



Application for Works Approval

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

Works Approval Number	W6678/2022/1
Applicant	Narnoo Mining Pty Ltd
ACN	084 713 100
File number	DER2022/000124
Premises	Mulga Rocks Uranium Mine Legal description – Mining Tenements M39/1104, L39/219, L39/252 and L39/253 As shown in Schedule 1: Figure 1 of the works approval
Date of report	14 December 2022
Proposed Decision	Works approval granted

**MANAGER WASTE INDUSTRIES
REGULATORY SERVICES**

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

Table of Contents

1. Decision summary	1
2. Scope of assessment	1
2.1 Regulatory framework	1
2.2 Application summary	1
2.3 Overview of premises	2
2.3.1 Wastewater treatment plant	2
2.3.2 Landfill	4
2.3.3 Hydrocarbon contaminated waste – Landfarming (future works/activities)	5
2.3.4 Site setting	6
2.3.5 Clearing	6
2.4 Part IV of the EP Act	6
2.5 Department of Mines, Industry Regulation and Safety	6
3. Risk assessment	15
3.1 Source-pathways and receptors	15
3.1.1 Emissions and controls	15
3.1.2 Receptors	19
3.2 Risk ratings	19
3.3 Risk assessment of treated wastewater discharge	22
3.3.1 Description of risk event	22
3.3.2 Identification and general characterisation of emission	22
3.3.3 Impact of risk event	22
3.3.4 Criteria for assessment	23
3.3.5 Sprayfield sizing and nutrient loading assessment	23
3.3.6 Consequence of risk event	24
3.3.7 Likelihood of risk event	24
3.3.8 Overall rating of risk event	24
3.3.9 Regulatory controls	24
4. Consultation	26
5. Conclusion	29
References	29
Appendix 1: Application validation summary	30

Table 1: Expected treated wastewater concentrations	4
Table 2: Proposed applicant controls	15
Table 3: Sensitive human and environmental receptors and distance from prescribed activity	19
Table 4: Risk assessment of potential emissions and discharges from the premises during construction and operation	20
Table 5: Expected Treated Effluent Quality Discharge Concentrations	22
Table 6: Predicted Irrigation Nutrient Loading	23
Table 7: Proposed regulatory controls for wastewater irrigation	24
Table 8: Consultation	26
Figure 1: Typical SAF Process Cycle	3
Figure 2: Location of Mining Plant Support within the Mulga Rock Project	7
Figure 3: Location of WWTP Mining Plant Support within the Mulga Rock Project	8
Figure 4: Location of accommodation within the Mulga Rock Project	9
Figure 5: Location of the WWTP Village Accommodation spray field area	10
Figure 6: Location of the Putrescible Landfill within the Mulga Rock Project	11
Figure 7: Putrescible landfill cell design	12
Figure 8: WWTP Operational Schematic.....	13
Figure 9: Mapped Vegetation within the Project Boundary	14

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 and operation of Stage 1 of the premises. As a result of this assessment, works approval W6678/2022/1 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

On 17 March 2022, the applicant submitted an application for a works approval to the Department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The application is to undertake construction work relating to wastewater treatment plants (WWTP) and a putrescible landfill facility at the premises. The premises is approximately 105 km south-east of the Southern Cross townsite.

The premises relates to the category and assessed design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in works approval W6678/2022/1. 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 W6678/2022/1.

On 29 September 2022 the department received notification advising Vimy Resources Limited - ABN 56 120 178 949 (Vimy) is now a wholly owned subsidiary of Deep Yellow Limited - ABN 97 006 391 948 (Deep Yellow). Further clarification was requested as how the changes may have implications to the current work approval application.

Confirmation was received on 9 November 2022 advising Deep Yellow have merged with Vimy and Deep Yellow is the ultimate holding company in the Deep Yellow group of companies.

Narnoo Mining Pty Ltd (ABN 81 084 713 100) (Narnoo) is the owner of the Mulga Rock Project (herein referred to as the 'Project'), and the registered holder of the tenements associated with the Project. Narnoo, as a 100% owned subsidiary of Vimy is now part of the Deep Yellow group of companies.

In summary:

- the owner of the project and the registered holder of the tenements associated with this project is Narnoo Mining Pty Ltd.
- the proponent of the project is Vimy Resources Limited
- Narnoo Mining Pty Ltd is a 100% owned subsidiary of Vimy Resources Limited.
- Vimy Resources Limited is in turn a 100% owned subsidiary of Deep Yellow Limited.

The applicant and entity of the project under item 2.1 of the work approval application, Narnoo, has not changed. Item 2.2 states Narnoo trades as Vimy. Deep Yellow has advised that this needed to be corrected as Narnoo does not trade as Vimy and to have this section removed as not applicable. The registered business address also changed to Level 1 502 Hay Street SUBIACO WA 6008. The decision document and supporting information and work approval reflects the changes.

2.3 Overview of premises

The Project is located 240 km east-northeast of the regional mining city of Kalgoorlie–Boulder in the Shire of Menzies (approximately 290 km by road). The premises will be operating on Mining Tenements M39/1104, L39/219, L39/252 and L39/253.

The nearest residential town is Laverton which is approximately 200 km to the northwest. Other regional residential communities include Pinjin Station Homestead, located about 100 km to the west; Kanandah Station Homestead, approximately 150 km to the south-east; Tropicana Gold Mine around 110 km to the north-east, and Mt Margaret Community, about 207 km to the northwest.

Vimy seeks to construct and operate a number of facilities related to the Project that meet the description of a prescribed premises, as defined under Schedule 1 of the *Environmental Protection Regulations 1987*. Construction is proposed to follow a staged process, with separate works approval applications being submitted for each stage.

Stage 1 (this application) includes:

- Sewage facilities (Category 54) comprised of two WWTPs located on M39/1104 and L39/252.
- Putrescible landfill site (Category 89) located on M39/1104.

The proposed Stage 2 works approval application will include:

- Processing or beneficiation of metallic or non-metallic ore (Category 5).
- Mine dewatering (Category 6).
- Electric power generation (Category 52).
- Fuel-burning (Category 67).
- Bulk storage of chemicals (Category 73).

The proposed Stage 3 works approval application will include:

- Processing or beneficiation of metallic or non-metallic ore (Category 5) for the base metals plant.

2.3.1 Wastewater treatment plant

Two WWTPs will be installed to treat sewage and wastewater from the accommodation village and mine support buildings. Both WWTPs will be containerised Submerged Aerated Filter (SAF) package units. SAF WWTPs are a commonly used treatment technology throughout Australia. These custom-built units are "plug and play" requiring only connection to a pump station for sewage inputs and connection to a spray irrigation network for disposal of treated wastewater. An example of a typical containerised SAF WWTP process cycle is shown in Figure 1 below.

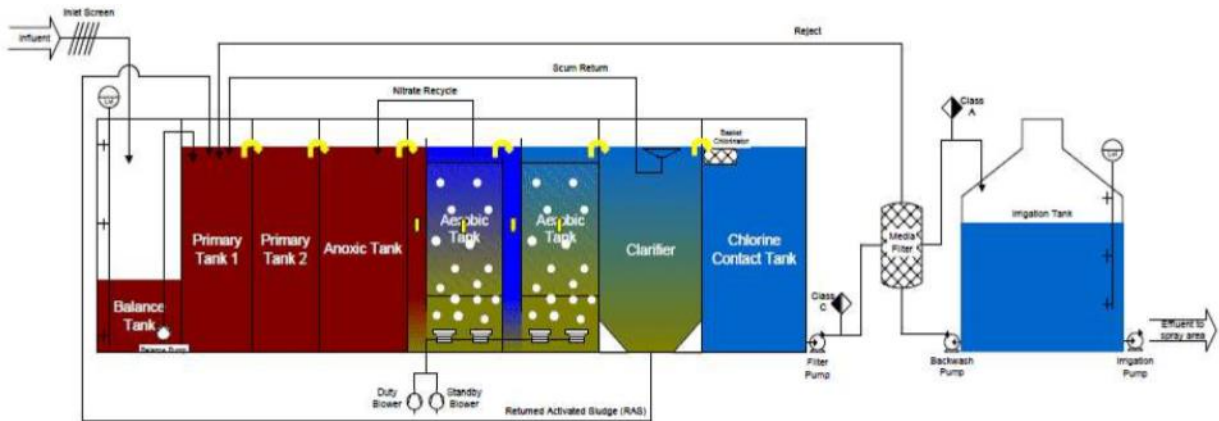


Figure 1: Typical SAF Process Cycle

In addition to anaerobic and aerobic treatment, the WWTP includes disinfection using calcium hypochlorite tablets within a chlorine contact tank prior to discharge of the final treated effluent. Final Discharge Pumps transfer the treated effluent from an irrigation storage tank to the irrigation drip-field/spray-field network.

Village

A 200 m³/d capacity containerised SAF WWTP will be installed to treat effluent from the village to a secondary standard. Sewage sludge removed from the WWTP will be dried in cement sumps and will be deposited into the proposed Class 2 Landfill. Treated wastewater will be disinfected and discharged via a 6 ha irrigation spray field.

Mine Support

A 200 m³/d capacity containerised SAF wastewater treatment plant will be installed to treat the combined volume of effluent from the change rooms, ablutions and other similar services within the mine support facilities. Wastewater will be treated to secondary standard and will be pumped to a 6 ha spray field north of the Processing Facility.

Sludge removed from the WWTP will be dried in cement sumps and will be deposited into the proposed Class II Landfill. Treated wastewater will be disinfected and discharged via a 6 ha WWTP spray field.

Irrigation and conveyance infrastructure and equipment

An overview of associated infrastructure and equipment is outlined below:

- All pipework and fittings shall be polyethylene complying with *AS2698 Plastics pipes and fittings for irrigation and rural applications*.
- Distribution of the effluent shall be through coarse spray heads. The spray heads shall be suitable for use with reclaimed effluent.
- The spray will be designed to exceed a 3 m radius or a spray height exceeding 600 mm above the finished surface level of the irrigation disposal area.
- All pipework will be buried at least 150 mm below the ground surface.
- Sprinklers will operate for four x 40-minute intervals every 24 hours.
- Maximum treated wastewater disposal volumes will be approximately 400 m³/day.
- Two spray fields (6 ha each), total 12 ha. Soils within the spray field comprise of surficial quaternary sediments exhibited as dunal sand or reddish-brown sandy loam in the interdunal zones.

- Ponding of treated irrigated water is unlikely to occur due to the high permeability of the sandy soils.
- Each WWTP will generate 2.5 m³/d of biosolids. The biosolids will be dried and disposed of in the putrescible landfill facility.

The predicted treated wastewater concentrations produced by both WWTPs is shown in Table 1.

Table 1: Expected treated wastewater concentrations

Parameter	Expected concentration
pH	6.5 - 8.5
Biological oxygen demand	<20 mg/L
Total suspended solids	<30 mg/L
Total nitrogen	<40 mg/L
Total phosphorus	<10 mg/L
<i>E. coli</i>	<1,000 cfu/100 mL

2.3.2 Landfill

Vimy proposes to construct a Class II Putrescible Landfill Facility to accept Type 1 Inert Waste and Putrescible Waste, as defined in the *Landfill Waste Classification and Waste Definitions*. Vimy has estimated that 650 tonnes of landfill waste is likely to be generated per year from the accommodation village and the mine support buildings.

The proposed landfill design is to create 9 tapered cells sized approximately 32.5 m x 42.5 m each. Each cell will have a single ramp entry point and only one cell will be operational at any one time. Overburden material excavated to create the cells will be used as landfill cover material. The general design and operation of each landfill cell will require:

- Each cell floor to be compacted;
- The base of the landfill cell will be separated from the highest level of groundwater by at least 3 m;
- Stormwater diversion and drainage will be constructed to divert runoff away from the landfill facility;
- The landfill will be fenced to prevent authorised access, locked and inspected to ensure the area is maintained, waste is being covered and no fauna is being trapped inside;
- The landfill face will not exceed 30 m in length or 2 m above ground level in height;
- A 3 m firebreak will be cleared around the fence of the landfill facility;
- Windblown waste will be regularly collected and disposed of in the landfill;
- Signage at the entry to the landfill will outline allowed and prohibited waste streams;
- A logbook will be installed at the entry of the landfill to document waste types and volumes being received; and
- Fire extinguishers will be located within the facility.

2.3.3 Hydrocarbon contaminated waste – Landfarming (future works/activities)

Vimy proposes to manage hydrocarbon contaminated soil onsite. These are typically associated with accidental spills involving oils, greases and fuels from associated plant and machinery. Hydrocarbon contaminated soil will be excavated and treated on-site using bioremediation techniques in an on-site landfarm. No radioactive contaminated material will be permitted to be processed in this area.

A landfarm functions as a biological remediation process whereby naturally occurring microorganisms (bacteria and fungi) break down, attenuate or transform contaminants such as hydrocarbons in soil.

The landfarm is proposed to be constructed at Ambassador West, and will be selected based on the following criteria:

- Flat site;
- Distance from the groundwater table;
- Drainage;
- Constructed using a low-permeability clay liner that must have a minimum hydraulic conductivity of 1×10^{-9} m/s;
- Multiple operating cells, one active and the others remediating;
- The cells will be bunded to restrict water ingress;
- The cells will be sized to accommodate the operations of a grader and water cart;

The landfarm will be operated so that:

- Only soils contaminated by hydrocarbons will be placed in the landfarm;
- Contaminated material will be spread within the active cell to a maximum depth of 200 mm;
- The active cell will be tilled and moisture levels maintained to facilitate micro-organism activity;
- Cells will be monitored visually and analysed; and
- Validation occurs to ensure waste meets the relevant contaminant levels within the *Landfill Waste Classification and Waste Definitions* .

Following subsequent consultation with the department, the Applicant has stated that this aspect of the Project will not be progressed at this stage. A landfarm management plan and design criteria will be required to be submitted as part of future approval processes.

Depending on the scope and scale of the landfarm, these activities will need to be licensed under Category 61A *Solid Waste Facility* as defined in Schedule 1 of the *Environmental Protection Regulations 1987* (licensing threshold of 1000 tonnes or more per annual period).

2.3.4 Site setting

There are no Threatened Ecological Communities (TECs) known to occur in or near to the premises. There is one Priority 3 ecological community that is likely to occur in the area, referred to as the 'Yellow Sand Plain Communities of the Great Victoria Desert'. The Priority Ecological Community (PEC) is described as an undulating yellow sandplain with an open upper stratum of *Eucalyptus gongylocarpa*, with or without a diverse mallee stratum of *E. youngiana*, *E. mannensis*, *E. platycorys*, over a sparse, though diverse shrubs over hummock grasses, *Triodia desertorum* or *T. scariosa*.

Information relating to other environmentally sensitive receptors is as follows:

- No World Heritage Areas are located within the Mulga Rock Project (MRP).
- No registered Heritage Sites are within the Disturbance Footprint, however there are four registered sites within the Project Boundary.
- The nearest area of conservation significance is Queen Victoria Springs, approximately 30 km to the south.

2.3.5 Clearing

In accordance with Ministerial Statement 1046, the project has approval to clear up to 3,787 ha of native vegetation within a 9,998 ha Development Envelope, for the establishment of mine and associated infrastructure. Clearing activities will be managed in accordance with the approved *Vimy Resources Limited Flora and Vegetation Monitoring and Management Plan (Management-Based Condition Environmental Management Plan) Mulga Rock Uranium Project*.

2.4 Part IV of the EP Act

The MRP was referred to the Environmental Protection Authority (EPA) and a Public Environmental Review (PER) level of assessment was set in September 2013. The MRP was also referred to the former Commonwealth Department of Environment in November 2013. Vimy was advised in January 2014 that the Project was considered a "Controlled Action" and would require assessment and approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Vimy submitted a PER to the EPA in June 2015, which was endorsed by the EPA on 25 August 2016, with the Project being approved by the Minister for Environment on 16 December 2016 (MS1046). The assessment highlighted that no residual environmental impact would result from the Project and all temporary impacts could be effectively managed through environmental conditions. Commonwealth Environment Minister Approval was granted in March 2017.

2.5 Department of Mines, Industry Regulation and Safety

The following approvals have been received for the Mulga Rock Project:

- A Project Management Plan was approved by DMIRS on 26 August 2021 (PM-960-287111).
- A Mining Proposal and Mine Closure Plan for Mulga Rock East was approved by DMIRS on 29 September 2021 (Reg ID: 92188).
- A Radiation Management Plan (RM-872-448196) was approved by DMIRS on 9 December 2021.



Figure 2: Location of Mining Plant Support within the Mulga Rock Project

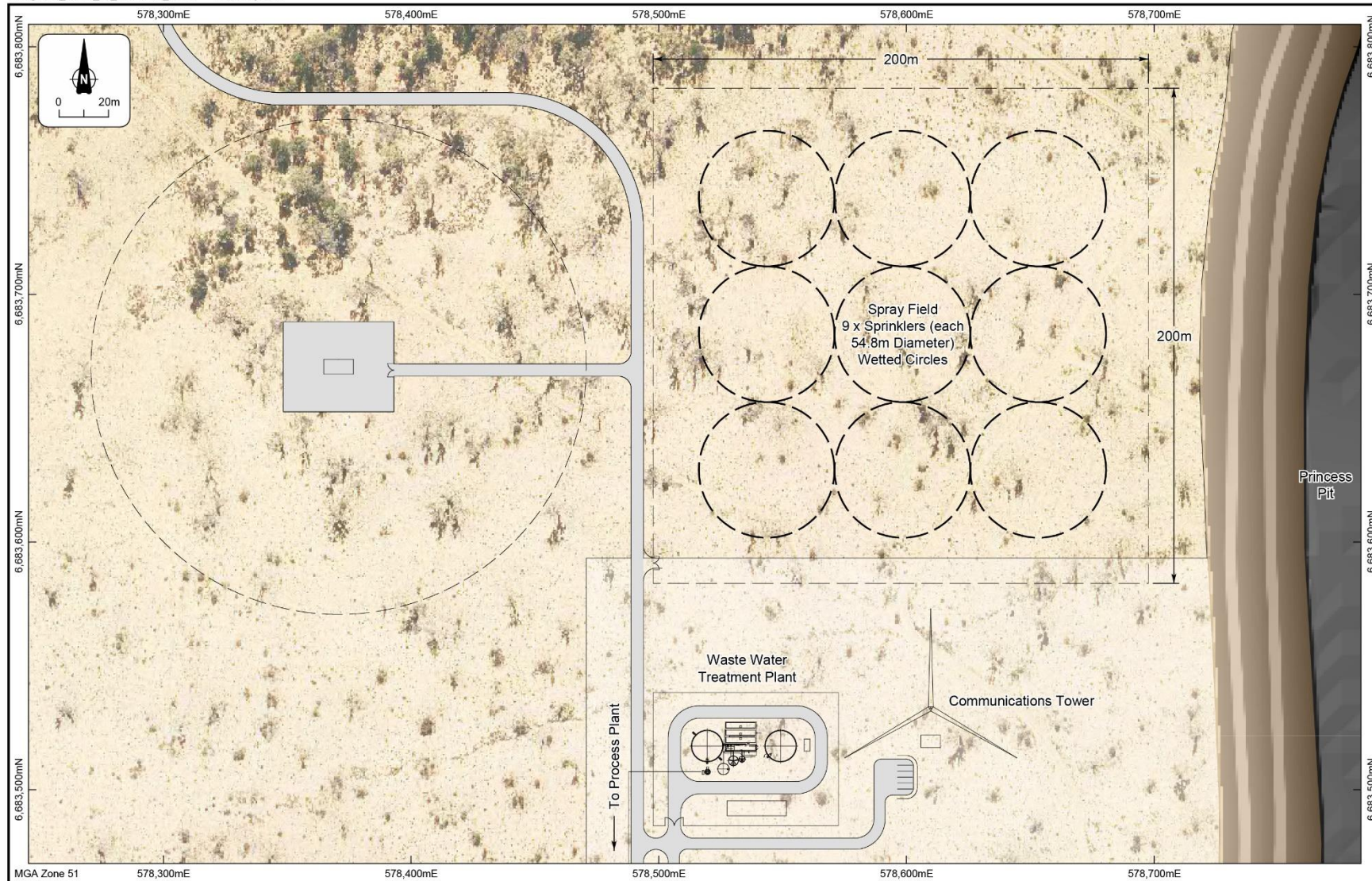


Figure 3: Location of WWTM Mining Plant Support within the Mulga Rock Project

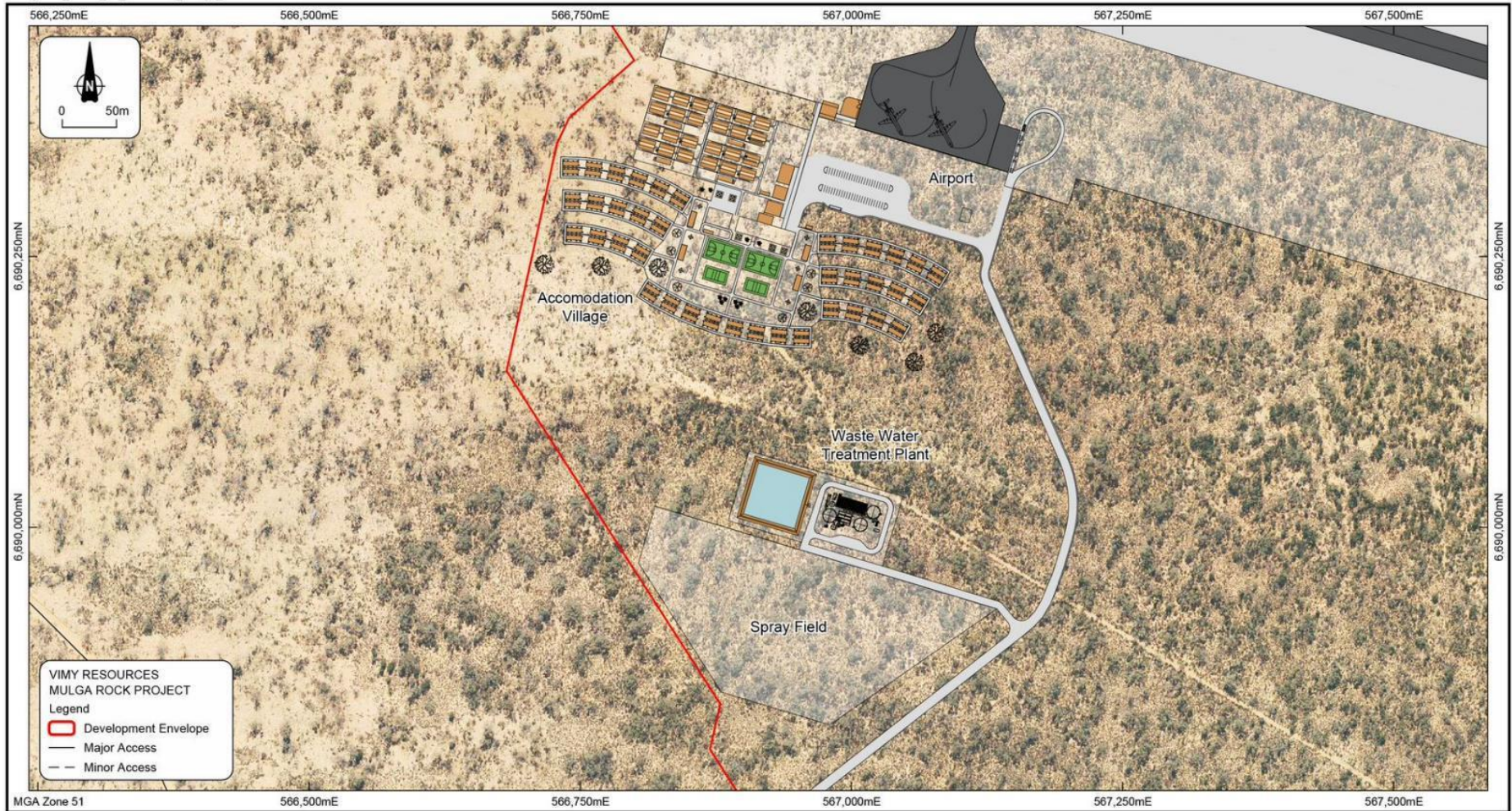


Figure 4: Location of accommodation within the Mulga Rock Project



Figure 5: Location of the WWTP Village Accommodation spray field area

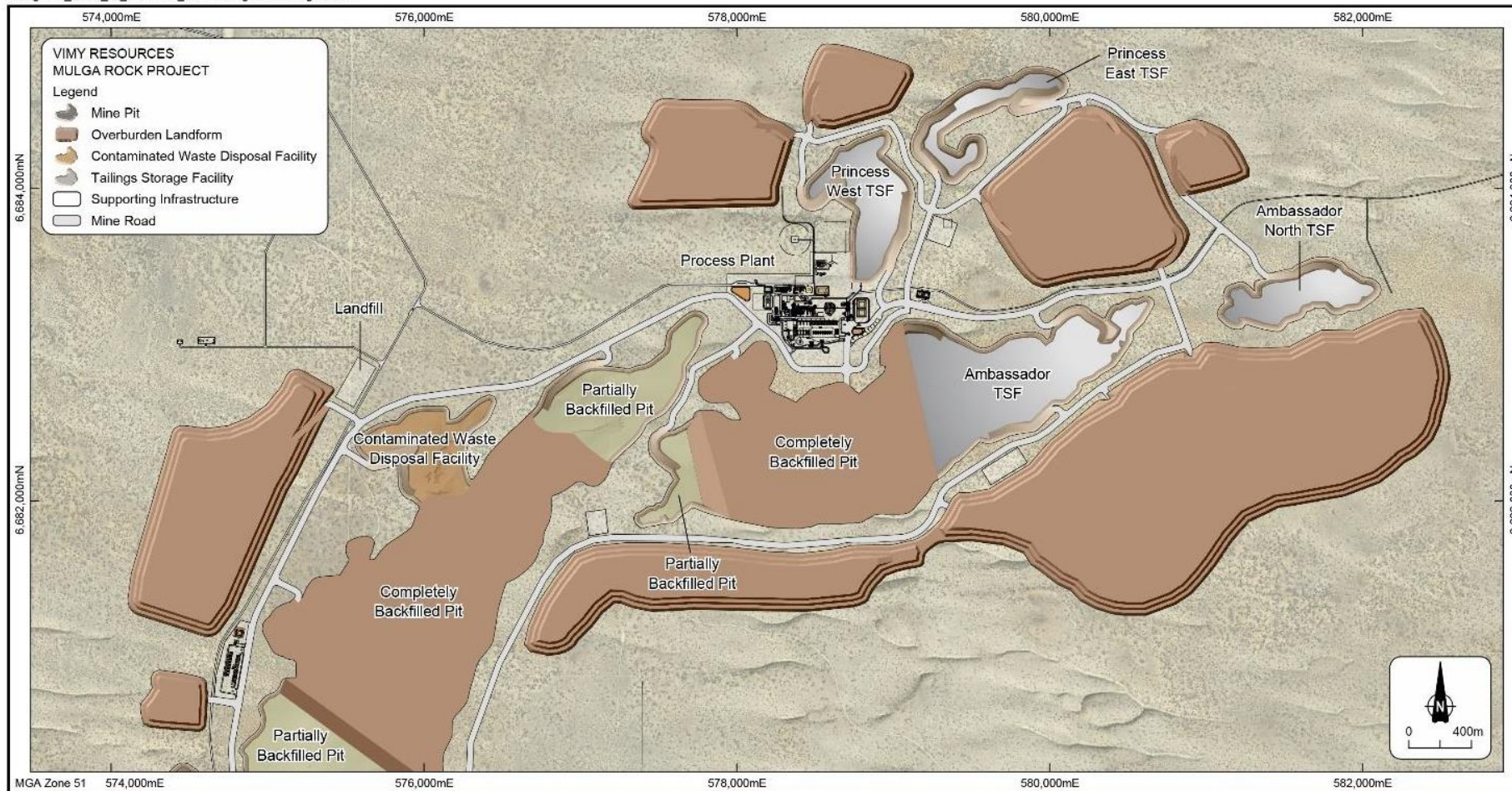


Figure 6: Location of the Putrescible Landfill within the Mulga Rock Project

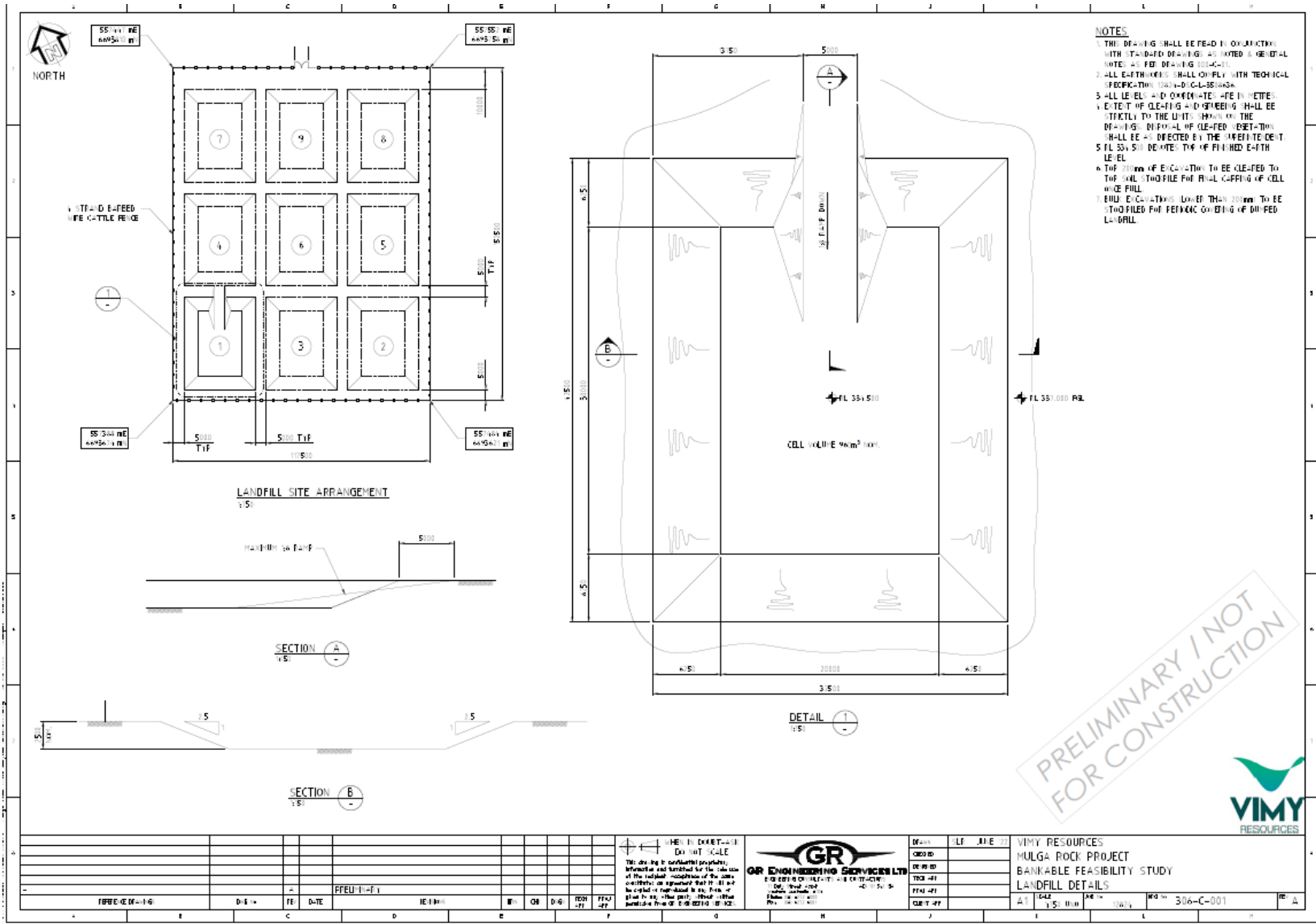


Figure 7: Putrescible landfill cell design
Works Approval: W6678/2022/1

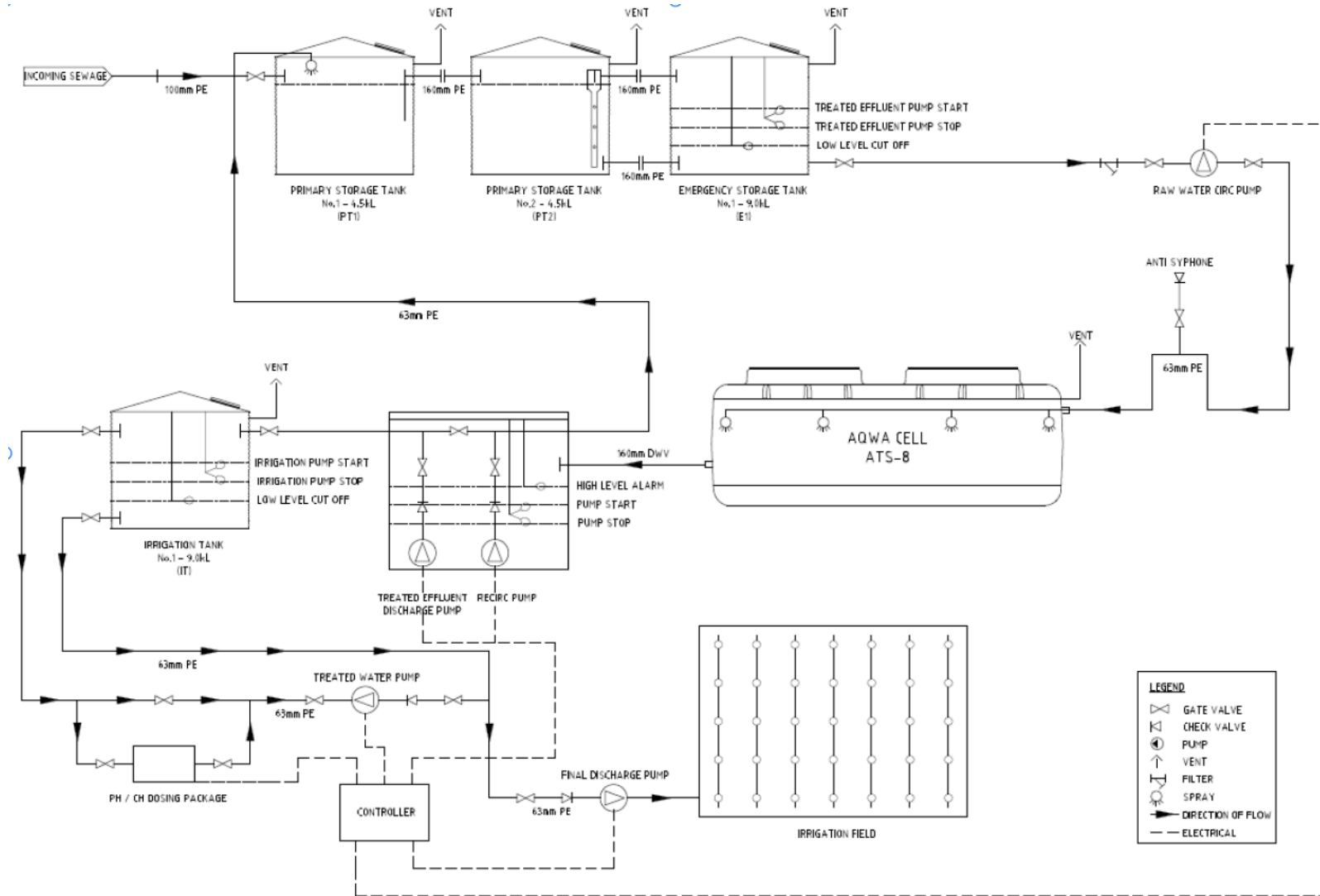


Figure 8: WWTP Operational Schematic

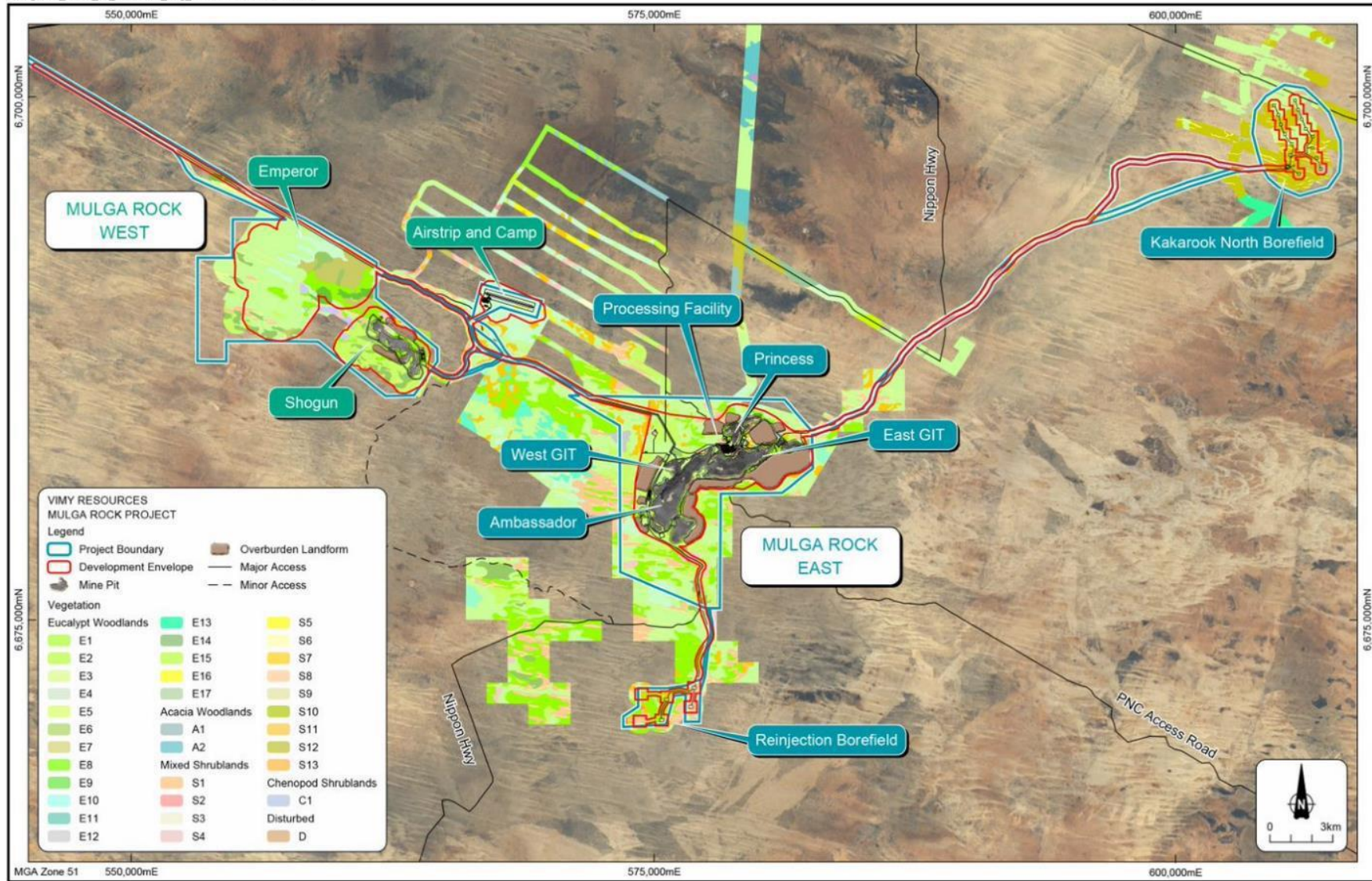


Figure 9: Mapped Vegetation within the Project Boundary

Works Approval: W6678/2022/1

3. Risk assessment

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

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

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation which have been considered in this 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

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Excavation works and vehicle movements associated with landfill construction and WWTP	Air/windborne pathway	<ul style="list-style-type: none"> No sensitive receptors in proximity. A water cart will be used to wet down dust-generating surfaces. Dust suppression will be applied on access roads and work areas and where needed to minimise the dust from vehicles and equipment. Excavation activities will be restricted during high wind events and excessive dust. Speed limits will apply for vehicles travelling on unsealed roads. Dust suppression will be undertaken in accordance with a Soil Monitoring and Management Plan. Water cart personnel will be required to undertake training before operating machinery. If required, fit for purpose water carts with modified sprayers, to prevent overspray, will be used on site. Dust monitoring will be undertaken by a Registered Surface Ventilation and Noise Officer. Land clearing will be managed using the Ground Disturbance Activity Permit system, preventing unnecessary clearing or minimising necessary clearing.
Noise			<ul style="list-style-type: none"> No sensitive receptors in proximity. Construction will only occur during daylight hours. Equipment will be maintained in good working order. Maximum sound power levels specified for equipment.

Emission	Sources	Potential pathways	Proposed controls
			<ul style="list-style-type: none"> Complaints relating to noise will be recorded and investigated.
Spills/unintended releases of hydrocarbons or chemicals	Chemical handling and storage	Overland runoff or seepage to land and groundwater	<ul style="list-style-type: none"> Siting of WWTP on cleared and compacted ground. Chemical storage area to be fully contained and bunded where required. Spill kits will be located throughout the project area, and staff will be trained in the method of use for cleaning up spills and the disposal of contaminated material. All staff to be trained in spill response. All spills be recorded in the online incident reporting system. All spills to be recovered, treated and removed to an approved facility for disposal.
Commissioning and Time Limited - Landfill Operation			
Dust	Disposal, covering and compaction of waste	Air/windborne pathway	<ul style="list-style-type: none"> No sensitive receptors in proximity. A water cart and water cannon will be used to wet down dust-generating surfaces. Excavation activities will be restricted during high-wind events. Speed limits will apply for vehicles travelling on unsealed roads. Routine dust monitoring will be undertaken by the registered Surface Ventilation and Noise Officer in accordance with the approved Health and Hygiene Management Plan. Dust suppression will be undertaken in accordance with the Soil Monitoring and Management Plan. Water cart personnel will be required to undertake training before operating machinery. If required fit for purpose water carts with modified sprayers, to prevent overspray, will be used on site.
Noise			<ul style="list-style-type: none"> No sensitive receptors in proximity. Construction will only occur during daylight hours. Equipment will be maintained in good working order. Maximum sound power levels specified for equipment. Complaints relating to noise will be recorded and investigated.
Odour			<ul style="list-style-type: none"> No sensitive receptors in proximity. Waste will be compacted and covered monthly as a minimum.
Windblown wastes			<ul style="list-style-type: none"> The landfill area will be fully fenced and signposted. The landfill will be secured at all times when not in

Emission	Sources	Potential pathways	Proposed controls
			<p>use.</p> <ul style="list-style-type: none"> Waste will be covered when transported to the landfill. Wastes will be collected and returned to the landfill on a monthly basis. No windblown waste beyond the boundary of the fence. All windblown waste is to be collected and returned to the active landfill cell. Waste will be stored in skip or wheelie bins prior to disposal at the landfill. The landfill will be constructed into cells, and only one cell will be operational at any one time.
Controlled Waste	Waste fuels, oils and treatment chemicals	Overland runoff or seepage to land and groundwater	<ul style="list-style-type: none"> All controlled waste will be segregated in containers, stored on concrete pads and clearly signed. All controlled waste will be tracked and removed off-site to an approved facility. Waste fuels and oil will be stored in a bunded area and in accordance with AS1940 and AS1692.
Pest, pathogen and disease vectors	Operational putrescible landfill area	Attraction and harbouring of pests	<ul style="list-style-type: none"> Active landfill area will be inspected regularly for vermin and fauna. Fence to be maintained and secured at all times. Active cell to be progressively covered with fill material.
Leachate	Interaction of deposited wastes with stormwater	Seepage to land and groundwater	<ul style="list-style-type: none"> Surface water is to be diverted around the landfill trenches to prevent infiltration into the waste mass.
Contaminated stormwater		Overland runoff	
Contaminated solid waste material	Soil, waste, Personal Protective Equipment	<p>Air/windborne pathway</p> <p>Seepage to land or overland runoff</p>	<ul style="list-style-type: none"> No radioactive waste or material is permitted to be buried at the putrescible landfill. Site activities are to be managed in accordance with the site's Radiation Management Plan.
Fire related emissions	Fire within the waste mass	<p>Air/windborne pathway</p> <p>Seepage to land or</p>	<ul style="list-style-type: none"> A firebreak of at least 3 m will be constructed and maintained around the boundary of the premises.

Emission	Sources	Potential pathways	Proposed controls
		overland runoff	
Commissioning and time-limited operations - Wastewater Treatment Plant Operation			
Dust	Vehicle movements	Air/windborne pathway	<ul style="list-style-type: none"> No sensitive receptors in proximity. Deployment of water carts. Implementation of vehicle speed restrictions.
Noise	Pumps Operation of vehicles and machinery	Air/windborne pathway	<ul style="list-style-type: none"> No sensitive receptors in proximity.
Odour	Commissioning works WWTP operations and sludge removal	Air/windborne pathway	<ul style="list-style-type: none"> No sensitive receptors in proximity. Fully contained WWTP. WWTP is to be maintained in accordance with the manufacturer's specifications. Sludge will be dried before disposal at the landfill.
Spills/Untreated releases of partially treated wastewater or solid waste	Infrastructure and equipment failure Maintenance works (accidental spills)	Overland runoff or seepage to land and groundwater	<ul style="list-style-type: none"> Siting of WWTP on cleared and compacted ground. WWTP is equipped with systems to monitor the tank volume levels and alarms to alert the operator of containment loss.
Contaminated or potentially contaminated stormwater	Stormwater interaction with plant and irrigation sprayfield		<ul style="list-style-type: none"> Siting of WWTP on cleared and compacted ground. Construction of windrows to redirect stormwater runoff away from WWTP.
Spills/unintended releases of hydrocarbons or chemicals	Chemical handling and storage		<ul style="list-style-type: none"> Siting of WWTP on cleared and compacted ground. Chemical storage tanks and chemical storage areas will be fully contained and banded.
Treated effluent	Irrigation sprayfield	Direct application to vegetation and overland runoff or seepage to land and groundwater	<ul style="list-style-type: none"> Physical separation. Controlled dispersal over dedicated irrigation area. Cessation of irrigation during and immediately after major rainfall events. Scheduled spray field maintenance and inspections. Construction of windrows to redirect stormwater runoff. Effluent discharge from the WWTP will be measured and monitored according to the <i>Guidelines for the Non-potable uses of Recycled Water in Western Australia</i>.

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 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

Receptors	Distance from prescribed activity
Human receptors	
No nearby receptors.	Nearest sensitive residential receptor is Pinjin Pastoral Station approximately 105 km away.
Environmental receptors	
Watercourses	No surface water courses have been identified.
Groundwater	Groundwater within the mining areas of the MRP is located approximately 29 – 49 m below natural ground level (290 mAHD).
Threatened Ecological Community (TEC)	No known threatened ecological community (TEC) occur in or near the prescribed activity.

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 W6678/2022/1 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. putrescible landfilling and sewage treatment 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 and operation

Risk events					Risk rating ¹	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood			
Construction								
Excavation works and vehicle movements associated with landfill construction	Dust	Air / windborne pathway causing impacts to health and amenity	No nearby receptors	Refer to Section 3.1	C = Minor L = Rare Low Risk	Y	2	N/A
	Noise				C = Minor L = Rare Low Risk	Y	N/A	
Land clearing and earthworks Positioning of plant associated equipment including vehicle movements Installation of sprayfield	Dust	Air/windborne pathway causing impacts to native vegetation communities (smothering of foliage and flowers and disturbance to fauna)	Remnant native vegetation	Refer to Section 3.1	C = Slight L = Unlikely Low Risk	Y	2	N/A
	Noise and vibration	Air/windborne pathway and vibration through soil with impacts on (disturbance to native fauna)	Native fauna	Refer to Section 3.1	C = Slight L = Unlikely Low Risk	Y	N/A	N/A
	Spills/unintended releases of hydrocarbons or chemicals	Seepage to soil and groundwater with potential impacts on native vegetation	Native fauna (including soil fauna and remnant vegetation)	Refer to Section 3.1	C = Minor L = Rare Low Risk	Y	1, 3 and 4	N/A
Landfill Operation (including time-limited-operations operations)								
Disposal, covering and compaction of waste	Dust	Air / windborne pathway causing impacts to health and amenity	No nearby receptors	Refer to Section 3.1	C = Minor L = Rare Low Risk	Y	2	N/A
	Noise			Refer to Section 3.1	C = Minor L = Rare Low Risk	Y	N/A	N/A
	Odour			Refer to Section 3.1	C = Minor L = Rare Low Risk	Y	1, 16, 17, 18, and 19	N/A
	Windblown wastes			Refer to Section 3.1	C = Minor L = Unlikely Medium Risk	Y	1 and 16	N/A

Risk events					Risk rating ¹	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood			
Interaction of deposited wastes with stormwater	Leachate / contaminated stormwater	Seepage to land and groundwater	Groundwater Remnant native vegetation Native fauna	Refer to Section 3.1	C = Minor L = Possible Medium Risk	Y	1, 16, 17, 18 and 19	N/A
		Overland runoff		Refer to Section 3.1	C = Minor L = Unlikely Medium Risk	Y	1, 16, 17, 18 and 19	N/A
Fire within the landfill	Fire washwater	Seepage to land and groundwater and overland runoff	Remnant native vegetation Native fauna	Refer to Section 3.1	C = Major L = Rare Medium Risk	Y	Condition 1 and 16	N/A
	Smoke and particulates	Air/windborne pathway causing impacts to native vegetation and fauna						
Wastewater Treatment Plant - Commissioning and time-limited operations								
Commissioning works WWTP operations and sludge removal	Odour	Air/windborne pathway with impacts on amenity	No nearby receptors	Refer to Section 3.1	C = Slight L = Unlikely Low Risk	Y	Condition 1, 7, 8, 9, 10, 11, 16, 17 20 and 21	N/A
Infrastructure and equipment failure	Spills/Untreated releases of partially treated wastewater or solid waste	Seepage to soil and groundwater resulting in elevated soil nutrients	Native fauna (Including soil fauna) and remnant vegetation	Refer to Section 3.1	C = Slight L = Unlikely Low Risk	Y	Condition 1, 3 and 4	N/A
Stormwater interaction with plant and irrigation sprayfield	Contaminated or potentially contaminated stormwater	Seepage to soil and groundwater resulting in elevated soil nutrients	Remnant native vegetation	Refer to Section 3.1	C = Slight L = Unlikely Low Risk	Y	Condition 1 and 16	N/A
Chemical handling and storage	Spills/unintended releases of hydrocarbons or chemicals	Seepage to soil and groundwater resulting in damage to vegetation (root systems)	Remnant native vegetation	Refer to Section 3.1	C = Slight L = Unlikely Low Risk	Y	Condition 1, 3 and 4	N/A
Irrigation sprayfield	Treated effluent	Direct application to vegetation and seepage to soil and groundwater resulting in nutrient accumulation and toxicity	Groundwater Remnant native vegetation Native fauna	Refer to Section 3.1	Refer to Section 3.3 below			

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 Risk assessment of treated wastewater discharge

3.3.1 Description of risk event

Irrigation using treated wastewater has the potential to cause soil and groundwater contamination where contaminant and hydraulic loading rates exceed the capability for soil buffering and uptake by vegetation within the receiving environment. Contaminants accumulate within soil and may then infiltrate beyond the root-zone of vegetation and enter groundwater. This depends on the extent to which soil microbial processes, sorption and volatilisation are able to remove chemical constituents from soil pore-water. During rainfall events or when soil moisture conditions are high there is an increased potential for this to occur.

3.3.2 Identification and general characterisation of emission

The Applicant proposes to discharge up to 400 m³/day (146 ML/yr) of treated wastewater (from sewage treatment) to two irrigation sprayfields totaling 12 ha (6 ha each). This results in a hydraulic loading rate of 33.33 kL/ha/day or 12.17 ML/ha/yr. The Applicant has provided details of the expected treated effluent discharge concentrations from the WWTP, which are set out in Table 5 below.

Table 5: Expected Treated Effluent Quality Discharge Concentrations

Parameter	Expected Treated Effluent Discharge Concentrations
5-Day Biochemical Oxygen Demand (BOD ₅)	<20 mg/L
pH	6.5 – 8.5
Total Suspended Solids (TSS)	<30 mg/L
Total Nitrogen (TN)	<40 mg/L
Total Phosphorus (TP)	<10 mg/L
<i>Escherichia coli</i> (<i>E. coli</i>)	<1000 cfu/100 mL
Residual Free Chlorine	0.2 – 2.0 mg/L

3.3.3 Impact of risk event

Treated wastewater may contain elevated concentrations of nutrients as well as metals, pathogens and oil and grease. During discharges of treated wastewater to land (source) the release of contaminants (emission) by overland flow and subsurface seepage (pathway) may cause adverse impact to terrestrial and aquatic ecosystem health, surface water quality, contamination of soil and degradation of groundwater quality (adverse impact). Pathogens may also cause impact to human health.

High solids loading and saline treated wastewater may also decrease the permeability and cation exchange capacity of receiving soils. This increases the erodibility of soil and may cause impact to surrounding ecosystems due to increased nutrient and sediment transported through surface runoff.

Treated wastewater, if irrigated correctly, should occur at a hydraulic and contaminant loading adequate for the receiving environment to appropriately buffer and uptake, thereby preventing or minimising adverse impacts to the environment.

3.3.4 Criteria for assessment

The following criteria have been used to evaluate the risk associated with the discharge of treated wastewater via irrigation at the Premises:

- Environment – Risk Criteria Table 1 (DWER 2020b);
- *Guideline: Environmental Siting* (DWER 2020a);
- *Guidelines for the non-potable uses of recycled water in Western Australia* (DoH 2011);
- *Water Quality Protection Note WQPN 22: Irrigation with nutrient-rich wastewater* (DoW 2008).

Nutrient loadings to the irrigation area are calculated using the following equation:

$$N_L = \frac{N \times Q \times 365}{1000 \times A}$$

Where:

- N_L = nutrient loading (kg/ha/yr)
- N = discharge nutrient concentration (mg/L)
- Q = discharge rate of treated wastewater (m³/day)
- A = land area (hectares)

3.3.5 Sprayfield sizing and nutrient loading assessment

The Applicant has advised that the location of the sprayfield was selected on the basis of the natural sandy soils present being sufficiently permeable to accommodate both proposed irrigation volumes and expected rainfall events. Soils within the proposed irrigation areas were considered by the Applicant to be Risk Category D soils, as set out in *Water Quality Protection Note 22: Irrigation with nutrient-rich wastewater*. The maximum nutrient application rates for nitrogen and phosphorus on Category D soils are 480 kg/ha and 120 kg/ha respectively.

Table 6: Predicted Irrigation Nutrient Loading

Parameter	Nitrogen (TN)	Phosphorus (TP)
Throughput (Total)	400 m ³ /d	
Expected effluent quality	<40 mg/L	<10 mg/L
Total effluent values	< 487 kg/ha/yr	< 122 kg/ha/yr
Irrigation area	12 ha (2 x 6 ha area)	
Guideline limit	480 kg/ha/yr	120 kg/ha/yr

In consideration of the maximum design nitrogen and phosphorus concentrations of the treated effluent (<40 mg/L and <10 mg/L respectively), the minimum sprayfield area required to irrigate the treated wastewater is calculated to be 12.2 hectares.

The Delegated Officer notes that the calculated loadings rates slightly exceed the Risk Category D limits specified in WQPN 22, when considering an irrigation area of 12 ha. These calculations are based on the maximum expected nutrient concentrations and maximum capacity of the wastewater treatment systems. It is unlikely that the treatment systems will be operated continuously at their maximum capacity and as a result actual loading rates received at the irrigation sprayfields during operation would likely be below the guideline limits for Category D soils. The Applicant will be required to comply with the Risk Category D loadings limits specified in WQPN 22 through regulatory conditions.

3.3.6 Consequence of risk event

The Delegated Officer has determined that based on the siting of the premises, the emissions may cause low level on-site impacts, minimal off-site impacts at a local scale and no detectable impacts on a wider scale. Therefore, the Delegated Officer considers the consequence of the emissions to be **Minor**.

3.3.7 Likelihood of risk event

The assessment above has determined that nutrient loading rates are at or slightly above the Risk Category D guideline values specified in WQPN 22. Accordingly, the Delegated Officer considers the risk event could occur at some time, where the maximum operational capacities of the WWTPs are reached. Therefore, the Delegated Officer considers the likelihood of the risk event to be **Possible**.

3.3.8 Overall rating of risk event

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix contained in the *Guideline: Risk Assessment* (DWER 2020b) and has determined the overall rating for the risk event to be **Medium**.

Medium risk events are acceptable provided they are subject to some regulatory control. This generally means the inclusion of outcome-based conditions on the relevant licence. These conditions will be comprised of the Applicant's proposed controls and additional controls imposed by the department.

3.3.9 Regulatory controls

Table 7: Proposed regulatory controls for wastewater irrigation

Condition no.	Condition type	Reason
1 – Table 1: Row 2	Key specifications for the WWTP infrastructure have been included as construction and installation requirements.	The Delegated Officer has considered the key features of the infrastructure and equipment proposed to be installed through the Application. These features have been listed as regulatory controls to ensure that the construction of this infrastructure remains consistent with the risk assessment undertaken. The specifications are derived from infrastructure and equipment features proposed in the Application.
1 – Table 1: Row 3		
1 – Table 1: Row 4		
1 – Table 1: Row 5		
8 – Table 2: Row 1 and 2	A requirement to maintain inflow and outflow meters has been included as a regulatory control.	Flow meters are required to monitor compliance with specified operational limits during commissioning.
8 – Table 2: Row 3 and 4	Requirements relating to the management of discharge at the irrigation area have been included as regulatory controls.	The Delegated Officer has considered the Applicant's proposed operational controls for management of the wastewater irrigation area are suitable as regulatory controls during commissioning.
9	Requirements relating to acceptable waste types received at the WWTPs have been included.	Only acceptance of domestic sewage is authorised to ensure that the assumptions of the risk assessment remain valid.

Condition no.	Condition type	Reason
10	A requirement for treated wastewater discharge to only occur to the irrigation spray field has been included as a regulatory control.	Only discharges of treated wastewater to the irrigation spray field are authorised to ensure that the assumptions of the risk assessment remain valid.
11	A requirement for monitoring of treated wastewater discharge concentrations during commissioning has been included as a regulatory control.	Monitoring of treated effluent during commissioning is required to ensure that the WWTP is operating according to proposed specifications and limits.
16 – Table 6: Row 2 and 3	A requirement to maintain inflow and outflow meters has been included as a regulatory control.	Flow meters are required to monitor compliance with specified operational limits during time limited operations.
16 – Table 6: Row 4 and 5	Requirements relating to the management of discharge at the irrigation area have been included as regulatory controls.	The Delegated Officer has considered the Applicant's proposed operational controls for management of the wastewater irrigation area are suitable as regulatory controls during time limited operations.
17	Requirements relating to acceptable waste types received at the WWTPs have been included.	Only acceptance of domestic sewage is authorised to ensure that the assumptions of the risk assessment remain valid.
20	Concentration limits for treated wastewater discharges during time limited operations have been included as regulatory controls.	The proposed maximum contaminant concentrations for treated wastewater discharge have been specified as limits to ensure that the assumptions of the risk assessment remain valid. The TN and TP loading limits for Risk Category D soils have been specified to ensure that excess nutrient loading to the sprayfields does not occur.
21	A requirement for monitoring of treated wastewater discharge concentrations has been included as a regulatory control.	Monitoring of treated effluent during time limited operations is required to ensure that the WWTP is operating according to proposed specifications and limits.

4. Consultation

Table 8 provides a summary of the consultation undertaken by the Department.

Table 8: Consultation

Consultation method	Comments received	Department Response
Application advertised on the Department's website	None received	N/A
Conservation Council of Western Australia (CCWA)	<p>Summary of CCWA comments:</p> <p>Class II Facility – Contaminated Waste –</p> <ol style="list-style-type: none"> The proponent has not included any waste acceptance criteria for contaminated waste they intend to store at the class II facility (noting that a class II facility cannot accept radioactive waste). <p>Wastewater Treatment Plant –</p> <ol style="list-style-type: none"> Concerned about potential inputs to WWTP, location of irrigation field and monitoring. <p>Clarity on regulatory responsibilities and processes –</p> <ol style="list-style-type: none"> There is a lack of clarity about the relationship between the agencies that have responsibilities for regulating wastes and DWER role in the regulation of radioactive waste. <p>Fauna –</p> <ol style="list-style-type: none"> There has not been adequate acknowledgement or consideration of the priority species in the area of the risks of the class II facility and WWTP on attracting feral animals. <p>Aboriginal Heritage –</p> <ol style="list-style-type: none"> While the company have an approved Aboriginal Heritage management plan and have opted to avoid and protect the known existing heritage sites we are concerned that there are no strong commitments or requirements for ongoing heritage surveying with Traditional Owners and custodians and experts who would be able to identify any other sites and or artefacts that exist in the area. 	<p>Class II Facility – Contaminated Waste –</p> <ol style="list-style-type: none"> The applicant will not be permitted to dispose of radioactive waste at the Class II landfill facility. Any waste disposed at the Class II landfill facility must comply with the Landfill Waste Classification and Waste Definitions 1996 (as specified in respective conditions or the works approval and any subsequent licence). Any contaminated waste not meeting Class II requirements must be disposed of at an approved facility. <p>Wastewater Treatment Plant –</p> <ol style="list-style-type: none"> The WWTP is a typical packaged wastewater treatment plant that services sewage and wastewater from the accommodation, catering, and other ablution facilities. Treated wastewater and the performance of the WWTP are required to be monitored. The designed application rates of the irrigation area are in accordance with <i>WQPN 22 – Irrigation with nutrient-rich wastewater</i>. The Works Approval and Licence will be conditioned to ensure monitoring of input and outputs, water quality parameters and wastewater infrastructure occurs. The Works Approval and Licence will be conditioned to include monitoring of the relevant water quality parameters. <p>Construction of the site, including pre-strip of high-grade deposits, will take 18 months to complete, after project commencement. During this period, no ore will be exposed, resulting in no radiation hazards to the workforce. Radioactive particles, heavy metals and Potentially Acid Forming (PAF's) have not been included in the list of parameters as the risk of contamination is considered low during Stage 1 construction. Further consultation will occur for the Stage 2 and 3 works approval of the mine site operations, which will cover:</p> <ul style="list-style-type: none"> Processing or beneficiation of metallic or non-metallic ore (Category 5) Mine dewatering (Category 6) Electric power generation (Category 52) Fuel-burning (Category 67) Bulk storage of chemicals (Category 73) <p>When the mine site is operational, it will be required to comply with its Operational Radiation Management Plan and Guideline for Managing Naturally Occurring Radioactive Material (NORM) in mining and mineral processing.</p> <p>Clarity on regulatory responsibilities and processes –</p> <ol style="list-style-type: none"> The Department has responsibility under Part V Division 3 of the EP Act for granting works approvals and licensing or registration of prescribed premises. Regulation 5 of the <i>Environmental Protection Regulations 1987</i> (EP Regulations) specifies that any premises listed in Schedule 1 of the EP Regulations is a prescribed premises. A premises becomes prescribed under Schedule 1, Parts 1 and 2 where the activities on the premises meet the definition provided and the threshold. <p>DMIRS and the Radiological Council is the primary agency for regulating radiation. Radiation safety of mining operations is co-regulated with the Radiological Council. The Radiological Council and DMIRS may need to consider and approve a project if it is dealing with radioactive substances (e.g. ore, product, waste) that contain uranium or thorium or workers are likely to receive doses of radiation in excess of an effective dose of 1 milliSieverts (0.001 Sv) per year arising from mining or exploration activities or there is the potential to deliver radiation exposures to the public dose that exceed dose constraints.</p> <p>DWER will consult relevant Departments such as DoH and DMIRs. Noting that Stage 1 of the Project is only for the construction of the mine camp accommodation and mechanical workshop facilities. Stages 2 & 3 will address the control and management of material contaminated with radioactive waste.</p> <p>Concerns raised regarding consultation is noted and any future advertised stages will be referred to CCWA for comment.</p> <p>Fauna –</p> <ol style="list-style-type: none"> The proposal was assessed under Part IV and subsequent Ministerial Statement (MS1046) was issued by the Minister for Environment. The proposal is to mine four poly-metallic deposits containing commercial concentrations of uranium and to produce uranium oxide concentrate and other metal concentrates, including copper, zinc, nickel and cobalt. The Statement also acknowledges the proposal also includes the construction of associated mine infrastructure consisting of mine dewatering and reinjection infrastructure (including bore fields and pipelines), non-mineralised overburden landforms, run of mine stockpile areas, transport corridors, processing facilities, an above-ground Tailings Storage Facility, in-pit Tailings Storage Facilities, offices, maintenance workshops, laydown areas, ancillary infrastructure, accommodation facilities, airstrip, roads, fuel and chemical storage, and a diesel or gas fired power station. <p>MS1046 set out the permissible development envelope in accordance with Table 2 of the Statement. Stage 1 construction is located within the development envelope. Any activities onsite are required to comply with the sites approved Terrestrial Fauna Monitoring and Management Plan (TFMMP). The requirement of the TFMMP requires the operation to ensure fauna is not impacted, which includes:</p>

Consultation method	Comments received	Department Response
		<ul style="list-style-type: none"> ○ Maintaining a register to record sightings and impacts on the conservation of significant fauna due to operational activities. ○ Environmental Inductions to ensure that all new personnel entering the Mulga Rock Uranium Project (MRUP) are aware of the environmental qualities within the MRUP and how their actions may impact on these qualities. ○ Environmental Training to ensure that all personnel undertaking works that may have either a direct or indirect impact on the conservation of significant fauna species are appropriately trained are competent to perform the task, and that fit-for-purpose equipment is used to minimise the environmental impacts. ○ Stage 1 of the project will also require areas to be fenced to prevent the entry of fauna, and regular inspections and integrity of these areas are undertaken. <p>Aboriginal Heritage –</p> <p>5. The proposed Stage 1 works have not been identified as an area of aboriginal significance. The applicant is however required to comply with its Construction Environmental Management Plan (CEMP), Ministerial Statement 1065, Mining Approval under the <i>Mining Act 1978</i> and the <i>Aboriginal Heritage Act 1972</i>. Concerns raised regarding consultation is noted, however it is understood that the Mulga Rock Uranium Project Aboriginal Heritage Plan (Rev1.1) satisfied the requirements of condition 11 of MS 1046 in January 2019.</p>
Shire of Mckenzie advised of proposal	None received	N/A
Department of Mines, Industry Regulation and Safety (DMIRS) advised of the proposal	None received	N/A
Department of Health	<p>Water Supply and Wastewater Disposal</p> <p>The Department has no objections to the proposed wastewater treatment plant subject to an 'Application to Construct or Install an Apparatus for the Treatment of Sewage' for any proposed on site wastewater disposal system being submitted to the relevant local government authority for assessment in accordance with the <i>Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974</i> (external site). Further details on the application process can be found at: https://ww2.health.wa.gov.au/Articles/A_E/Apply-to-install-a-wastewater-system</p> <p>Public Health Impacts</p> <p>DOH recommends that any waste asbestos containing materials should be separated and disposed of within a specially constructed containment cell on site. An "Asbestos Management Plan" should be prepared to monitor and manage asbestos waste, and this should be enshrined within the DWER licence</p> <p>The deposit of wastes in land (landfill) is a land use specifically regarded by DWER to be a cause of 'contaminated sites' requiring classification under the <i>Contaminated Sites Act 2003</i> (CS Act), irrespective of whether the landfill site is adequately regulated or controlled, or whether it is known or suspected of posing a risk to public health, the environment and environmental values. As such the proponent may wish to consider reporting the site under S11 of the Act on a prescribed Form 1. The proponent should discuss their responsibilities and liabilities under the CS Act with DWER</p>	<p>Wastewater disposal - The department notes the DOH's comments and advice in relation to wastewater disposal and approvals to be considered by the applicant.</p> <p>Public Health Impacts - Asbestos waste has not been approved to be accepted or buried onsite. All waste disposed of at the landfill will be required to comply with Class II Putrescible Landfill Facility to accept Type 1 Inert Waste and Putrescible Waste, as defined in the <i>Landfill Waste Classification and Waste Definitions</i>. Asbestos has not been identified as a risk for the site's operations. No waste streams have been identified with the potential to generate asbestos waste. An application for approval will need to be submitted to the department if the proponent wishes to bury asbestos waste.</p> <p>Provisions under the <i>Contaminated Sites Act 2003</i> - Form 1 is noted and is outlined here for the applicant's awareness and consideration.</p>

Consultation method	Comments received	Department Response
Applicant provided with draft documents	<p>Applicant provided a copy of the draft works approval and Decision Report.</p> <ul style="list-style-type: none"> Applicant confirmed the WWTP will be continuously monitored for pH and Chlorine. Applicant requested the Decision Report to confirm Deep Yellow have merged with Vimy and Deep Yellow is the ultimate holding company in the Deep Yellow group of companies 	The Decision Report and Works Approval has been updated to reflect comments from the applicant.

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. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Health 2011, *Guidelines for the Non-potable Uses of Recycled Water in Western Australia*, Perth, Western Australia.
3. Department of Water (DoW), *Water Quality Protection Note WQPN 22: Irrigation with nutrient-rich wastewater* (DoW 2008).
4. Department of Water and Environmental Regulation (DWER) 2020a, *Guideline: Environmental Siting*, Perth, Western Australia.
5. DWER 2020b, *Guideline: Risk Assessments*, Perth, Western Australia.
6. Vimy Resources Terrestrial Fauna Monitoring and Management Plan (Management-Based Condition Environmental Management Plan) Mulga Rock Uranium Project EHS-EMP-003 – 6 December 2019
7. Vimy Resources Limited Terrestrial Fauna Monitoring and Management Plan (Management-Based Condition Environmental Management Plan) Mulga Rock Uranium Project EMP-EHS-002 Version 1.2 Revised 13 February 2020.
8. Vimy Resources Limited Flora and Vegetation Monitoring and Management Plan (Management-Based Condition Environmental Management Plan) Mulga Rock Uranium Project Version .1.2
9. Vimy Resources Limited Soil Monitoring and Management Plan (Management-Based Condition Environmental Management Plan) Mulga Rock Uranium Project EMP-EHS-010 Version 1.4
10. Vimy Resources Limited Flora and Vegetation Monitoring and Management Plan (Management-Based Condition Environmental Management Plan) Mulga Rock Uranium Project.

Appendix 1: Application validation summary

SECTION 1: APPLICATION SUMMARY				
Application type				
Works approval	<input checked="" type="checkbox"/>			
Licence	<input type="checkbox"/>	Relevant works approval number:		None <input type="checkbox"/>
		Has the works approval been complied with?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
		Has time limited operations under the works approval demonstrated acceptable operations?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
		Environmental Compliance Report / Critical Containment Infrastructure Report submitted?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
		Date Report received:		
Renewal	<input type="checkbox"/>	Current licence number:		
Amendment to works approval	<input type="checkbox"/>	Current works approval number:		
Amendment to licence	<input type="checkbox"/>	Current licence number:		
		Relevant works approval number:		N/A <input type="checkbox"/>
Registration	<input type="checkbox"/>	Current works approval number:		None <input type="checkbox"/>
Date application received	18/3/2022			
Applicant and Premises details				
Applicant name/s (full legal name/s)	Narnoo Mining Pty Ltd (T/A Vimy Resources Limited)			
Premises name	Mulga Rock Uranium Project			
Premises location	M39/1104 – Expiry 18/10/2037			
	L39/252 – Expiry 09/02/2038			
Local Government Authority	Shire of Menzies			
Application documents				
HPCM file reference number:	DER/0001242022			
Key application documents (additional to application form):	Mulga Rock Project Stage 1 Works Approval Supporting Documentation Attachments 1A, 1B, 2, 3B, 5, 6A, 6B, 7, 8 and 9			
Scope of application/assessment				

<p>Summary of proposed activities or changes to existing operations.</p>	<p>Works approval application is for the construction of Stage 1 to support the mining operations. Stage 1 application comprises of:</p> <ul style="list-style-type: none"> • Sewage facility (Category 54) located on M39/1104 <p>Installation of two wastewater treatment plants (WWTPs) to treat sewage and wastewater from the accommodation village and the mine support buildings. Both WWTPs will be containerised submerged aerated filter (SAF) units requiring only connection from the sewage pump station and connection to a spray irrigation network.</p> <ul style="list-style-type: none"> • Putrescible landfill site (Category 89) located on L39/252 <p>When operational the site is estimated to produce over 650 tonnes of putrescible and 650 tpa of contaminated waste will be produced per year.</p> <p>Applicant proposes to construct a Class II Putrescible Landfill Facility to accept Type 1 Inert Waste and Putrescible Waste, as defined in the Landfill Waste Classification and Waste Definition Guidelines (DEC 2009). Source of waste will be mainly from waste generated from the accommodation village and the mine support buildings.</p> <p>The contaminated waste disposal facility will be managed in accordance with the Operational Radiation Management Plan approved by DMIRS and the Radioactive Waste Management Plan, currently under review by the Department of Mines, Industry Regulation and Safety (DMIRS). As a result, the Contaminated Waste Disposal Facility has not been included in the scope of this document</p>
--	--

Category number/s (activities that cause the premises to become prescribed premises)

Table 1: Prescribed premises categories

Prescribed premises category and description	production or design capacity	Proposed changes to the production or design capacity (amendments only)
Sewage facility (Category 54)	400 m ³ /d	N/A
Putrescible landfill site (Category 89)	650 tpa	N/A

Legislative context and other approvals

<p>Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p>Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input checked="" type="checkbox"/> MS1046 & Assessment No:1979</p>
<p>Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p>Ministerial statement No: MS1046 EPA Report No: 1979</p>
<p>Has the proposal been referred and/or assessed under the EPBC Act?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p>Reference No: 2013/7038 – Trim Record 2013-0000470163</p>

<p>Has the applicant demonstrated occupancy (proof of occupier status)?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p>Certificate of title <input type="checkbox"/> General lease <input type="checkbox"/> Expiry: Mining lease / tenement <input checked="" type="checkbox"/> Expiry: M39/1104 – Expiry 18/10/2037 L39/252 – Expiry 09/02/2038 Other evidence <input type="checkbox"/> Expiry:</p>
<p>Has the applicant obtained all relevant planning approvals?</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/></p>	<p>Approval: Expiry date: If N/A explain why?-</p> <p>Note - Application has been assessed under Part IV.</p> <p>A building permit is required for all Class 2 to 9 buildings, which includes the proposed accommodation, administration buildings, dry and wet messes and the laboratory. Discussions were held with David Haddon (Shire of Menzies) back in 2017 and building plans will be submitted to the Shire for approval prior to commencement of their construction.</p> <p>In addition the WWTP will be referred to DoH for assessment</p>
<p>Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>CPS No: Clearing is undertaken in accordance with MS1046</p>
<p>Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Application reference No: N/A Licence/permit No: N/A</p>
<p>Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Application reference No: Licence/permit No: Note: Will need to be referred to Kalgoorlie Regional Office..</p>
<p>Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Name: N/A Type: Has Regulatory Services (Water) been consulted? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Regional office: Goldfields</p>

Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: N/A Priority: P1 / P2 / P3 / N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to <u>WQPN 25</u>) referred to Swan Region/Goldfields for comment Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx</i>)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	DMIRS – Mining Act 1978
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A
Is the Premises subject to any EPP requirements?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A
Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i> ?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Classification: N/A Date of classification: N/A

Direct interest stakeholders

Shire of Menzies	Letter to be sent	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
DMIRS – Mining Division	Letter to be sent	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Department of Health	Letter to be sent	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>