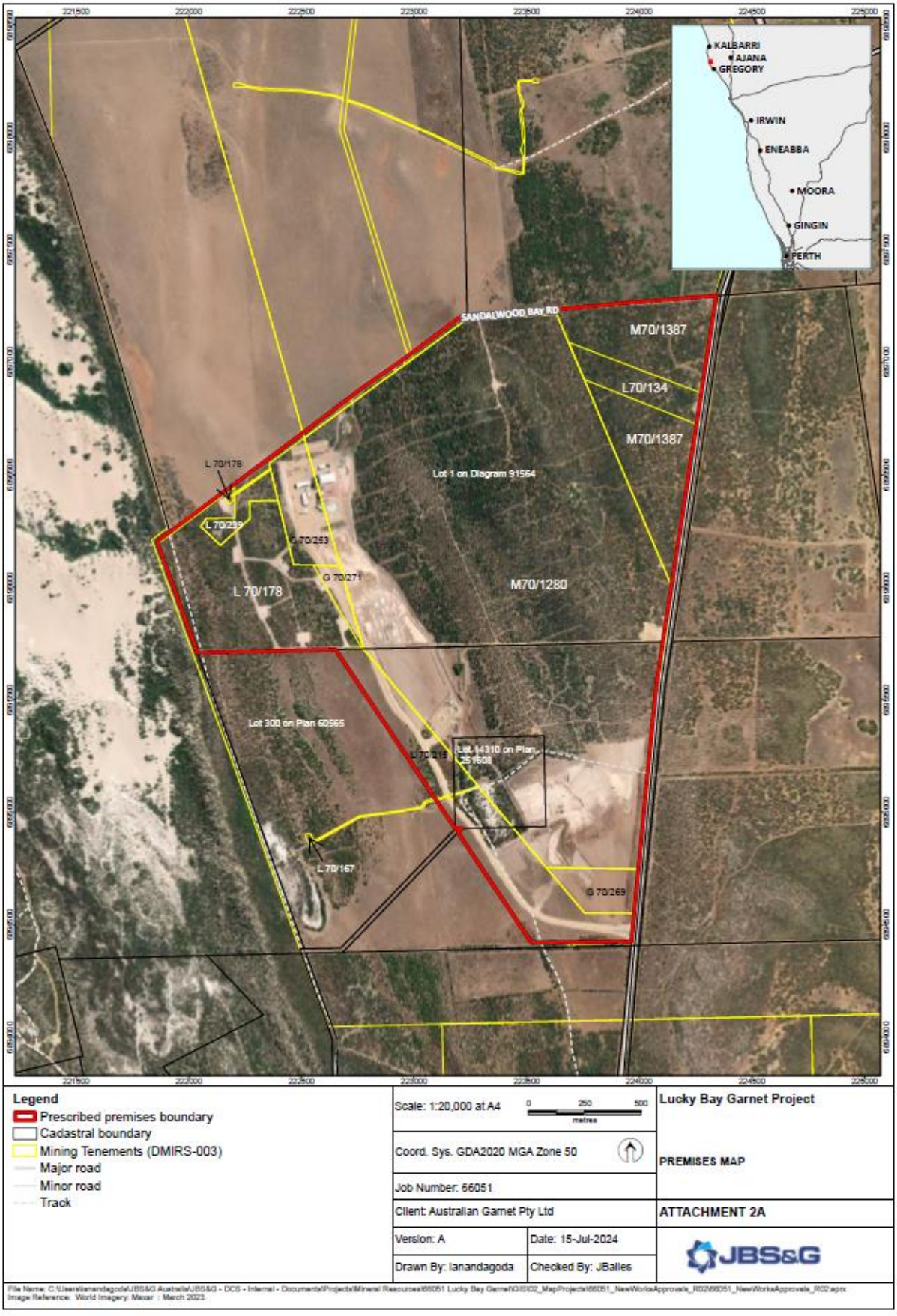

Figure 1: Map of the boundary of the prescribed premises

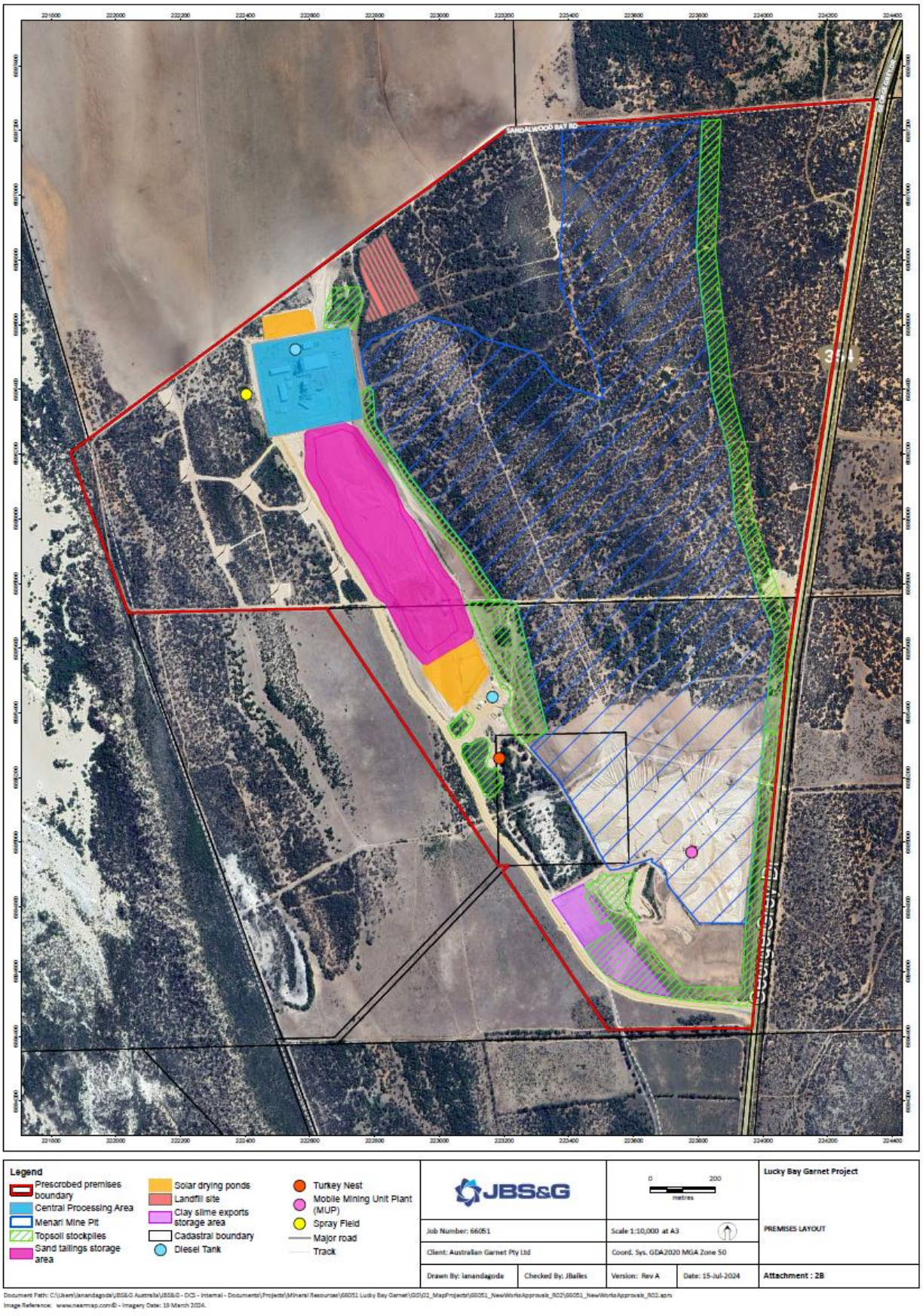

Figure 2: Premises layout map showing locations of key infrastructure

2.4 Other regulatory approvals

Regulatory approvals under the EP Act and Mining Act were granted for the project in 2010 to the previous occupier, Altura Mining Pty Ltd (Altura), through its subsidiary company Australian Garnet Pty Ltd. However, the project did not immediately proceed due to market conditions.

The applicant acquired the Australian Garnet portfolio in 2014 from Altura and completed an updated feasibility study, which identified optimisation to the design, extent, and operating parameters of Altura's original proposal. Approval under the Mining Act was subsequently sought and approved for the expansion; however, the EP Act approval expired in 2016. A new works approval application was submitted to the department on 19 November 2018 and was issued on 29 April 2019; works approval W6214/2019/1.

Other regulatory approvals related to the Premises are outlined in Table 1 below.

Table 1: Regulatory approvals

Legislation	Number	Approval and / or status
Mining Act 1978	Reg ID 102866(2)	The following Mining Proposals (MPs) and Mine Closure Plans (MCPs) have been approved for the premises: • Reg ID 55347 (MP/MCP) approved on 23 October 2015; • Reg ID 58732 approved on 16 March 2016 for the windfarm on tenement L70/178; • Reg ID 97057 approved on 30 June 2021; • Reg ID 102866 approved on 27 September 2022 to amalgamate and replace previously approved MPs (Reg ID: 55347, 58732, and 97057). An updated MP application was submitted on 4 October 2024 and is under assessment to seek approval for the additional activities and variations. An updated MCP was submitted on 4 October 2024 that accompanies the MP and detailed how disturbance will be rehabilitated as required by tenement conditions set under the Mining Act.
Mining Act 1978	Reg ID 58732	MP for the Windfarm on L70/178 approved on 22 February 2016.
EP Act – Section 51(E) (Native Vegetation)	CPS 3891/5, CPS 8358/3, and CPS 9057/1	• Clearing permit CPS 3891/5 was approved on 7 September 2021 for 90 hectares (ha) within the northern half of M70/1280 and L70/134. • CPS 9057/1 approved on 13 July 2021 for 71 ha within the southern half of M70/1280 and tenements G70/253, L70/178, and L70/215. • CPS 8353/3 first approved in June 2019, and most recently amended on 15 February 2024, for 5.24 ha on L70/178 and G70/253. An additional amendment is being sought for clearing of approximately 0.58 ha. • A Clearing Permit application may be required for the mining of Menari North areas in M70/1387 in the future and will be sought, as required.
Rights in Water and Irrigation Act 1914 (RIWI Act)	GWL170860(6)	• Approved 5C groundwater licence (GWL) for 2.015 gigalitres (GL) per year. An application for an increase in groundwater allocation has been made to the department for assessment. The

Legislation	Number	Approval and / or status
		application was submitted in September 2020. The department requested a H3 Hydrogeological Report that was not available at the time and the application was put on hold. The 5C amendment application was recommenced and included correspondence with the department in August and September 2024 to prepare the required hydrogeology investigations.
Radiation Safety Act 1975 (RS Act)	Reg No. RS 78/2022 3536 RM-221/474302	Risks to human health and the environment from radiological materials are jointly managed by Department of Energy, Mines, Industry Regulation, and Safety (DEMIRS) and the Radiological Council of WA. As the premises produces non-magnetic material that contains Naturally Occurring Radioactive Material (NORM) above threshold concentrations, the material is regulated under the RS Act. A Radiation Management Plan (RMP) for the premises has been assessed and approved by DEMIRS. The RMP outlines the management measures required to ensure worker and public radiation exposures are managed in accordance with the legislation.
Dangerous Goods Safety Act 2004	DGS022910	The Dangerous Goods licence was issued on 14 July 2022 and expires on 14 July 2027.
Health Act 1911	-	Permit to install and operate apparatus for the treatment of sewage granted.
Local Government Act 2011	-	Wastewater disposal application submitted and approved by the Shire of Northampton.

2.5 Premises description

Operational activities

The mining and processing operations will incorporate conventional dry mining, followed by wet separation to produce a heavy metal concentrate that contains garnet using conventional gravity separation. By design, the mine does not intersect the groundwater table, which is mostly below the basement of the resource. Groundwater does intersect the resource in limited areas of the deposit, however these are only small in size and will be excluded from mining, to avoid the requirement of dewatering activities. Further processing in the Mineral Separation Plant (MSP) which uses magnetic separation and screening techniques, upgrades the separated concentrate to produce high grade garnet, ilmenite and non-magnetic mineral products. A schematic of the Premises operational activities is showing in Figure 3 below.

The Premises will operate 24 hours a day, 365 days a year. Mining operations which include civil and earthmoving activities will be undertaken Monday to Saturday from 7am to 7pm, and Sunday and Public Holidays 9am to 7pm. Processing operations which includes the Central Processing Area (CPA), DSP, generators, Mobile Mining Unit Plant, Production bores, pumps, pipelines and mobile equipment will be undertaken in 12-hour shifts from Monday to Sunday (including Public Holiday's).

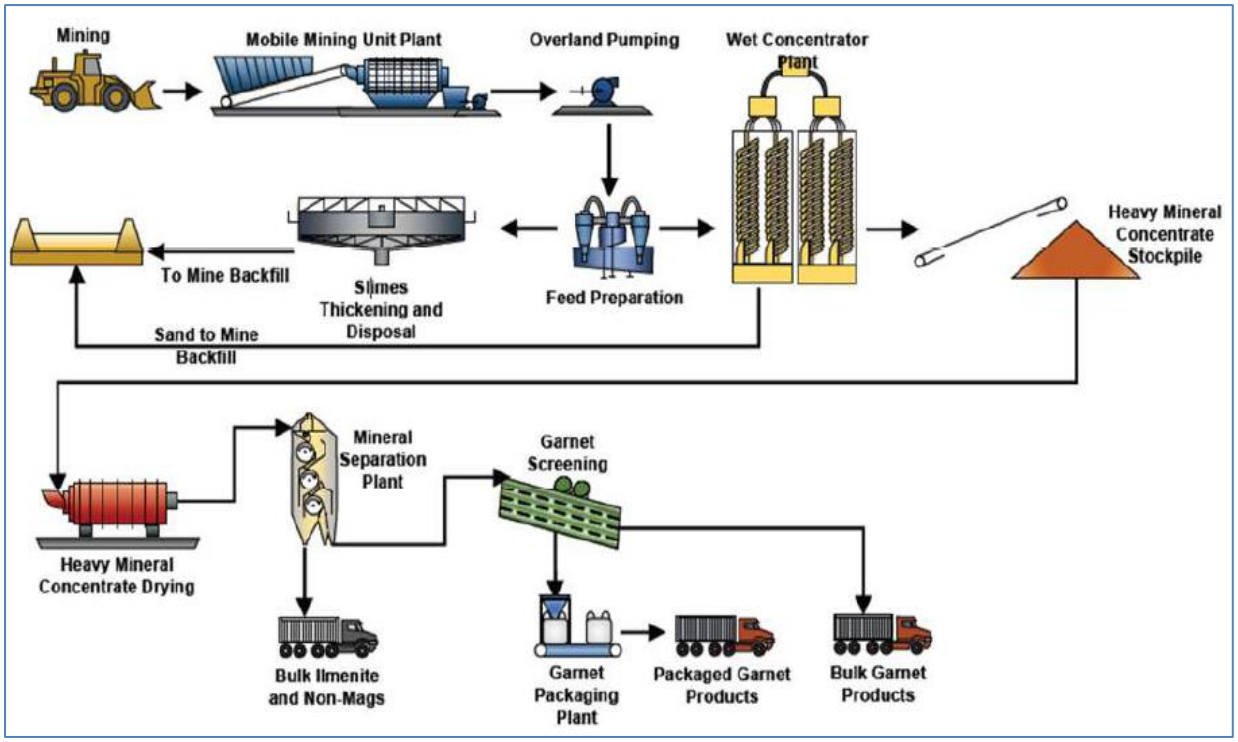

Figure 3: Operational activities flow diagram.

2.6 Description of proposed activities

2.6.1 Existing processing plant upgrades

The applicant is proposing to upgrade the existing processing plant infrastructure that is located in the Central Processing Area (CPA) to improve process efficiency, product quality and water recovery. The upgrades are in the form of the following components which are illustrated in Figure 4:

Wet Concentrator Plant (WCP)

The Wet Concentrator Plant (WCP) that separates out waste tailings and produces the stockpiled heavy mineral concentrate (HMC) through several processes will have the following upgrades:

- The existing constant density (CD) tank that is used for the desliming (separation of slimes) and slimes thickening (addition of flocculant to settle out solids and recycle process water) processes is being replaced with an upgraded CD tank design, an upgraded cyclone pack and relocation of the current CD tank transfer pump onto the new CD tank.
- The attrition circuit of the WCP used to remove calcrete coating from the HMC will be modified to relocate the two existing cells into the new structure with two cells to be installed in parallel in the same structure (a total of four cells compared to the original design of six cells).
- A new cyclone and dewatering screen will be installed on each of the new parallel attrition feed streams to improve the filtering and product washing process to rinse excess chloride from the HMC.

Dry Separation Plant

The stockpiled HMC from the WCP is further processed on-site at the DSP which comprises of a bin feeding into a diesel fired rotary dryer by conveyor. The exhaust from the dryer is drawn

through a baghouse with reverse pulse filter cleaning by an induced draft fan. The gas is separated from the dust by the fabric bags and is vented to atmosphere via a 3 m high muffled stack, with the dust discharged and collected in drums or kibbles and returned to the WCP. The DSP includes a second baghouse that reduces dust emissions produced from the operation of the DSP, whilst the primary baghouse reduces emissions from the diesel fired rotary dryer.

- An additional dryer and baghouse will be installed to support the additional equipment in the form of screens, magnets and air tables into the DSP. The Environmental Noise Assessment report prepared by Herring Storer Acoustics notes that the dryer and baghouse are to be replaced with a larger unit that will comply with existing works approval requirements. It is unclear based on these comments whether a third rotary dryer stack and baghouse are proposed for installation, or if the larger will replace the existing diesel fired rotary dryer. It is noted on Page 5 of the Environmental Noise Assessment by HSA that the existing dryer is undersized and constrains the dry plant capacity which has an approved throughput of 47 tonnes per hour under the current works approval.

The applicant advised upon review of the draft Works Approval and Decision Report that the larger dryer will be installed adjacent to the previous dryer. Only one dryer can operate at a time, and the previous dryer will remain as a standby only. The larger dryer will not improve efficiencies but will operate closer to the approved throughput.

Dried material discharged from the dryer is screened to remove oversize material then delivered to the magnetic circuit via the primary screen to separate into coarse and fine heavy mineral streams. Each of these streams are fed through two triple stage Rare Earth Drum (RED) magnets to produce magnetic (ilmenite), paramagnetic (garnet), and non-magnetic products (silica sands with leucoxene, rutile and zircon) preformed on a drum and retreatment of selected products on more selective rolls. To improve product quality, the following equipment will be installed into the DSP:

- A new coarse unit to process the coarse primary screen fraction across the RED magnet.
- Fines magnet recirculation to re-treat HMC to reduce magnetics and non-magnetics products.
- A course magnet bypass to direct the primary screen coarse magnet underflow material direct to the secondary coarse screen unit.
- REDs on the final paramagnetic product (garnet concentrate) underflow screens prior to the final product silos.
- Air tables on final product streams prior to the silos.

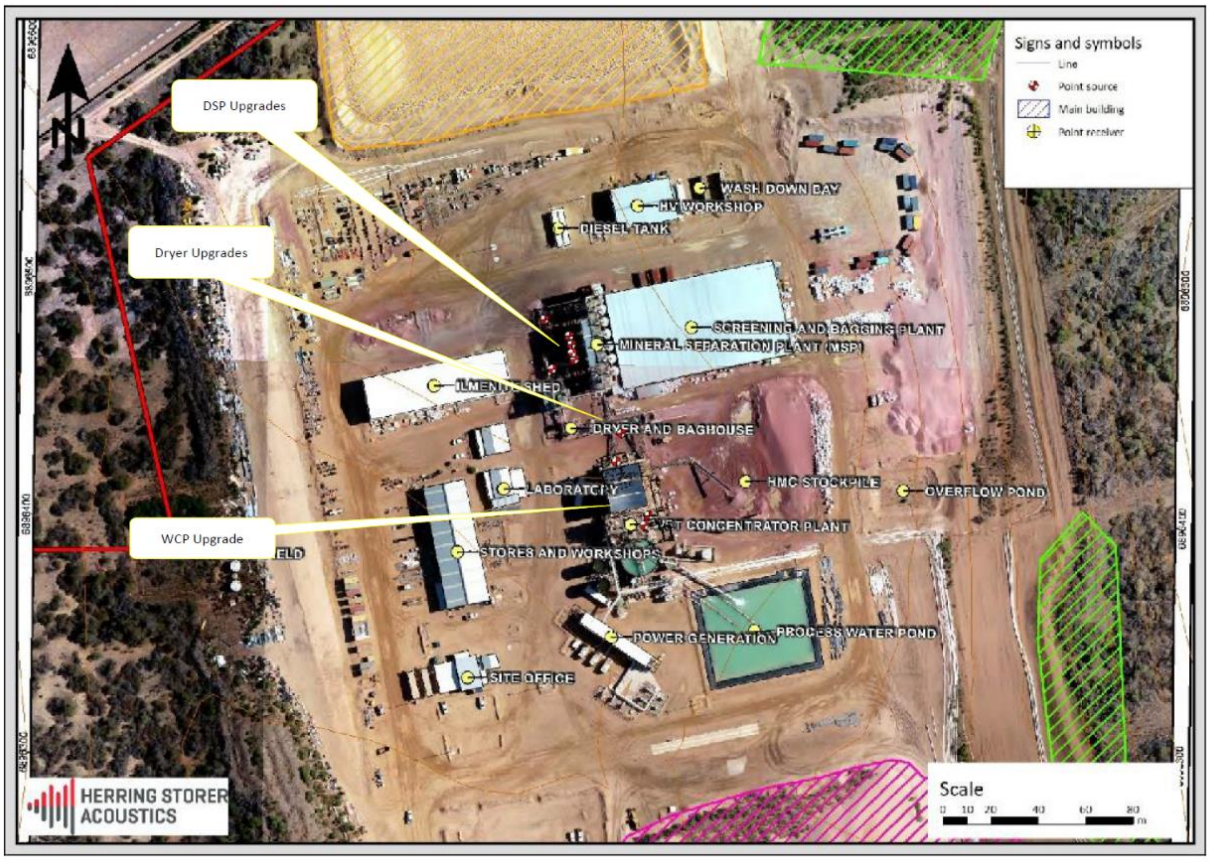

Figure 4: Proposed process plant upgrades in the CPA (Source HSA, 2024)

2.6.2 Class II Putrescible Landfill Site (Category 89 activities)

The applicant is proposing to construct a Class II Putrescible Landfill Site (landfill site) within the location depicted in Figure 2 at the Premises with a production capacity of 500 tonnes per annum. A mixed putrescible waste stream will be accepted at the landfill site for the following:

- putrescible material;
- wood and pallets;
- cardboard;
- calico bags, plastics, and conveyor belts;
- steel and general construction waste; and
- concrete materials.

The applicant notes that domestic type general waste (for example, from kitchen and office areas) generated on-site will continue to be disposed of off-site by a licensed waste contractor to a licensed waste disposal facility.

Construction of the landfill site will involve the excavation of dedicated trenches that will each have a maximum size of approximately 236 m long, 20 m wide and 2 m deep (Figure 5). Each trench will have a single ramp entry point, with one trench active at any given time. The landfill site will be fenced to contain incidental windblown rubbish and exclude unauthorised personnel and animals from accessing the landfill site area. Signage will be displayed at the landfill site to ensure staff onsite are aware of the types of wastes acceptable at the landfill site.

The applicant has indicated that the landfill site will be constructed and operated in accordance with the *Environmental Protection (Rural Landfill) Regulations 2002.*

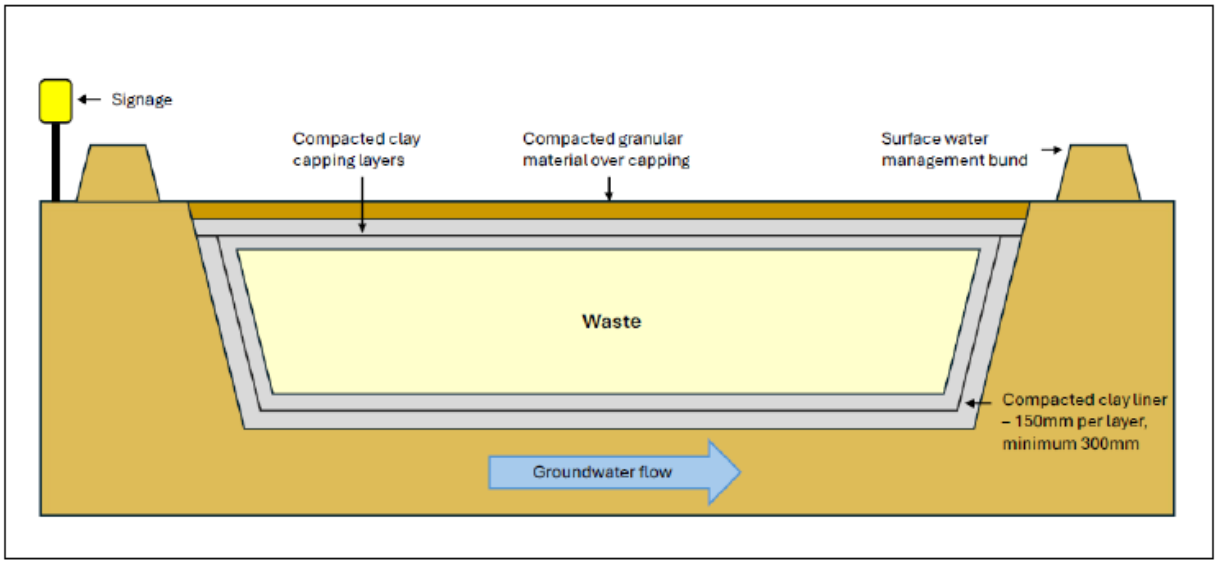

Figure 5: Conceptual landfill cell design

2.6.3 Slimes Transfer Storage Area (Category 62 activities)

The applicant has identified that dried clay slimes are beneficial in use as an agricultural lime, including in potential land trials. Therefore, the applicant is proposing to construct a 3.235 ha bunded pad for the storage and stockpiling of a portion of the dried clay slimes that have been excavated from the solar drying ponds prior to facilitating the transfer of limes. The stockpiled clay slimes will be crushed and flayed on a campaign basis prior to it being loaded onto trucks by a front-end loader and taken off site. The proposed location of the Clay Slimes Storage Area is depicted in Figure 2 of this report.

The reuse of a waste-derived materials off-site is not within the scope of this assessment. The applicant should give regard to the guidance outlined in the *Fact Sheet: Assessing whether material is waste* (DWER, undated) in relation to the relevant factors that should be considered in an assessment of whether material is 'waste'.

3. Risk assessment

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

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

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction, commissioning and operation (including time limited operations) which have been considered in this decision report are detailed in Table 2 below. Table 2 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 2: Proposed applicant controls

Sources	Emission	Potential pathways	Proposed controls
Construction			
Category 8: Mineral sands mining or processing, Category 89: Putrescible Landfill Site and Category 62: Slimes Transfer Storage Area			
Upgrades to the Wet Concentration Plant (WCP) and Dry Separation Plant (DSP) Construction of trenches for the putrescible landfill site Construction of bunded, hardstand pad for Slimes Transfer Storage Area	Dust associated with machinery and vehicle movements Dust lift-off from stockpiles	Air / windborne pathway	The applicable controls from the existing licence L9440/2024/1 that are suitable for managing the risks with dust emissions during construction include: • Existing condition 8 (Table 6) which outlines dust control requirements and management actions for topsoil stripping, use of water carts, application of dust suppressants, implementation of a Traffic Management Plan and cessation of activities where dust management measures have not prevented dust lift-off; and • Existing condition 14 (Table 9) which requires ambient air quality monitoring for deposited dust and PM_{10} high volume sampler near Resident 1. In addition to the above controls required by the licence, the applicant has also proposed the following controls to minimize dust emissions during construction: • The proposed works are short-term (six-month duration) and will occur during day-time hours only.
Upgrades to the Wet Concentration Plant (WCP) and Dry Separation Plant (DSP) Construction of trenches for putrescible landfill site Construction of	Noise associated with construction works	Air / windborne pathway	The applicable controls from the existing licence L9440/2024/1 that are suitable for managing the risks with noise emissions during construction include: • Existing condition 2 (Table 2) which specifies mining operations including civil and earthmoving activities using mobile equipment and topsoil and overburden removal are to occur between Monday to Saturday 7am to 7pm and Sunday and Public Holidays 9am to 7pm (with the exception of

Sources	Emission	Potential pathways	Proposed controls
bunded, hardstand pad for Slimes Transfer Storage Area			undertaking an Environmental Noise Assessment of mining operations during night time operations as required by Condition 22 of the licence); • Existing condition 9 (Table 7) requires the following noise control requirements and management actions for heavy earthmoving equipment (front-end loaders, dozer, excavator): ○ must use the quietest equipment reasonably available; ○ motors must be located in enclosed housings with sound-absorbing materials; mufflers used to manage exhaust noise; and baffles / loures used to control fan noise; ○ must use broadband reversing alarms (e.g., squawkers / quackers) on all earthmoving equipment instead of standard single frequency 'beepers'; and ○ mobile equipment must be equipped with flashing lights (to replace alarms) after dusk when headlights are in use. In addition to the above controls required by the licence, the applicant has also proposed the following controls to minimize noise emissions during construction: ○ the proposed works are short-term (six month duration) and will occur during day-time hours only. ○ equipment is to be maintained using a preventative maintenance program following the manufacturer's recommendations; ○ daily forecast and work planning to consider wind speed and wind direction. ○ implementation of the revised Australian Garnet Noise Management Plan with the following key controls applicable during construction; - control of noise at the source by maintaining and operating equipment within the premises to ensure optimum noise performance is achieved; - noise reduction on earthmoving

Sources	Emission	Potential pathways	Proposed controls
			equipment; and - preventative maintenance of equipment to reduce/prevent abnormal noise generation.
Commissioning and Operation (including Time Limited Operations)			
Category 8: Mineral sands mining or processing			
Operation of the WCP and DSP upgrade	Particulate emissions from the drying and classification of garnet concentrate in the DSP	Air / windborne pathway	The applicable controls from the existing licence L9440/2024/1 that are suitable for managing the risks with particulate emissions during DSP operation include: • Existing condition 3 (Table 3) relates to the operational requirements for the DSP; • Existing condition 8 (Table 6) which outlines dust control requirements and management actions requires for material handling, water carts/sprays, dust suppressants, stockpiles, open areas/laydown pads, implementation of a Traffic Management Plan and cessation of activities where dust management measures have not prevented dust lift-off; • Existing condition 14 (Table 9) which requires ambient air quality monitoring: ○ near Resident 1 for deposited dust on a monthly basis and ○ PM_{10} at the PM_{10} high volume sampler and the major ions, metals/metalloids and respirable crystalline silica at or near Resident 1. In addition to the above controls required by the licence, the applicant has also proposed the following controls to minimize particulate emissions during DSP operation include: • Implementation of the revised *Australian Garnet Dust Management Plan.*
Operation of the WCP and DSP upgrade	Rinsing of final garnet products	Direct discharge to land	The applicable control from the existing licence L9440/2024/1 that is suitable for managing the risks of saline washwater disposal during DSP operation include: • Saline water from the rinsing of final garnet concentrate must be transferred to the Process Water Pond.

Sources	Emission	Potential pathways	Proposed controls
	Noise associated with operation of DSP plant upgrade and vehicle movements Noise from exhaust stack of DSP	Air / windborne pathway	The applicable controls from the existing licence L9440/2024/1 that are suitable for managing the risks with noise emissions during operation include: • Existing condition 2 (Table 2) which specifies processing operations of the DSP are to occur between Monday to Sunday including Public Holidays in 12-hour shifts (with the exception of undertaking an Environmental Noise Assessment of mining operations during night time operations as required by Condition 22 of the licence); • Existing condition 9 (Table 7) requires the following noise control requirements and management actions for heavy earthmoving equipment (front-end loaders, dozer, excavator): ○ must use the quietest equipment reasonably available; ○ motors must be located in enclosed housings with sound-absorbing materials; mufflers used to manage exhaust noise; and baffles / loures used to control fan noise; ○ must use broadband reversing alarms (e.g., squawkers / quackers) on all earthmoving equipment instead of standard single frequency ‘beepers’; and ○ mobile equipment must be equipped with flashing lights (to replace alarms) after dusk when headlights are in use. • Existing condition 15 (Table 10) and condition 18 requires noise monitoring to be undertaken and investigation of any exceedances of the *Environmental Protection (Noise) Regulations 1997* (Noise Regulations) respectively; • Existing conditions 22, 23, 24 and 25 relates to the requirement for a noise assessment to be conducted in particular to nighttime mining operations and noise levels.
Category 89: Putrescible Landfill Site			
Putrescible waste disposed within	Odour	Air/windborne pathway	The applicant has proposed the following control to minimise odour emissions during operation of the landfill site:

Sources	Emission	Potential pathways	Proposed controls
the landfill site			○ Waste will be compacted and covered at least monthly.
Unloading and storage of material in landfill site Waste covering activities Vehicle movements	Dust	Air/windborne pathway	The applicant has not specified any controls.
Landfilling general waste	Windblown waste	Air/windborne pathway	The applicant has proposed the following control to minimise windblown waste during operation of the landfill site including: • The landfill site will be fenced and secured, when not in use; • No more than one cell will be in operation at any one time; • Waste will be covered at least weekly; • Windblown waste will be collected weekly and returned to the landfill site.
		Fauna directly accessing and scavenging waste	• The landfill site will be fenced and secured, when not in use; • The landfill site will be inspected regularly for fauna.
Disposal of putrescible waste within landfill site	Leachate	Seepage through base of landfill	The applicant has proposed the following control to minimise and manage leachate during operation of the landfill site including: • Landfill site must be lined with the following requirements: ○ Lined with dried clay fines as 150 mm compacted layers for each lift to a minimum of 300 mm thickness; ○ Liner material must be homogenous in nature and properties, with no sandy patches exceeding the liner specification or rocks retained on a 37.5 mm sieve. Any non-conforming liner material must be removed and replaced with confirming soil; ○ Liner must be a low-permeability barrier and constructed to control stored liquid leakage; and

Sources	Emission	Potential pathways	Proposed controls
			○ Soils used for the lining must conform to the design specification for an effective water retaining structure. Soils must be free from plant roots and reactive, soluble and organic matter. The liner material consists of an inert and insoluble blend of sand, clay and silt particles that meet the minimum criteria as stated in the *Water Quality Protection Note 27: Liners for containing pollutants using engineered soils* (Department of Water [DoW] 2014); • Landfill site will be designed to include a piped subsoil drainage system above the base liner with the following requirements: ○ Pipework must penetrate a sidewall of the proposed landfill with required measures undertaken to prevent seepage around the exterior of the pipework while maintaining the structural integrity of the embankment; ○ Underdrainage system must drain leachate by gravity to a collection sump; ○ Underdrainage system must be designed to include graded filter layers (for example, gravel, sand, geotextiles) to prevent siltation of pipes; ○ Sump must be sized to contain any leachate and directly capture rainfall for a 1:20 year, 24-hour storm event; and ○ Leachate in the sump must be collected by a suitably Licensed contractor for disposal at an off-site facility when the freeboard limit is reached. Any settled solids must be periodically removed. • Surface water shall be diverted raround the landfill trenches; • Waste will be covered at least weekly; • Landfill trenches to be located at least 100 m from any surface water body; and • Landfill trenches to be located 3 m above highest level of the water table

Sources	Emission	Potential pathways	Proposed controls
			aquifer at the Premises.
	Contaminated stormwater	Overland runoff during rainfall events	• Closed trenches will be graded to promote run-off; and • Surface water shall be diverted around the landfill trenches.
Category 62: Slimes Transfer Storage Area			
Stockpiling and crushing of dried clay slimes on the Slimes Transfer Storage Area prior to being transferred offsite	Dust lift-off from stockpile(s) of dried slimes	Air/windborne pathway	The applicant has not specified any controls. The controls from the existing licence L9440/2024/1 that are suitable for managing the risks with dust emissions during operation as discussed above will apply.
	Seepage of water entrained in the sand tails to groundwater	Seepage through base of the stockpile pad	The applicant has not specified any controls. Dry slimes will have a moisture content of approximately between 15 to 20 % before being placed on the bunded pad.
	Contaminated stormwater	Overland runoff and/or infiltration to groundwater	The applicant has not specified any controls. The hardstand area will be bunded to avoid ingress or egress of surface water during rain events.
	Noise associated with crushing of dried clay slimes	Air/windborne pathway	The applicant has not specified any controls. The controls from the existing licence L9440/2024/1 that are suitable for managing the risks with noise emissions during operation as discussed above will apply.

3.1.2 Receptors

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

Table 3 and Figure 6 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 3: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
Residential property (Receptor / resident 1)	• 1 km east from the premises boundary; • 2.5 km from the CPA; • 2.5 km from the landfill site; and • 1.9 km from the Slimes Transfer Storage Area.

Environmental receptors	Distance from prescribed activity
Lucky Bay campground (managed by Department of Biodiversity, Conservation and Attractions) (Receptor/ resident 2)	• Ranges from 0.83 km (camp sites) to 2.5 km (includes the Lucky Bay shacks, main campground, recreational area and ranger's station) south-west from the prescribed premises boundary; and • 2.5 km south-west from the CPA.
Residential property (Receptor/ resident 3)	• 2.5 km north-east from the prescribed premises boundary; • 3.5 km from the CPA; • 3.7 km from the landfill site; and • 4.7 km from the Slimes Transfer Storage Area.
Threatened / Priority Ecological Communities *Subtropical and Temperate Coastal Saltmarsh*	The Threatened Ecological Community is listed a vulnerable under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act). The TEC spans across six State jurisdictions with the most appropriate northern limit on the west coast as Shark Bay. It should be noted that the EPBC Act Conservation Advice for Subtropical and temperate coastal saltmarsh (DSEWPC 2013) states that "Currently, Queensland, Victoria, Tasmania, South Australia and Western Australia do not list this ecological community." In addition, the PEC Subtropical and temperate coastal saltmarsh P3 is synonymous to the TEC coastal saltmarsh, however, this PEC does not occur in the vicinity of the premises.
Utcha Well Nature Reserve DBCA managed lands	Approximately 0.8 km south of the premises boundary.
Hutt Lagoon System National Important Wetland (Criteria 1, 6)	Approximately 0.8 km south of the premises boundary (northern most portion of the lagoon system).
Surface water	Limited to shallow overland flow during and after heavy rainfall events. Temporary shallow ponding will occur in local depressions, with surface flow generally infiltrating or evaporating within the Greenough River basin coastal subcatchment.
Mappa lake – seasonal lake / inundated area	Approximately 0.95 km west of the premises boundary
Ocean	Approximately 1.3 km west of the premises boundary.
Groundwater	The Premises is underlain by a highly permeable unconfined aquifer within the unconsolidated calcarenite sediments of the Superficial Formations. Hydraulic conductivities of the superficial formations aquifer range between 40 m to 80 m/day (Darkwater Consulting, 2024). Groundwater levels across the site range from 10 to 20 metres below ground level (mbgl), or between 1 and 2 metres Australian Height Datum (mAHD) (Darkwater Consulting, 2024). Groundwater flow is in a westerly to south-westerly direction, with discharge occurring along the coastline.

Environmental receptors	Distance from prescribed activity
Groundwater	Groundwater quality ranges between brackish to saline (1500 to 7,000 mg/L) with salinity generally increasing laterally towards the coastline. Halfway Bay (Luck Bay) campgrounds well, approximately 0.8 km west from the premises boundary, but has been identified as non-potable water
Other groundwater users	Selected third-party groundwater bores surrounding the Premises also use the licensed groundwater resource. Most bores are for the purposes of stock watering. One bore is held by MRWA to supply water for road construction and maintenance activities. Yanganooka Well bore is in the Yanganooka Reserve, where there are no stock or domestic users. The nearest bore in the superficial aquifer is 1.4 km from the nearest superficial Production Bore PB6. The nearest Tumblagooda bore is the Neumann Bore located 1.3 km from TPB2.
<u>Threatened / Priority fauna</u> 1. Zuytdorp slider (*Lerista humphriesi*) P3 2. Peregrine falcon (*Falco peregrinus*) Other specially protected fauna 3. Fork-tailed swift (*Apus pacificus*) Migratory species	1. Recorded within the premises boundary. 2. The species has previously been recorded in the vicinity of the of the premises. 3. This species is predominately aerial with several records to the south of the premises near Port Gregory with the species likely to fly over the premises.
4. Grey falcon (*Falco hypoleucos*) Vulnerable	4. This species may utilise habitats, forage and fly over the premises. (Onshore Environmental 2022a)
<u>Threatened and Priority Flora</u> 1. *Caladenia bryceana* subsp. *cracens* Endangered 2. *Comesperma rhadinocarpum* P3 3. *Melaleuca huttensis* P3 4. *Frankenia confusa* P4 5. *Stenanthemum divaricatum* P3 6. *Anthocercis intricate* P3 7. *Bossiaea calcicole* P3	1. In the vicinity of the premises boundary. 2. Within 1 km southwest outside the premises boundary. 3. Within the premises boundary in areas not being cleared. 4. Within the premises boundary. 5. Within 1 km east outside the premises boundary. 6. Within and outside the premises boundary. 7. Within and outside the premises boundary. (Onshore Environmental 2022b).
<u>Aboriginal and other heritage sites</u> Registered Site - Site ID 4647 – Lucky Bay Lodged - Site ID 29011 – Balline 1	Site ID 4647 – approximately 600 m north-west of the prescribed premises boundary. Site ID 29011 – approximately 300 m north-east of the prescribed premises boundary.

Environmental receptors	Distance from prescribed activity
Aboriginal and other heritage sites Lodged - Site ID 29012 – Balline 2 Lodged - Site ID 29013 – Balline isolated artefacts	Site ID 29012 – approximately 1.1 km north of the prescribed premises boundary. Site ID 2901 – within the prescribed premises boundary and approximately 22 m north of the expanded pit boundary.

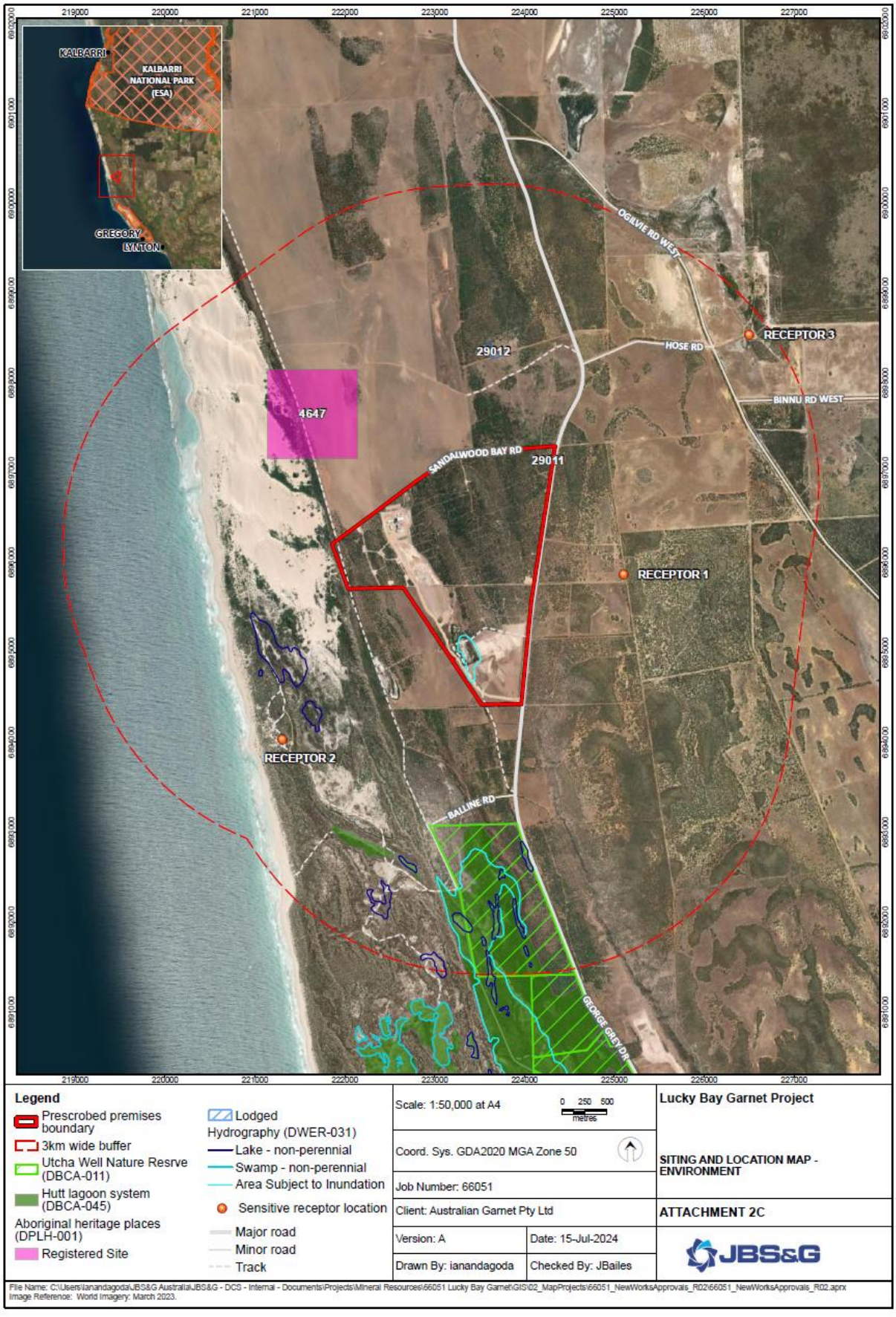

Figure 6: Distance to sensitive receptors

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source 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 applicant 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 applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 4.

Works approval W6958/2024/1 that accompanies this decision report authorises construction and time-limited operations. The conditions in the issued works approval, as outlined in Table 4 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the ongoing operation of the premises i.e. Category 8, 89 and 62 activities. A risk assessment for the operational phase has been included in this decision report, however licence conditions will not be finalised until the department assesses the licence application.

Table 4: Risk assessment of potential emissions and discharges from the premises during construction, commissioning and operation

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Construction								
Upgrades to WCP and DSP Construction of trenches for putrescible landfill site Construction of bunded, hardstand pad for Slimes Transfer Storage Area	Dust associated with machinery and vehicle movements Dust lift-off from stockpiles	Air/windborne pathway causing amenity/health impacts	Closest rural / residential properties located less than 2 km of premises Users of George Grey Drive and the Halfway Bay Camp	Refer to Section 3.1	C = Slight L = Unlikely **Low Risk**	Yes	Condition 1 (Table 1): Design and Construction/installation requirements **Conditions 2 and 3**: Submission of an Environmental Compliance Report	Minimal dust emissions may be generated from site preparation works including earthworks, equipment placement, vehicle movements, and stormwater management infrastructure during the construction period. The limited scale of the construction works /placement that will occur over a short-term period (six months) coupled with the implementation of the existing controls of Licence L9440/2024/1 are sufficient to mitigate any potential impacts on sensitive receptors from dust emissions. Additional regulatory controls are not required.
		Air/windborne pathway causing impacts to vegetation health	Nearby vegetation including threatened and priority flora Nearby aboriginal and heritage sites Utcha Well Nature Reserve Hutt Lagoon System Subtropical and Temperate Coastal Saltmarsh	Refer to Section 3.1	C = Minor L = Possible **Medium Risk**	Yes		
	Noise associated with construction works	Air / wind pathway potentially causing amenity / health impacts	Rural / residential properties located less than 2 km of premises Users of George Grey Drive and the Halfway Bay Camp	Refer to Section 3.1	C = Slight L = Unlikely **Low Risk**	Yes	Condition 1 (Table 1): Design and Construction/installation requirements **Conditions 2 and 3**: Submission of an Environmental Compliance Report	It is expected that receptors will not be significantly impacted by noise emissions noting the short-term duration of the works and placement of the mobile crushing and screening plant equipment and that construction/site works will be conducted during daytime hours.

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
								The EP Noise Regulations apply.
Commissioning and Operation (including time-limited-operations operations)								
Category 8: Mineral sands mining or processing Operation of WCP and DSP upgrade	Particulate emissions from the drying garnet concentrate	Air / wind dispersion potentially causing amenity / health impacts	Rural / residential properties located less than 2 km of premises Users of George Grey Drive and the Halfway Bay Camp	Refer to Section 3.1	C = Minor L = Rare **Low Risk**	Yes	Condition 5 (Table 2): Environmental Commissioning requirements for the DSP upgrade Conditions 6 and 7: Environmental Commissioning reporting requirements Condition 10 (Table 3): Infrastructure and equipment requirements during Time Limited Operations **Condition 13 (Table 6):** requirements for emissions to air from the three baghouse locations at the DSP during time limited operations. **Condition 14:** Submission of Time Limited Operations Report. **Condition 15:** Time Limited Operations reporting requirement	The Delegated Officer considers that the existing regulatory controls on the Licence L9440/2024/1 and additional controls proposed by the applicant as outlined in Section 3.1 are sufficient in managing particulate emissions from the drying garnet concentrate. The applicant has proposed to undertake environmental commissioning to verify that the dust emissions from the baghouse and exhaust stack of the DSP upgrade are lower than the specified guidelines. The environmental commissioning and reporting requirements have been conditioned on the Works Approval in accordance with the applicant's Environmental Commissioning Plan. The monitoring of air emissions during time limited operations for the additional rotary dryer and bag house on the DSP during time limited operations has also been conditioned on the Works Approval.
	Rinsing of final garnet	Direct discharge	Nearby vegetation	Refer to	C = Moderate	Yes	N/A	The Delegated Officer

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
	products	to land through disposal of saline wash water potentially causing soil, surface water and groundwater contamination	including threatened and priority flora Soil Surface water Groundwater	Section 3.1	L = Unlikely **Medium Risk**			considers that the existing regulatory control on the Licence L9440/2024/1 for requiring the discharge of saline wash water to be transferred to the Process Water Pond is sufficient for managing this risk event.
	Noise associated with operation of WCP and DSP plant upgrade and vehicle movements	Air / wind pathway potentially causing amenity / health impacts	Rural / residential properties located less than 2 km of premises Users of George Grey Drive and the Halfway Bay Camp	Refer to Section 3.1	C = Moderate L = Possible **Medium Risk**	Yes	Condition 1 (Table 1): Design and Construction/installation requirements. Condition 10 (Table 3): Infrastructure and equipment requirements during time limited operations. **Condition 14:** Submission of Time Limited Operations Report. **Condition 15:** Time Limited Operations reporting requirement	See Section 3.3 – detailed risk assessment
Category 89: Putrescible Landfill Site Disposal of putrescible waste at landfill site	Odour (waste handling and filling activities)	Air / wind pathway potentially causing amenity impacts	Rural / residential properties located 2.5kms from the landfill site Users of George Grey Drive and the Halfway Bay Camp	Refer to Section 3.1	C = Minor L = Rare **Low Risk**	No	Condition 1 (Table 1): Design and Construction/installation requirements. Condition 10 (Table 3): Infrastructure and equipment requirements during time limited operations. Condition 11 (Table 4), 12, 13 and 14: Waste acceptance requirements. **Condition 12 (Table 5)**	Noting the closest sensitive residential receptor is located 2.5 km from the landfill site and in consideration of the applicant's proposed controls as described in Section 3.1, the Delegated Officer considers that these measures are sufficient for managing odour and have been conditioned on the Works Approval. Noting the landfill site is for a mixed putrescible landfill stream, the Delegated

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
							Waste cover requirements. **Condition 14:** Submission of Time Limited Operations Report. **Condition 15:** Time Limited Operations reporting requirement	Officer has specified the cover depth to be 300 mm to be consistent with the cover requirements for similar landfills and ensure no waste is exposed.
	Dust (unloading and storage of landfill material, waste covering activities and vehicle movements)	Air / wind pathway potentially causing amenity / health impacts	Rural / residential properties located 2.5kms from the landfill site Users of George Grey Drive and the Halfway Bay Camp	The applicant has not specified controls for dust emissions during operation.	C = Slight L = Possible **Low Risk**	N/A	Condition 10 (Table 3): Infrastructure and equipment requirements during time limited operations. **Condition 13 (Table 5):** Waste cover requirements. **Condition 14:** Submission of Time Limited Operations Report. **Condition 15:** Time Limited Operations reporting requirement	The applicant has not specified controls for dust emissions during operation. However, noting the distance to the nearest rural/residential property, the risk of dust impacting on human receptors has been determined to be 'low'.
		Air / wind pathway potentially causing impacts to native vegetation, threatened and priority flora.	Nearby native vegetation including threatened and priority flora	The applicant has not specified controls for dust emissions during operation.	C = Slight L = Unlikely **Low Risk**	N/A	Condition 10 (Table 3): Infrastructure and equipment requirements during time limited operations. **Condition 11 (Table 4):** Waste acceptance/ disposal requirements. **Condition 12 (Table 5):** Waste cover requirements. **Condition 14:** Submission of Time	The applicant has not specified controls for dust emissions during operation. However, the Delegated Officer has taken into consideration the applicant's proposed control of covering waste on a weekly basis which would reduce the risk of dust emissions impacting upon nearby native vegetation and conservation significant flora. The waste cover requirements condition that requires

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
							Limited Operations Report. **Condition 15:** Time Limited Operations reporting requirement	waste to be covered with Type 1 inert waste or clean fill material to a depth of 300mm has been included on the works approval to mitigate this risk.
	Windblown waste	Air/windborne pathway resulting in loss of amenity and nuisance impacts.	Rural / residential properties located 2.5kms from the landfill site Users of George Grey Drive and the Halfway Bay Camp	Refer to Section 3.1	C= Slight L = Possible **Low Risk**	Yes	Condition 1 (Table 1): Design and Construction/installation requirements Condition 10 (Table 3): Infrastructure and equipment requirements during time limited operations. **Condition 11 (Table 4):** Waste acceptance / disposal requirements. **Condition 12 (Table 5):** Waste cover requirements. **Condition 14:** Submission of Time Limited Operations Report. **Condition 15:** Time Limited Operations reporting requirement	The applicant's proposed controls have been deemed to be sufficient to manage this risk event and have been conditioned within the works approval as construction / operational requirements as per the department's *Guideline: Risk Assessments*.
		Fauna directly accessing and scavenging waste impacting health of fauna and encouraging increase of introduced pest species	Conservation significant and local fauna utilising the area	Refer to Section 3.1	C= Minor L = Unlikely **Medium Risk**	Yes	Condition 1 (Table 1): Design and Construction/installation requirements Condition 10 (Table 3): Infrastructure and equipment requirements during time limited operations.	The Delegated Officer has determined that the applicant's controls outlined in Section 3.1 including maintaining a fenceline around the landfill site, covering waste on a weekly basis with inert or cleanfill material and regular inspections are likely to be sufficient at mitigating the

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
							Condition 11 (Table 4): Waste acceptance / disposal requirements. **Condition 12 (Table 5):** Waste cover requirements. **Condition 14:** Submission of Time Limited Operations Report. **Condition 15:** Time Limited Operations reporting requirement	risk of potential impacts to fauna. The applicant's controls have been conditioned on the Works Approval as regulatory controls.
	Landfill leachate	Discharge to land – seepage of leachate into soil / groundwater causing contamination and reduced quality of vegetation health.	Groundwater Nearby native vegetation including threatened and priority flora	Refer to Section 3.1	C= Moderate L = Unlikely **Medium Risk**	Yes	Condition 1 (Table 1): Design and Construction/installation requirements Condition 10 (Table 3): Infrastructure and equipment requirements during time limited operations. **Condition 11 (Table 4):** Waste acceptance / disposal requirements. **Condition 12 (Table 5):** Waste cover requirements. **Condition 14:** Submission of Time Limited Operations Report. **Condition 15:** Time Limited Operations reporting requirement	As the Premises is located on a dune system containing soils that are highly permeable in nature and depth to groundwater levels are between 10-20 m, there is a risk of seepage of leachate to groundwater potentially creating local groundwater contamination which may impact on nearby native vegetation including threatened and priority flora. The Delegated Officer has taken into consideration the applicant's controls of lining the landfill using dried clay fines sourced from the site to a minimum thickness of 150 mm and the additional controls provided by the applicant on the landfill liner system and design as part of a department's request for further information. The additional controls are based on the requirements

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
								from the department's Category checklist (solid waste landfill sites).
	Stormwater runoff from trenches/contaminated stormwater	Direct discharge to land via runoff during rainfall events causing impacts to soil, native vegetation, surface water and/or groundwater contamination.	Nearby native vegetation including threatened and priority flora Groundwater Surface water	Refer to Section 3.1	C= Minor L = Unlikely **Medium Risk**	Yes	Condition 1 (Table 1): Design and Construction/installation requirements Condition 10 (Table 3): Infrastructure and equipment requirements during time limited operations. **Condition 11 (Table 4):** Waste acceptance / disposal requirements. **Condition 12 (Table 5):** Waste cover requirements. **Condition 14:** Submission of Time Limited Operations Report. **Condition 15:** Time Limited Operations reporting requirement	To minimise the risk to receptors associated with contaminated stormwater runoff, the Delegated Officer has conditioned the Works Approval with the applicants controls which include the requirement for the landfill to be located at least 100 m from any surface water body and for bunding to be constructed and maintained around the landfill to divert cleanwater.
Category 62: Slimes Transfer Storage Area Stockpiling and crushing of dried clay slimes on the Slimes Transfer Storage Area prior to being transferred off-site	Dust lift-off from stockpiled clay slimes being crushed and flayed prior to being taken off site	Air / wind pathway potentially causing amenity / health impacts and impacts to vegetation health	Closest rural / residential properties located less than 1.9 km of premises Users of George Grey Drive and the Halfway Bay Camp Nearby vegetation including threatened and priority flora	The applicant has not specified controls for dust emissions during operation.	C = Minor L = Possible **Medium Risk**	N/A	N/A	As discussed under Section 2.6.3 of this report, the applicant is proposing to crush stockpiled dried clay slimes that have been excavated from the solar drying ponds prior to facilitating the transfer of limes which may result in dust lift off impacting on nearby human and environmental receptors. The Delegated Officer

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
			Nearby aboriginal and heritage sites Utcha Well Nature Reserve Hutt Lagoon System Subtropical and Temperate Coastal Saltmarsh					considers that the existing regulatory controls on the Licence L9440/2024/1 in relation to the dust control requirements and management actions for stockpiles, application of dust suppressants, material handling and cessation of activities coupled with the activity being undertaken on a campaign basis is likely to be sufficient for managing the risk of dust lift-off impacting upon nearby sensitive receptors.
	Seepage of water entrained in the sand tails to groundwater	Infiltration through the base of stockpile pad potentially causing soil and groundwater contamination	Soil Groundwater	The applicant has not specified controls for seepage of water entrained in sails to groundwater during operation	C= Slight L = Unlikely **Low Risk**	N/A	N/A	Noting that the dry slimes will have a moisture content of approximately between 15 to 20 % before being placed on the bunded pad and the depth to groundwater is approximately between 10 to 20 m, it is unlikely to have any interaction with groundwater. Given this, the Delegated Officer considers that seepage of sand tails to groundwater is unlikely to occur and the risk rating is low.
	Leachate from potentially contaminated stormwater runoff	Overland flow impacting	Nearby native vegetation including threatened and priority flora Groundwater	Refer to Section 3.1	C= Minor L = Unlikely **Medium Risk**	Yes	Condition 1 (Table 1): Design and Construction/installation requirements Condition 10 (Table 3): Infrastructure and equipment requirements during time limited operations.	The applicant's proposed control of maintaining bunding around the Slimes Transfer Storage Area have been deemed to be sufficient to manage this risk event and have been conditioned within the works approval as construction / operational requirements as

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
							Condition 14: Submission of Time Limited Operations Report. **Condition 15:** Time Limited Operations reporting requirement	per the department's *Guideline: Risk Assessments*.
	Noise associated with crushing of dried clay slimes	Air / wind pathway potentially causing amenity / health impacts	Closest rural / residential properties located less than 1.9 km of premises Users of George Grey Drive and the Halfway Bay Camp	The applicant has not specified controls for noise emissions during operation.	C= Minor L = Unlikely **Medium Risk**	N/A	N/A	The Delegated Officer considers that the existing regulatory controls on the Licence are sufficient in managing particulate emissions from the drying garnet concentrate.

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

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

3.3 Detailed risk assessment for noise emissions for processing plant upgrade

3.3.1 Overview of risk event

Through consideration of the source-pathway-receptor analysis, there is a risk of noise emissions released from the upgrade to the processing plant during operations impacting upon nearby sensitive residential receptors. As discussed under Section 3.1.2 of this report, there are three sensitive noise receptors located 3.5kms from the CPA, with the closest receptor (R1) being located 2.5 km from the CPA. If noise emissions are not managed appropriately, noise emissions may impact on the health and amenity of nearby sensitive residential receptors.

3.3.2 Noise assessment review

The applicant provided an Environmental Noise Assessment (ENA) prepared by Herring Storer Acoustics (HSA) in July 2024 to support the proposed plant upgrade. The Department's Environmental Noise Branch (ENB) undertook a technical review of the ENA and noted that based on HSA's modelled results, the proposed plant upgrade will increase the night-time operation noise levels between 1 and 6 decibels (dB) at the three receiving locations (R1, R2 and R3). The upgrades will increase the night-time noise level at the two closest residential locations from 24 dB(A) to 27 dB(A) at R1 and from 27 dB(A) to 28 dB(A) at R2.

While ENB concurred with the HSA's conclusion that the overall night-time operation levels including the proposed upgrades are compliant with the assigned night-time level of 35 dB(A) at the closest noise sensitive premises, the increase of noise by 3 decibels (dB) at R1 is considered to be significant and noticeable to the residents, particularly if the noise is tonal.

Noting the above, there is a risk that such an increase at night may attract noise complaints at R1. Further to this, the department has already received noise complaints from R1 for the existing operations, therefore this increases the likelihood that this risk event is likely to occur.

Upon consideration of the advice from ENB and the source-pathway-receptor analysis, the Delegated Officer considered that noise emissions from the proposed plant upgrade presents mid to high level impacts and will probably occur in most circumstances. Noting the high-risk rating, the department advised the applicant that additional noise control measures would be required to lower the likelihood and/or consequence of the risk event occurring.

The applicant commissioned HSA to undertake further analysis of the DSP noise sources, which identified the major noise source being received at R1 was from the cyclone fan system of the proposed upgrades, which is at least 9dB higher than the contribution from other individual sources associated with the proposed upgrades. Therefore, HSA advised the applicant to reduce noise emissions through changing the fan unit which would result in a 10dB noise reduction, which would lower the overall noise emission level from the plant upgrade from 23.9dB(A) to 18.5 dB(A) at R1. Through the implementation of this noise control measure, the total for the inclusion of all processing infrastructure (existing and proposed) will be increased by 1 dB at R1, which is considered to be an insignificant increase from the proposed upgrades.

3.3.3 Department's determination

The Delegated Officer has considered the applicant's commitment to implement the noise control measure outlined above to reduce the increase of noise emissions impacting on R1. The Delegated Officer notes the advice received from ENB that although there is some uncertainty as to whether it is practical to reduce the cyclone fan system noise by 10 dB, this noise control measure will still reduce the increased noise impact on R1 to an insignificant level, even if it can only achieve a 5 dB. With consideration of this additional noise control measure, the Delegated Officer considers the consequence of the Risk Event to be 'Moderate' and the overall rating for the risk posed by noise emissions impacting on sensitive human receptors to be 'Medium'. This

additional noise control measure has been conditioned on the Works Approval as a design/construction and operational requirement. The Delegated Officer considers that noise validation monitoring is not required noting noise monitoring is already required as a condition under Licence L9440/2024/1. The noise monitoring data obtained during operations will inform the assessment under a future licence amendment for the proposed plant upgrade.

4. Consultation

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

Table 5: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 4 September 2024.	No comments were received.	N/A
Shire of Northampton advised of proposal on 4 September 2024.	No comments were received.	N/A
Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) advised of proposal on 5 September 2024.	Refer to Appendix 1 for the comments received.	Refer to Appendix 1 for the department's response.
Department of Planning, Lands and Heritage (DPLH) advised of proposal on 5 September 2024.	Refer to Appendix 1 for the comments received.	Refer to Appendix 1 for the department's response.
Department of Biodiversity, Conservation and Attractions (DBCA) advised of proposal on 5 September 2024.	Refer to Appendix 1 for the comments received.	Refer to Appendix 1 for the department's response.
Main Roads of Western Australia advised of the proposal on 5 September 2024.	No comments were received.	N/A
Yamatji Southern Region Corporation (YSRC) advised of the proposal on 5 September 2024.	Refer to Appendix 1 for the comments received.	Refer to Appendix 1 for the department's response.
Resident 1 advised of proposal on 5 September 2024.	Refer to Appendix 1 for the comments received.	Refer to Appendix 1 for the department's response.

Consultation method	Comments received	Department response
Resident 3 advised of proposal on 5 September 2024.	Refer to Appendix 1 for the comments received.	Refer to Appendix 1 for the department's response.
Applicant was provided with draft documents on 12 February 2025.	Refer to Appendix 2 for the comments received.	Refer to Appendix 2 for the department's response.

5. Conclusion

Based on the assessment in this decision report, the delegated officer has determined that a Works Approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

References

1. Darkwater Consulting Pty Ltd 2024, *Lucky Bay Sand Tailings Stockpile Groundwater Assessment July 2024 Rev B*, Perth, Western Australia. Unpublished report prepared by Darkwater Consulting Pty Ltd for Mineral Resources Limited.
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. Department of Water (DoW) 2017, *Water Quality Protection Note 27: Liners for containing pollutants using engineered soils,* Perth, Western Australia.
4. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
5. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
6. Mineral Resources Ltd 2024, *Lucky Bay Garnet (Balline) Supporting Document – Works Approval – Part V Environmental Protection Act 1986*, prepared for Australian Garnet Pty Ltd.
7. Onshore Environmental 2022a. *Lucky Bay Garnet Project Detailed Vertebrate Fauna Survey*, Yallingup, Western Australia. Unpublished report prepared by Onshore Environmental for Australian Garnet Pty Ltd.
8. Onshore Environmental 2022b. *Lucky Bay Garnet Project Detailed Flora and Vegetation Survey,* Yallingup, Western Australia. Unpublished report prepared by Onshore Environmental for Australian Garnet Pty Ltd.

Appendix 1: Summary of stakeholder comments on works approval application

Stakeholder	Summary of stakeholder's comments	Department's response

DEMIRS	DEMIRS provided a response on 25 September 2024, 4 November 2024 and 6 January 2025 advising the following:
	• DEMIRS received a revised MP (Reg ID 129163) on 04 October 2024 and noted the following discrepancies between the revised MP and W6958/2024/1:
	  ○ Site maps are inconsistent. The pit boundary differs between the works approval and the mining proposal. The mapping of the solar drying ponds differs between the two documents.
	  ○ An in-pit decant pond is proposed within Reg ID 129163, however it does not appear to be included within the works approval.
	• DEMIRS requires the revised MP to be approved before the activities outlined in W6958/2024/1 are undertaken;
	• An environmental compliance inspection of Lucky Bay Garnet Project was conducted on 12 November 2024. The findings from the inspection related to this works approval included the following observations:
	  ○ The six additional solar drying ponds were already constructed on top of the Sand Tailings Area (STA) and were in operation containing water and slimes; and
	  ○ The STA is already being used as a permanent landform with the solar drying ponds constructed on top. No approval has been given to allow for a permanent landform under the *Mining Act 1978.*
	• The proposed conversion of the STA to a permanent landform and the revised MP were referred to DEMIRS geotechnical officers for assessment. The following comments were provided:
	  ○ DEMIRS concurs with the following statement provided within the Landloch Report: "...*for the landform to be effective, it is likely that stringent monitoring and rehabilitation works would be required over potentially an extended period as opposed to placing the material in-pit and remediating. (i.e. loss of only 10% hydromulch coverage leads to an unacceptable erosion*
		The applicant is to ensure that all relevant approvals are obtained for the proposed activities under this works approval as identified by DEMIRS prior to any works commencing.
		
		As discussed under section 2.2 of this report, the applicant confirmed with the department that the six additional solar drying ponds had already been constructed and the STA was already being utilised as a permanent landform prior to it being assessed by the department. Therefore, these components have been removed from the scope of the works approval.
		
		It is noted that the advice received from DEMIRS geotechnical officers with respect to the permanent sand tailings landform will still be relevant for a future licence amendment, but not critical to this works approval assessment.
		
		Separate approval to operate the solar drying ponds will need to be facilitated via way of a licence amendment.
		
		The department advised the applicant that the construction and operation of the solar drying ponds without a works approval is considered to be an offence under section 52 of the EP Act and that the matter will be referred to the departments Assurance Directorate for further investigation and action as required.

Stakeholder	Summary of stakeholder's comments	Department's response
	rate)"; ○ The mine closure plan did not demonstrate the volumes of topsoil required to sheet the tailings structure or, provide a monitoring program that would ensure the landform remains non-polluting in perpetuity; ○ There is insufficient information provided that demonstrates that converting and rehabilitating the sand tailings into a permanent landform presents a better outcome than the initial proposed backfilling of the pit; ○ The initial and on-going design and construction of the stockpile was temporary in nature and no information was presented in the mining proposal to address this. The proponent has not provided information suggesting that some level of geotechnical review of the effect that the solar drying ponds may have on the short and long term stability of the sand tailings structure has been undertaken; and ○ The main concern regarding the proposed conversion of the sand tailings stockpile is the potential pollution risk that such a conversion presents.	
DPLH	DPLH provided a response on 17 September 2024 advising the following: • A review of the Register of Places and Objects, as well as the DPLH Aboriginal Heritage Database, for mining tenements M70/1280, G70/134, G70/178, G70/215 and G70/253 concluded that the lodged place 'Balline Isolated Artefacts' (ID 29013) is within the project area of the works approval on M70/1280; • Approvals under the *Aboriginal Heritage Act 1972* (AHA) maybe required as the proposed works indicate that interference with a known and recorded Aboriginal site may occur; • Noting the plans for expansion proposed at the Lucky Bay Project site, it is recommended that Australian Garnet ensure consultation with the traditional owners, the Hutt River People, represented by the Yamatji Southern Regional Corporation; and • The applicant needs to be aware of their obligations under the AHA and *Aboriginal Heritage Relations 1974*.	The applicant is to ensure that all relevant approvals and engagement are sought as identified by DPLH. The granting of a Part V EP Act approval does not remove the applicant's obligations under the AHA. The department sought direct comment from YSRC as part of this assessment process which is documented below.

Stakeholder	Summary of stakeholder's comments	Department's response
YSRC	YSRC provided a response on 25 September 2024 advising the following: • <u>Aboriginal Cultural Heritage concerns</u> ➢ The proposed activities pose a direct threat to nearby Aboriginal Heritage Sites which hold immense spiritual, cultural and historical value. ➢ Ongoing consultation and engagement with the YSRC regarding heritage and environmental compliance should be undertaken by the applicant. ➢ YSRC supports the idea for the applicant to engage in further consultation for the development of an Aboriginal Cultural Heritage Management Plan. • <u>Environmental concerns</u> ➢ The proposed upgrades to the Dry Separation Plant and construction of additional solar drying ponds are likely to increase dust and noise emissions. ➢ The construction of the Class II putrescible landfill site may result in the risk of stormwater contamination, odour emissions, leachate and windblown waste. ➢ The proposed activities may result in groundwater and surface water contamination. • <u>Yamatji Land Estate and local tourism development</u> ➢ The close proximity of the project area to the Yamatji Land Estate has the potential to impact on the estate through the environmental impacts discussed above as well compromising the cultural significance, tourism potential and economic benefits.	The department is not able to assess matters related to heritage or native title under Part V EP Act assessments, as these matters are assessed under other legislative frameworks. The applicant is required to obtain all relevant approvals for aboriginal heritage and the granting of a Part V EP Act approval does not remove the applicant's obligations under the AHA. The department acknowledges YSRC's role, significant cultural knowledge and connection to Country and living waters such as rivers, springs, soaks, jilas, and saltwater. The department is committed to listening to, learning from, and building stronger partnerships with Traditional Owners in the management of our precious environment and water resources. Our Reconciliation Action Plan is a journey and a collaborative partnership with Reconciliation Australia. It provides a framework for us to continuously develop and strengthen our reconciliation commitments and ensure we are genuinely inclusive, supporting and advocating for generational change. Other strategies and government priority reforms and targets that drive our work include our Aboriginal Empowerment Strategy, cultural heritage, Native Title settlements and our long-term strategic workforce and diversity planning. Although the department is not able to share information related to any open compliance investigations, the department is committed to enagement with YSRC where matters related to this project will, or may, have an impact to YSRC's social, cultural or environmental values. The department provided the comments received from YSRC to the applicant for awareness and action as required. The department recommended that the applicant engage with YSRC to go through the comments and foster greater collaboration between the two parties. The department has undertaken a risk assessment that includes potential impacts to nearby sensitive receptors which is provided under Table 4 in section 3.2 of this report. The Delegated Officer has taken into consideration during the assessment of the works approval that there are existing

Stakeholder	Summary of stakeholder's comments	Department's response
		conditions in place under Licence L9440/2024/1 for the control, management and monitoring within the prescribed premises boundary of dust and noise emissions. Regulatory controls proposed by the applicant for managing the risk of stormwater contamination, odour, leachate and windblown wastes have been imposed on the works approval as outlined in Table 4 of this report.
DBCA	DBCA provided a response on 25 September 2024 advising the following: • *"The proposed operations are in close proximity to Utcha Well Nature Reserve, vested with the Conservation and Parks Commission and managed by DBCA under the CALM Act for the conservation of flora and fauna. DBCA has observed declines in vegetation health and condition in the general area, potentially linked to dust deposition (diffuse source) and groundwater abstraction from mining activities, particularly noticeable during dry summer months. Mining activities in the area also have the potential to spread weeds if not managed appropriately*." • A review of the applicant's dust, groundwater and weed management is recommended to avoid any environmental risk or impact from the proposed activities to environmental receptors; • A threatened orchid species, *Caladenia bryceana* subsp. *Cracens* has been recorded within close proximity of the prescribed premises boundary and potential habitat for this species exists within the project area. However, a targeted flora survey undertaken at the appropriate flowering time would be required to determine if the potential habitat supports a local population of this threatened flora species; and • In accordance with section 40 of the *Biodiversity Conservation Act 2016* (BC Act), any take or disturbance of threatened species requires ministerial authorisation.	The department has undertaken a risk assessment that includes potential impacts to nearby sensitive receptors which is provided under Table 4Table 3 in section 3.2 of this report. As outlined under Table 2, there are existing conditions in place under Licence L9440/2024/1 for the control, management and monitoring within the prescribed premises boundary of dust emissions, ambient groundwater quality and groundwater mounding. The Australian Garnet's Dust Management Plan was also reviewed and updated as part of the assessment of Licence L9440/2024/1. The premises also has a groundwater licence GWL 170860(6) and Groundwater Operating Strategy for the abstraction of water for authorised activities specified in the groundwater licence. It should be noted vegetation monitoring on groundwater dependent vegetation (vegetation health and condition assessments) is being undertaken as per the requirements under the Groundwater Operating Strategy under the RIWI Act. No vegetation monitoring has been considered in this works approval as it is already regulated under separate approvals. Clearing Permits CPS 3891/5 and CPS 9057/1 under Part V of the EP Act states the following regarding weed control: "*When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of weeds:* *(a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;* *(b) ensure that no known weed-affected soil, mulch, fill or other*

Stakeholder	Summary of stakeholder's comments	Department's response
		material is brought into the area to be cleared; and *(c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared."* Furthermore, under the Mining Act, the tenement conditions states the following: *"All reasonable and practicable measures will be taken to prevent the spread of dieback and weeds."* As weed management has been considered and is regulated under separate approvals, no controls for weed management have been included in the works approval. The applicant is to ensure engagement with DBCA where recommendations have been provided, i.e. undertake a targeted orchid survey and to ensure all legislative requirements under section 40 of the BC Act are met.
Resident 1	The submitter has provided a response on 20 September 2024 to the department. It is noted that same submission was provided for the licence application L9440/2024/1. Therefore, the comments below are limited to the scope of this works approval: • Application Form for Works Approval ➢ Part 4: Proposed activities: The submitter has concerns regarding: - Light emissions and visual impacts were not considered; - Noise emissions: The submitter noted that they strongly disagree with the key risks identified by Herring Storer Acoustics in their report of 2017 Ref: 22541-2-17265. The submitter can hear the noise of the plant machinery and generator from their residence. The noise emissions from the wind turbines are impacting the health of the resident, even while not operational as they been positioned too close to their dwelling; - Attachment 2: Premises Map: A map was not provided with the application identifying sensitive receptors close to the Premises and separation distances to the submitters residence. The submitter requested a map be provided to them;	The department has undertaken a risk assessment that includes potential impacts from emissions and discharges to nearby sensitive receptors which is provided under Table 4 in section 3.2 of this report. The department undertakes risk assessments in accordance with the risk criteria outlined in Table 1 of the departments Risk Assessments, which assesses impacts to public health and amenity (such as air and water quality, noise and odour). It does not consider light emissions or visual impacts as it's outside the scope of the risk assessment. The department sought technical advice from the department's Noise Branch and the advice is detailed under section 3.3.2 of this decision report. Upon the advice received from Noise Branch, review of the 2024 environmental noise assessment and supplementary acoustic information, concerns from a nearby receptor and consideration of existing licence conditions, the detailed risk assessment concluded noise emissions associated to the proposed plant upgrade could be managed and meet the assigned levels under the Noise Regulations. Attachment 2C labelled Siting and Location Map – Environment was provided with the application and details the sensitive human receptors located close to the premises including the

Stakeholder	Summary of stakeholder's comments	Department's response
	- Attachment 3A: Environmental Commissioning Plan: The submitter noted the expected emissions from the operation are dust emissions to air; ➢ Part 5: Index of Biodiversity and Marine Surveys for Assessments (IBSA and IMSA): There were no marine surveys completed for the works approval assessment; ➢ Part 6.2: Environmental Impact Assessment (Part IV of the EP Act): The submitter has concerns about the validity of the assessment that was undertaken by Part IV of the EP Act and the determination not to assess the application; ➢ Part 6.3: Clearing of native vegetation: The submitter notes that the clearing permits for the project were approved without any of the biodiversity and marine survey documents being provided for the assessment process; ➢ Part 6.5: Water licences and permits: The application for the groundwater licence GWL 170860(6) did not inform the relevant departments of the surface water, mappa lake and coastal salt marsh land that include areas that have groundwater connectivity to tidal water bodies ecological communities present; ➢ Part 7.8 and Attachment 5: Other approvals and consultation: There are no supporting documents relating to stakeholder consultation with nearby residences; ➢ Part 10.1 and 10.2: Sensitive land uses and nearby environmental receptors: The submitter raised concern that the distances from the operational boundary to nearby sensitive receptors stated in the application are incorrect. The submitter noted several sensitive receptors (human and environmental) were not included in the environmental siting.	submitters residence (labelled receptor 1). This map was publicly available with the supporting documentation when the application was advertised on the department's website on 4 September 2024. The Environmental Commissioning Plan provided by the applicant was prepared to verify that the dust and noise emissions from the baghouse and exhaust stack of the plant upgrade are lower than the specified guidelines. Conditions 5, 6 and 7 of the works approval have been imposed for the environmental commissioning of the DSP upgrade. The risk assessment of the works approval did not require an IBSA survey to be undertaken noting the marine tidal region does not intersect the areas where the proposed activities subject to this works approval application are located. As noted under section 2.3 of this report, a determination was made by the EPA not to assess the proposal under Part IV of the EP Act as the EPA considered that the potential impacts from the project could be mitigated under other statutory decision-making processes, which includes the regulation of emissions and discharges prescribed premises under Part V of the EP Act. As noted under Table 1 of this report, the applicant holds clearing permits and a groundwater licence for the project. An environmental impact assessment was undertaken against the clearing principles contained in Schedule 5 of the EP Act for the approved clearing areas and the review of biodiversity surveys would have been included as part of the assessment. The applicant obtained an exemption from the department for publishing the stakeholder engagement register (Attachment 5) as it contained details that if disclosed would reveal personal information about an individual. However, in accordance with the department's Guideline - Industry Regulation Guide to Licensing, the department's consultation process is to seek comments directly from the public during the public submission period who may have an interest in the application and their comments get considered during the assessment. All relevant stakeholders were consulted with by the department advising

Stakeholder	Summary of stakeholder's comments	Department's response
		them of the application allowing them the opportunity to provide comments during a public submission period. As part of the risk assessment process, the department undertakes their own environmental siting analysis to identify the nearby sensitive human and environmental receptors and the distance from the prescribed activity which is depicted in Table 3.
Resident 3	The submitter has provided a response on 25 October 2024 providing the following comments: • Re-referral to the Environmental Protection Authority (EPA) for assessment ➢ The throughput of the proposed mine and processing operation was not stated to be as high as 7-8 million tonnes per annum (mtpa) in the EPA referral documentation, an 8.4 mtpa operation is a substantial operation requiring a higher level of assessment and needs to be re-referred to the EPA for consideration. • Dust management ➢ The three properties owned by the submitter frequently receive dust emissions from the mining and processing operation; ➢ The works approval application and supporting documentation does not include any dust management data or analysis; ➢ No aspects of dust impact or dust management was referred to or considered in the EPA assessment which amplifies the need for dust impacts to be reviewed during the Part V assessment process; ➢ Prior to the grant of the works approval, a review of dust data and the preparation of a comprehensive Dust Management Plan is required; and ➢ A draft Dust Management Plan that includes provision for on-going dust monitoring and reporting of non-compliances in the annual compliance report be provided to the submitter prior to the works approval being granted. • Noise Management ➢ The three properties of the submitter are within the affected area	The department notes this proposal has not been referred to the EPA for consideration under Part IV of the EP Act. The referral of the proposal for Part IV assessment (EPA) is to the discretion of anyone who considers the proposed works to be significant. A significant proposal is one that is likely, if implemented, to have a significant impact on the environment. A previous determination was made by the EPA not to assess the proposal under Part IV of the EP Act as the EPA considered that the potential impacts from the project could be mitigated under other statutory decision-making processes, which includes the regulation of a prescribed premises under Part V of the EP Act (refer to Section 2.3 of this report for further information). A risk assessment for the emissions and discharges related to the proposed activity under a works approval to construct (W6214/2019/1) and a licence (L9440/2024/1) for the continued operation (L9440/2024/1) was undertaken for the mineral sand's operation at the Premises. The production capacity of the plant processing up to 8.4 mtpa of mineral sands ore under prescribed premises category 8 under Schedule 1 of the EP Regulations was risk assessed, and regulatory controls imposed on the licence where required. A copy of the licence and associated decision report can be found on the department's website under the following link L9440 - Australian Garnet Pty Ltd. The department has undertaken a risk assessment that includes potential impacts to nearby sensitive receptors which is provided under Table 4 in section 3.2 of this report. As outlined under Table 2, there are existing conditions in place under Licence L9440/2024/1 for the control, management and

Stakeholder	Summary of stakeholder's comments	Department's response
	for noise impacts from the mining and processing operations; ➢ The noise data in the supporting documentation indicates that there is significant potential for noise impacts on surrounding residential properties, therefore there is a need to ensure infrastructure for operations are built adequately to manage these impacts; ➢ On-going noise monitoring be required and the Noise Management Plan be reviewed every five years; and ➢ A copy of the final Noise Management Plan and details of how that plan is to be maintained to be provided to nearby residents. • <u>Compliance Reporting</u> ➢ Adequate conditions for compliance reporting should be included in the Part V works approval including the requirement for copies of annual compliance reports to be provided to nearby residents; and ➢ The submitter has requested the opportunity to review the draft works approval to have opportunity to provide comments and/or suggestion as to the appropriate scope and wording of conditions.	monitoring within the prescribed premises boundary of dust and noise emissions associated to the project that the Delegated Officer took into consideration during the risk assessment of the proposed activities under the works approval. The Australian Garnet's Dust Management Plan was also reviewed and updated as part of the assessment of Licence L9440/2024/1 and taken into consideration during the assessment of the works approval application. The applicant is required under condition 27 of the licence to prepare a revised dust management plan and provide to the CEO 12 months after the commencement of ambient air monitoring from 20 January 2025. The department sought technical advice from the department's Noise Branch as part of the risk assessment of noise emissions from the proposed plant upgrade and the advice is detailed under section 3.3 of this decision report. Upon receiving the advice from Noise Branch, review of the environmental noise assessment, and concerns from a nearby receptor, additional regulatory controls have been imposed on the works approval to manage the proposed increase in noise emissions as a result of the proposed upgrade. The delegated officer also took into consideration the existing conditions on the licence for the control, management and monitoring of noise emissions under the licence. The applicant is required under the Licence to record dust monitoring results and a summary of complaints during the annual reporting period and provide an Annual Environmental Report (AER) to the CEO by 30 September each year. The AER will be publicly available on the department's website following submission via the link above. In accordance with the department's Guideline - Industry Regulation Guide to Licensing, the department's consultation process is to seek comments directly from the public during the public submission period who may have an interest in the application and their comments get considered during the assessment. The draft documents are for the applicant to review and provide comments prior to a decision being made by the department. Once the department determines the grant of an

Stakeholder	Summary of stakeholder's comments	Department's response
		instrument, the decision and a copy of the granted instrument are published on the department's website. The publication of the decision provides the opportunity for members of the public to lodge an appeal once a decision is made if they wish.

Appendix 2: Summary of applicant's comments on risk assessment and draft conditions

Condition / Query	Summary of applicant's comment	Department's response
Decision Report		
1 The Applicant is required to confirm whether the larger unit will replace the existing rotary dryer or if an additional dryer and baghouse will be installed.	The new larger dryer will be installed adjacent to the original dryer. The larger unit will be the primary operational unit, and the original smaller dryer unit retained as a standby only. Only one dryer can operate at a time.	The department has included the following paragraph under the section 2.6.1 for the Dry Separation Plant. *"The applicant advised upon review of the draft Works Approval and Decision Report that the larger dryer will be installed adjacent to the previous dryer. Only one dryer can operate at a time, and the previous dryer will remain as a standby only. The larger dryer will not improve efficiencies but will operate closer to the approved throughput."*
2 Applicant is to clarify how they plan to improve efficiencies without increasing the throughput.	The larger dryer doesn't improve efficiencies but will operate closer to the approved throughput.	
3 Applicant to advise how leachate levels will be managed within respective lined areas? Details on additional infrastructure, equipment and related management provisions for leachate management/ collection/ disposal should be presented where applicable.	The applicant provided further information with the following attachment, *AGPL - Draft WAA Response - Leachate Management Memorandum* – MBS Environmental, 21 February 2025.	The department has reviewed the information provided and included the following under Table 2 (section 3.1.1) of the Decision Report; *"Landfill site will be designed to include a piped subsoil drainage system above the base liner with the following requirements:* ○ *Pipework must penetrate a sidewall of the proposed landfill with required measures undertaken to prevent seepage around the exterior of the pipework while maintaining the structural integrity of the embankment;* ○ *Underdrainage system must drain leachate by gravity to a collection sump;* ○ *Underdrainage system must be designed to include graded filter layers (for example, gravel, sand, geotextiles) to prevent siltation of pipes;*

Condition / Query	Summary of applicant's comment	Department's response
		○ *Sump must be sized to contain any leachate and directly capture rainfall for a 1:20 year, 24-hour storm event; and* ○ *Leachate in the sump must be collected by a suitably Licensed contractor for disposal at an off-site facility when the freeboard limit is reached. Any settled solids must be periodically removed."*
Works Approval		
1 As noted under section 2.6.1 of the decision report, the applicant is required to confirm whether the existing rotary dryer will be replaced or if a third dryer and baghouse will be installed.	The applicant refers to the response under comment 1 in the Decision Report.	Noted.
2 The applicant is required to provide the details of the new cyclone fan unit that will be installed.	Applicant provided Attachment 2; design drawing of the new cyclone fan unit.	Design drawing has been included as an additional figure in the Works Approval.
3 Applicant to advise how the leachate head will be managed in respective landfill areas – refer to section 3.1.1 of the Decision Report for corresponding comments.	The applicant refers to the response under comment 3 in the Decision Report.	The department has included related design and construction requirements in Condition 1, Table 1, of the Works Approval. Furthermore, the following operational requirements were included in Table 3, Condition 10 of the Works Approval; ○ *"Maintain and operate the subsoil drainage system;* ○ *Maintain and operate the sump to capture rainfall for a 1:20 year, 24-hour storm event; and* ○ *Leachate in the sump must be collected by a suitably Licensed contractor for disposal at an off-site facility when the leachate-*

Condition / Query	Summary of applicant's comment	Department's response
		head limit is reached. Any settled solids must be periodically removed." Specifications on the leachate head limit [freeboard limit] were not provided in the response to the draft works approval. The department has set a nominal leachate head limit of 300mm above the liner surface (a definition has been included in the works approval for 'leachate head limit')
4 The applicant is required to provide additional information on the commissioning requirements stage of the DSP as the information provided in the Environmental Commissioning Report is limited. Please advise what activities and testing of infrastructure will be undertaken for the infrastructure upgrades during commissioning. In addition, the applicant is required to advise whether any environmental commissioning will be undertaken for the upgrades to the WCP.	The applicant provided a revised commissioning plan in the document, *Environmental Commissioning Plan – AGPL,* February 2025.	The department has included the following commissioning requirements under Table 2 of Condition 5; *"Stages 1 to 3 involves running the system and to measure noise levels with reference to the noise levels recorded by the manufacturer as the baseline. Discharges from the stack require air only.* *Stages 4 and 5 involves discharge dryer exhaust, water vapour, and potential particulates from the system.* *During commissioning of the baghouse and exhaust stack the noise and particulate emissions and/or discharges will be monitored and/or confirmed to establish or test a steady-state operation."*
5 Applicant to advise/confirm final capping layer details.	Applicant provided Attachment 4 for detail of the capping layer.	The department notes that Attachment 4 did not provide the capping layer depth. A nominal minimum 300 mm capping layer depth has been specified on the Works Approval. Capping and proposed rehabilitation will need to be considered further in the related licence amendment noting that these works are unlikely to commence during the works approval phase.
6	The applicant refers to the response under comment 1 in the Decision	The department has added a footnote to Table 6;

Condition / Query	Summary of applicant's comment	Department's response
As noted above under point 1 in green highlighted text, the applicant is required to confirm whether the existing rotary dryer will be replaced or if a third dryer and baghouse will be installed. Table 5 will be updated accordingly when this information has been provided.	Report.	*"Note 1: DSP – rotary dryer stack (Baghouse 3) is the primary operational unit, where DSP – rotary dryer stack (Baghouse 2) remains as a standby unit only. Only one of these dryer units can operate at a time."*
Schedule 2 Applicant to provide GIS coordinates of premises boundary in GDA2020 Zone 50.	Applicant provided Attachment 5 for the coordinates of the premises boundary. Shapefiles will accompany the email submission of this letter.	The department has added the coordinates to Schedule 2 of the works approval.