



## Application for Works Approval

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

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<b>Works Approval Number</b>	W6894/2024/1
<b>Applicant</b>	Andy Well Mining Pty Ltd
<b>ACN</b>	158 108 895
<b>File number</b>	DER2024/000001
<b>Premises</b>	Gnaweeda Project Mining Tenement M51/882 MEEKATHARRA WA 6642 As defined by the Premises map in Figure 1
<b>Date of report</b>	4 July 2024
<b>Proposed Decision</b>	Intent to grant works approval

**MANAGER, RESOURCE INDUSTRIES  
INDUSTRY REGULATION (STATE-WIDE DELIVERY)**  
*Officer delegated under section 20  
of the Environmental Protection Act 1986*

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## 1. Decision summary

As a result of this assessment, works approval W6894 has been granted. 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 the premises.

## 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 22 December 2023, Andy Well Mining Pty Ltd (the applicant / Andy Well Mining) applied for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act). The application is to undertake construction works and time-limited operations at the Gnaweeda Project relating to Category 6: *Mine dewatering* and Category 64: *Class II putrescible landfill site*; as defined in Schedule 1 of the *Environmental Protection Regulations 1987* (and as listed on the works approval).

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 W6894/2024/1.

#### 2.2.1 Relationship to the Andy Well Gold Project

Andy Well Mining currently holds [L8698/2012/1](#) for the Andy Well Gold Project which sits on an adjacent mining tenement to the north-west, being M51/870. This site is currently in care and maintenance and does not form part of this proposal. The works approval and subsequent licence being sought for the Gnaweeda Project is therefore not intended to be used in conjunction with the Andy Well licence. The two projects are separate and while they may be combined in the future, that is not the intention at this stage.

Notwithstanding, Andy Well Mining intends to establish a haul road between the Andy Well mine and the proposed Gnaweeda Project to allow for the transportation of ore and materials between the two sites as required.

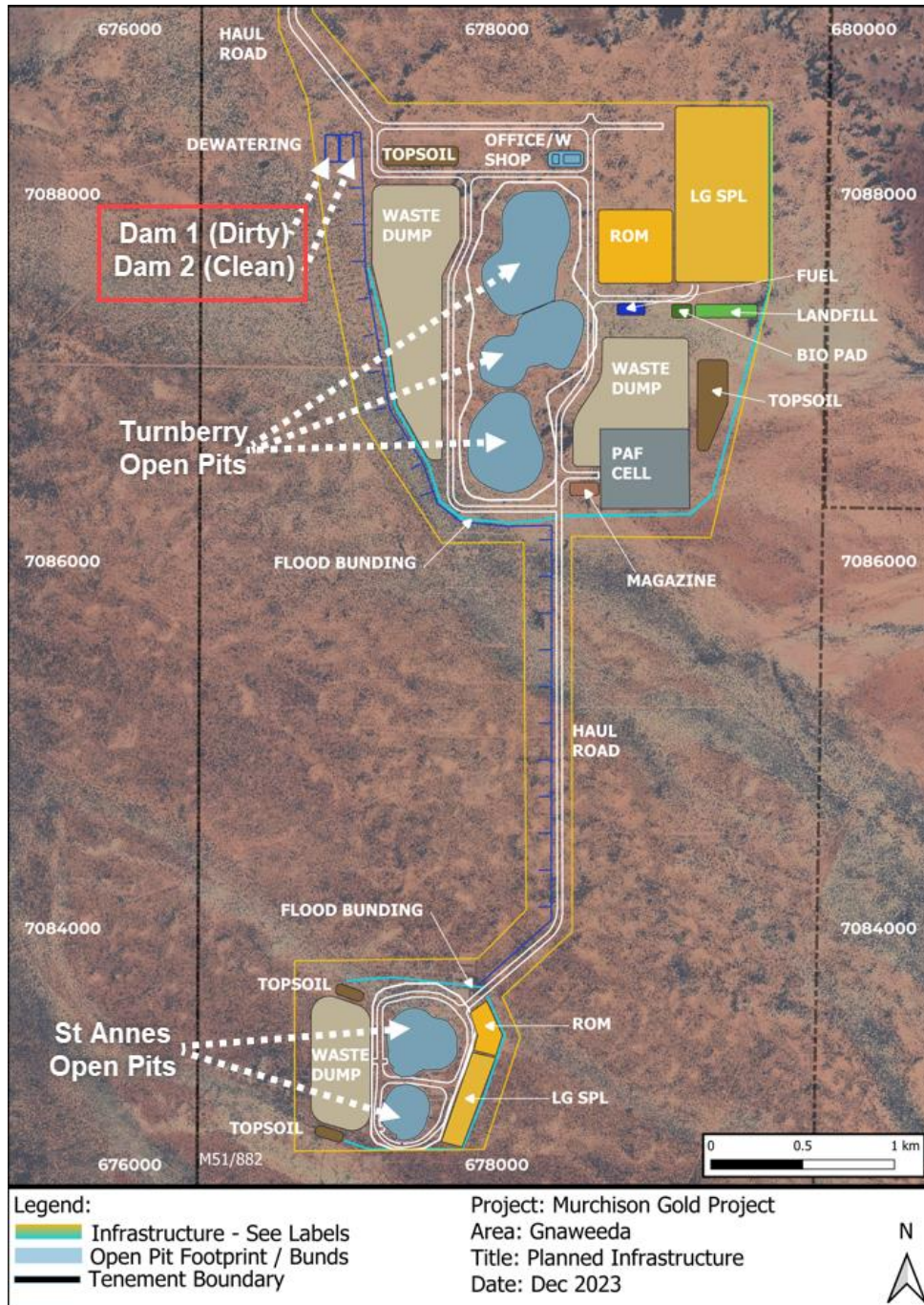
### 2.3 Overview of prescribed activities

The premises is approximately 37 km south-west of Meekatharra on mining tenement M51/882. The site is a new development with no known previous mining activities done in the area. For the purpose of dewatering the applicant has obtained a 5C licence to abstract water for the project under GWL17556 (obtained under the *Rights in Water and Irrigation Act 1914* (RIWI Act)).

The proposed activity involves construction of a 5.5 km long pipeline that will extend from Turnberry Pit to St Annes Pit for dewatering purposes to allow access to the gold-bearing ore bodies under the water table at both pits. It is proposed that the pipeline connecting the Turnberry and St Annes deposits, has spurs coming off at regular intervals and then a series of spigots and discharge points associated with each spur to allow for the discharge of surplus water to land (direct discharge).

The applicant has indicated that a 5C licence to take water has been obtained for the project (GWL17556) under the RIWI Act. The licence is for an annual allocation of 2GL. The licence is in force until October 24<sup>th</sup> 2026 and will be renewed prior to its expiry. A 26D licence issued under the RIWI Act will be required to install the dewatering bores around the pits. This licence will be applied for prior to the commencement of mining operations.

The project also plans to construct a landfill which will be required for wastes generated at the mine site that cannot be sent off site for recycling or disposal. Wastes designated for the landfill will be wastes such as lunch containers, wood, and cardboard, that are brought to site as part of normal operations. The proposed locations of the pipeline and landfill are shown in Figure 1.



**Figure 1: Site infrastructure layout**

## 2.4 Dewatering Discharge Options

### 2.4.1 Overview

The applicant has indicated that during normal operations, most of the water taken from dewatering will be used to control dust. Small amounts for water will also be required for drilling washdown. Based on predicted pumping rates (~20L/s up to 50L/s at times) there is likely to be excess dewatering water that will require management and as a result the applicant has proposed two strategies which consist of the following phases:

- Phase 1: using water for dust suppression activities (section 2.4.2) and direct discharge to land (section 2.4.3); and
- Phase 2: using water for dust suppression activities (section 2.4.2) and discharge to open pits for water storage and disposal (section 2.4.4).

It is anticipated that Phase 2 will be activated after the first year of mining, when there is space within one of the open pits at St Annes to take water. At this stage the applicant would likely use this option as water will be required for processing in the event the greater Murchison Gold Project goes ahead.

Sediment loading in the dewatering water will be managed initially through transfer dams using two dams (turkey nests; inflow (dirty dam) and outflow (clean dam)) that will allow settlement of suspended solids. Settlement of sediment laden water will occur first in the inflow dam before being transferred to the outflow dam then pumped for use in dust suppression and/or directed to the discharge pipeline for direct discharge to land or discharge to open pits.

A transfer pipe arrangement will be installed on a 1 in 50 gradient to allow efficient transfer of water from the inflow to the outflow dam. A freeboard will also be maintained across both dams (freeboard level was unspecified in the application).

The applicant has considered the need, and made provision, for silt busters (lamella clarifiers) to be used during the transfer of water from the inflow dam to the outflow dam before entering the discharge pipeline (should it be required). If lamella clarifiers are used to further remove silt from the water, this will be setup adjacent to the inflow dam and pumps will draw water from the inflow dam through the clarifiers before filling the outflow dam. This setup would supersede the transfer pipe arrangement described above as the water would be at a lower level preventing overflow. The use of clarifiers would likely be temporary (on an as-needed basis) as the complete arrangement is hired from Perth as required.

A conceptual layout of the discharge plan is shown in Figure 2 and Figure 3

### 2.4.1 Dust suppression activities

The project has 189ha of unsealed roads and haul roads all of which will require water for dust suppression depending on road usage, speed limit and climatic season. While a significant proportion of the dewatering water will be used for these purposes it will not manage the total volume of water that will be dewatered (refer to Section 2.4.5 for water balance details). A standpipe and pump will be located adjacent to the outflow dam (Figure 3). This will draw water from the dam at 40-50L/s and fill water carts as required.

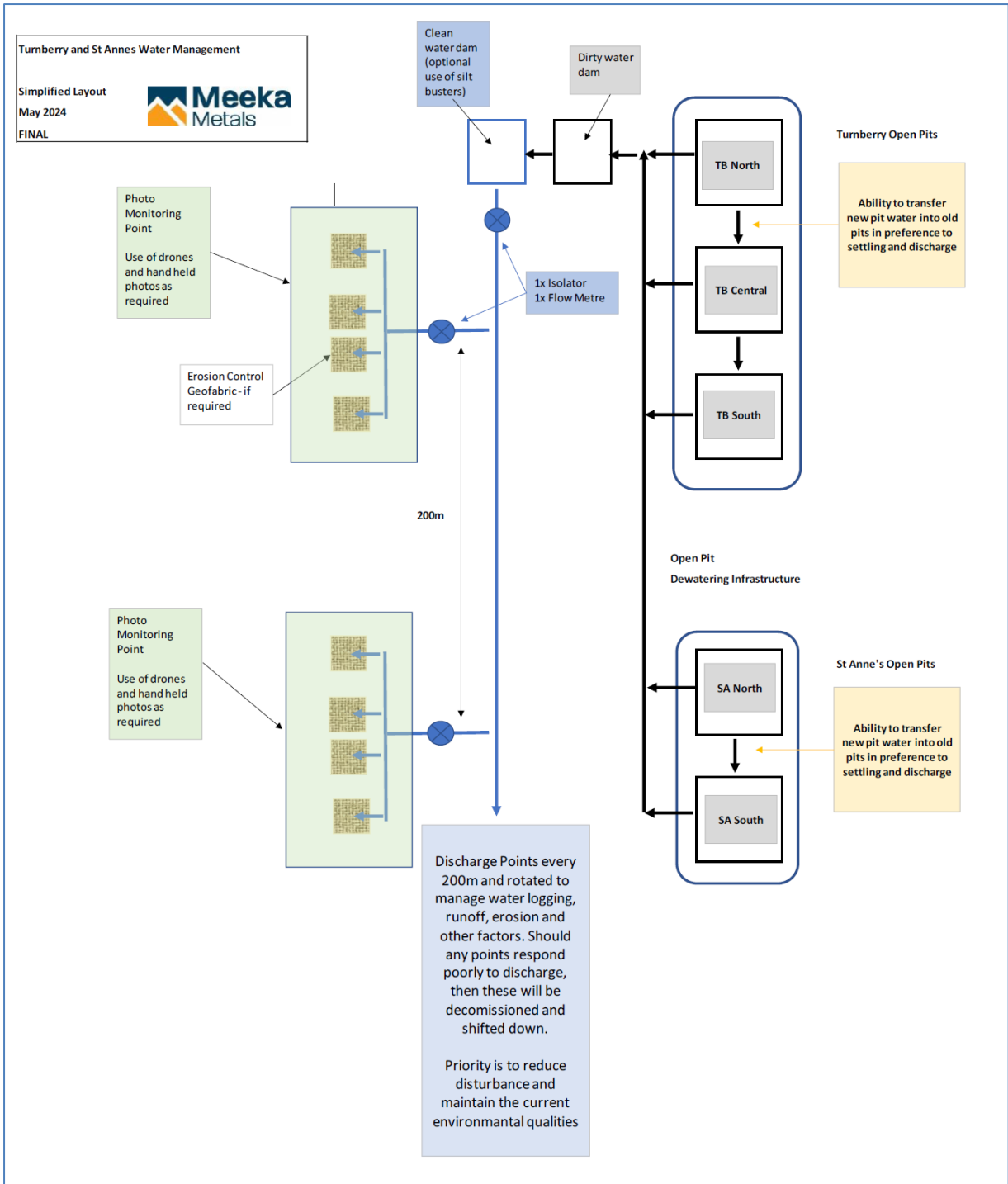
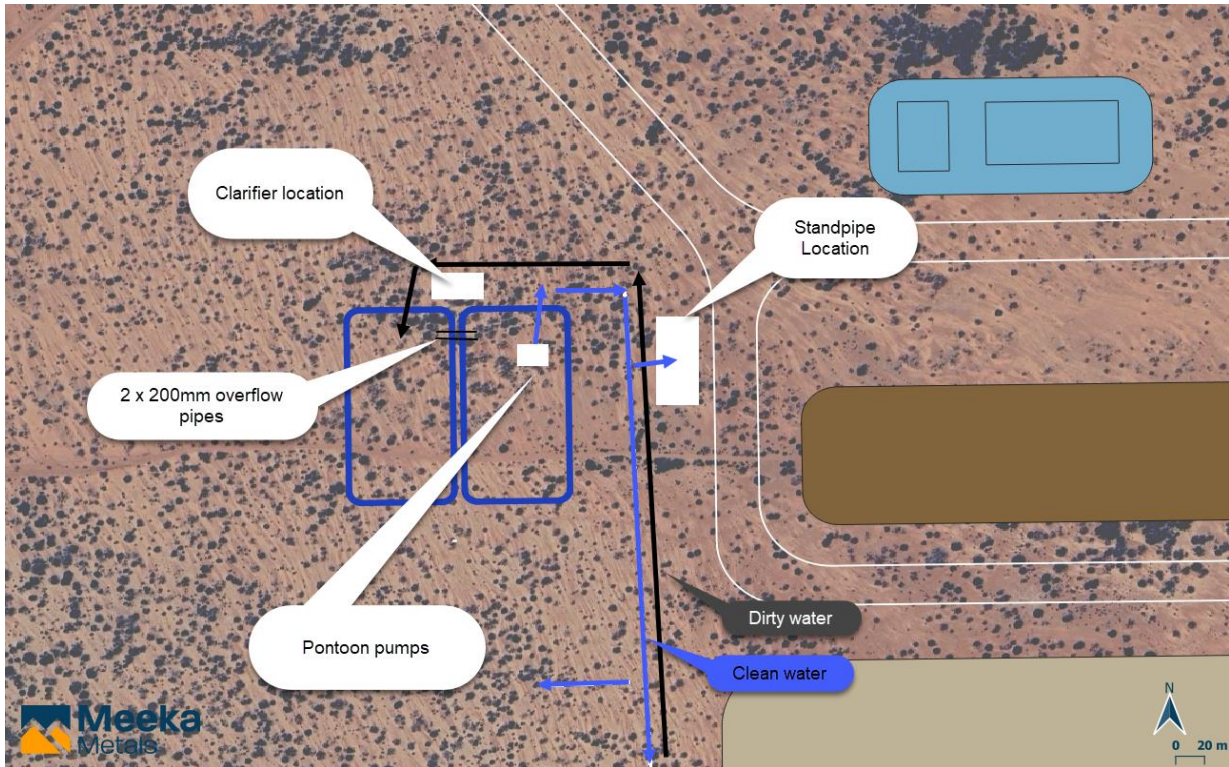


Figure 2: Water management layout



**Figure 3: Turkeys nest inflow and outflow dam layout**

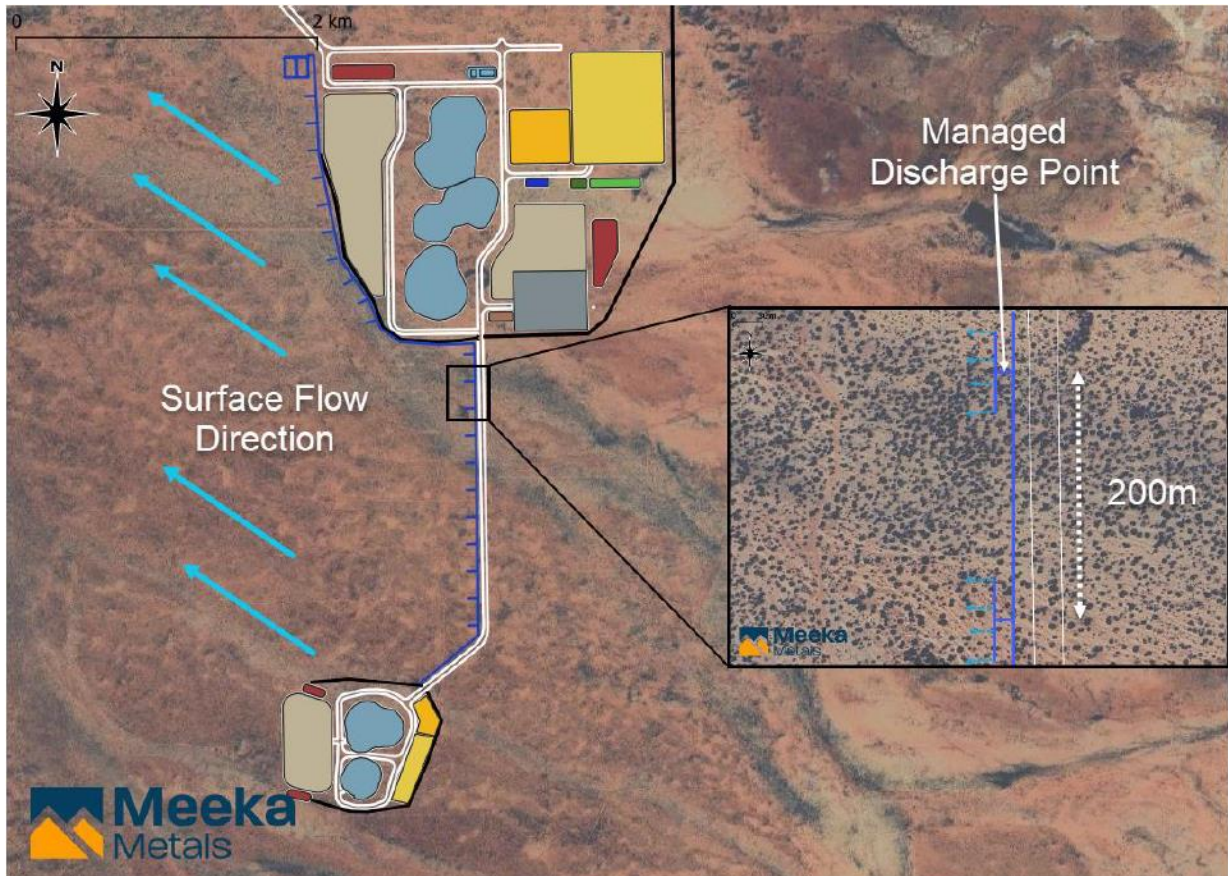
### 2.4.2 Discharges to land

Excess water that is discharged to land will be facilitated using a pipeline between St Annes and Turnberry pits. The applicant has indicated that the discharge site has been chosen based on the surface water flow modelling. Discharges to this area will flow away from the active mining areas (to north-west) taking advantage of natural landform drainage. Further, the applicant has indicated that vegetation in this area periodically floods after heavy rainfall events and that impacts to vegetation in this area is expected to be lesser than if discharge occurred in any other location. Figure 4 depicts the inferred surface flow direction in the discharge area.

The discharge pipeline will have a series of spurs coming off at regular intervals and then a series of spigots and discharge points associated with each spur to allow for the discharge of surplus water to land (direct discharge). The applicant doesn't expect the discharge to the environment to be a full-time requirement. This discharge will be used when dewatering flows are peaking and may only last from days to several weeks.

Each spur would be classified as a managed discharge point with a flow meter and regulation valve and will form an ongoing monitoring point for visual and photographic observations of erosion and vegetation impacts. After the initial operating period (trial-basis), geofabric may be used to reduce erosion from each discharge spur. This textile/fabric blanket is commonly used in civil engineering projects to contain sediment and reduce erosion but will be laid down and pinned to the soil below each direct discharge point. This concept will be used or modified to slow discharge velocities and enable managed dissipation.

To prevent the pooling of water, each discharge point will be used intermittently, with discharge points switched off before another one is turned on. The applicant has employed this strategy to allow sufficient seepage and drying (evaporation) time between discharge events.



**Figure 4: Surface water flow direction**

### 2.4.3 Discharge to Open Pit

At the end of the first year of operations, the applicant expects the St Annes pits will be available for water storage / disposal of dewatering water. The two pits are reported to have a combined surface area of 20ha and storage of approximately 145,000KL.

The applicant has accounted for an operational freeboard to cover the 72 hour 1:100yr average recurrence interval (ARI); this measure is primarily in place to manage water volumes in respective pits and mitigate potential overtopping events. Discharge to open pits will make use of a previously built water pipeline between the open pits. Water will be pumped from the working pit direct to the open pit void at St Annes. Water will settle in the open pit and eventually natural ground inflows and pumped inflows will form a natural standing water level in the open pit. A pontoon pump or pit pump will suck water from this open pit and return it for use in dust suppression, process use or underground mining use (potential future activities).

The groundwater within the mining area sits between 8-13m below ground level naturally. The applicant has committed to a 10m freeboard in operational procedures (noting that the licence may require a low freeboard level) within open pits receiving groundwater to ensure the risk associated with mobilised salts and groundwater mounding are kept as low as possible.

This will be achieved via periodic visual inspections of receiving pits and an associated reporting process to ensure discharge into pits is ceased if water levels rise. The rate of rise (vertically) is low at the upper levels of the pit (volume large) and adequate time is available to re-route water to other pits via the interconnected transfer pumps as required (Figure 2).

Section 4.2. provides a summary of the water balance for the proposal.



### 2.4.4 Water Balance

At the start of the operation, dewatering is required to lower the water table to allow mining to commence. During this period, the applicant intends for water to be utilised for construction, but with the haul and other roads still being built, the demand for dust suppression is expected to be low. During this period (first 9 months) water will be discharged only to the environment (direct discharge to land – refer to Section 2.4.3). The dewatering at this stage is expected to be significant, to lower the water table to allow safe open pit mining. This would equate to an annual discharge of 1,200,000KL (1.2GL) in the first 9 months. As construction progresses, the applicant expects the demand for dust suppression to increase, and the rate of discharge to the environment to decrease.

The applicant expects to have a dewatering rate of 25L/s during 90% of the operation. However, high flows are expected to be encountered when mining the quartz vein. At high flows the peak dewatering rate is expected to be 50L/s which is likely to account for 10% of the overall operational phase. Figures 5 and 6 show the amount being discharged to land, open pit, and for use in dust suppression.

Discharge Point	Timing		
	Initial 9 months	1st Year of mining	2nd year of mining
Environment (Direct to surface, creek line and sheetflow area)	1,200,000 KL	1,450,000 KL	771,000 KL
Dust Supression	0 KL	160,000 KL	160,000 KL
Open Pits	0 KL	0 KL	669,000 KL

**Figure 5: 50L/s dewatering rate scenario**

Discharge Point	Timing		
	Initial 9 months	1st Year of mining	2nd year of mining
Environment (Direct to surface, creek line and sheetflow area)	1,200,000 KL	1,450,000 KL	0 KL
Dust Supression	0 KL	160,000 KL	160,000 KL
Open Pits	0 KL	0 KL	548,000 KL

**Figure 6: 25L/s Dewatering Rate**

## 2.5 Groundwater quality – screening risk assessment

The Applicant has committed to manage discharges to land in-consideration of Livestock Drinking Water Guidelines (*Australian and New Zealand Guidelines (ANZG 2023)*). Should water quality fall outside these values, the Applicant will direct dewatering water for storage in remnant open pits and for use in for dust suppression while investigations into the quality decline are undertaken.

The department has carried out a screening risk assessment of groundwater quality to support the assessment process for proposed discharges to the environment. This involved the comparison of site monitoring data with generic assessment levels which included the livestock water guidelines, long-term irrigation guidelines and freshwater aquatic guidelines (95% protection level); published in the *Australian and New Zealand Environment and Conservation Council & Agriculture and Resource Management Council of Australia and New Zealand (ANZECC & ARMCANZ 2000)* and ANZG 2023.

While no permanent surface water exists in the discharge area the application does indicate this area regularly floods thus to complement the assessment for main beneficial uses (livestock and vegetation), the department has considered the freshwater guidelines although it is noted that freshwater ecology is not likely to be present in the subject area.

Table 1 depicts the outcomes of the screening assessment. In consideration of the main beneficial uses, concentrations of sulphate marginally exceeded the livestock water guidelines and iron exceed the long-term irrigation guideline values. These exceedances are not considered to cause concern for the related discharges to land which are only to occur for the initial phase of the operation however, the applicant has committed to carry-out ongoing dewatering monitoring to ensure that the groundwater being discharged to the environment remains at a suitable quality that will have no adverse impacts on the environment (refer to Section 3 for details on proposed applicant controls).

Figure 7 and Figure 8 depicts the monitoring locations for the Turnberry and St Annes pits respectively.

Table 1: Water quality screening assessment for the Gnaweeda project

Analyte	Units	Limits of Reporting	SASB001	TBPB002	TBPB001	TBPB003	TBPB004	Gnaweeda Bore	Livestock drinking water quality (ANZG 2023)	Long-term irrigation values (ANZECC & ARMCANZ 2000)	Freshwater Guidelines 95% (ANZECC & ARMCANZ 2000)
pH	pH units	0.1	7.6	8	8.2	8	8.1	8.1	-	6.5-8.5	6.0-8.0
Conductivity	µS/cm	2	1600	1600	880	1100	1300	2200	2985	-	20-250
Total Dissolved solids	mg/L	10	1000	1000	550	680	840	1300	2000	-	-
Bicarbonate Alkalinity	mg/L	5	220	130	20	130	110	140	-	-	-
Sulphate	mg/L	1	190	300	120	160	270	220	250	-	-
Chloride	mg/L	1	280	240	160	170	180	430	-	-	-
Calcium	mg/L	0.2	59	85	36	53	91	95	1000	-	-
Magnesium	mg/L	0.1	42	50	11	29	27	55	125	-	-
Potassium	mg/L	0.1	22	8.9	9.2	7.2	6.6	23	-	-	-
Sodium	mg/L	0.5	180	140	110	110	120	270	-	-	-
Dissolved Aluminium	mg/L	0.005						<0.005	3.6	5	0.055
Dissolved Arsenic	mg/L	0.001	0.006	0.009	0.006	0.01	0.017	0.001	0.025	0.1	0.024 (As III)& 0.013 (AsV)
Dissolved Cadmium	mg/L	0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.01	0.01	0.0002
Dissolved Chromium	mg/L	0.001	<0.001	0.001	0.003	0.001	<0.001	0.001	0.05	0.1	0.001
Dissolved Cobalt	mg/L	0.001	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	1	-	-
Dissolved Copper	mg/L	0.001	0.004	<0.001	<0.001	<0.001	<0.001	0.002	0.5	0.05	0.0014
Dissolved Iron	mg/L	0.005	0.21	<0.005	<0.005	<0.005	<0.005	<0.005	-	0.2	-
Dissolved Lead	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.1	2	0.0034
Dissolved Nickel	mg/L	0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	1	0.2	0.011
Dissolved Selenium	mg/L	0.001	0.002	0.016	0.001	<0.001	0.001	0.002	0.02	0.02	-
Dissolved Zinc	mg/L	0.005	0.023	<0.005	<0.005	<0.005	0.011	<0.005	20	2	0.008
Total aluminium	mg/L	0.005						<0.005	3.6	5	0.055
Total Arsenic	mg/L	0.001	0.006	0.009	0.006	0.01	0.017	0.001	0.025	0.1	0.024 (As III)& 0.013 (AsV)
Total Cadmium	mg/L	0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.01	0.01	0.0002
Total Chromium	mg/L	0.001	<0.001	0.001	0.003	0.001	<0.001	0.001	0.05	0.1	0.001
Total Cobalt	mg/L	0.001	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	1	-	-
Total Copper	mg/L	0.001	0.004	<0.001	<0.001	<0.001	<0.001	0.003	0.5	0.05	0.0014
Total Iron	mg/L	0.005	0.21	<0.005	<0.005	<0.005	<0.005	<0.005	-	0.2	-
Total Lead	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.1	2	0.0034
Total Nickel	mg/L	0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	1	0.2	0.011
Total Selenium	mg/L	0.001	0.002	0.016	0.001	<0.001	0.001	0.001	0.02	0.02	-
Total Zinc	mg/L	0.001		0.023	<0.005	<0.005	<0.005	0.011	<0.005	20	2

Source: Meeka Metals 2023 for the Gnaweeda Bore (undated sampling event) and Meeka Metals 2024 for St Annes (SA) and Turnberry (TB) monitoring bores (December 2023 sampling event)

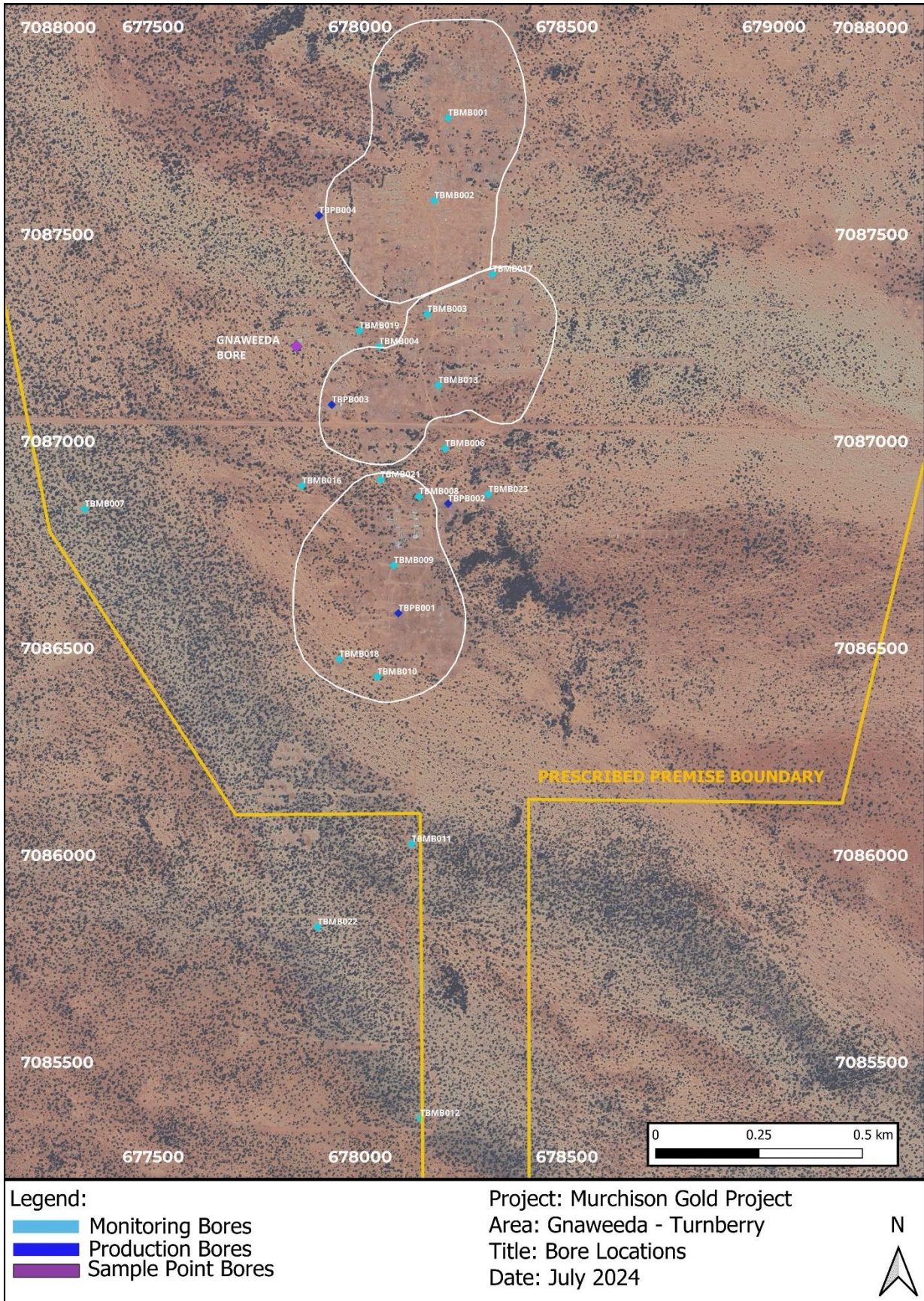


Figure 7: Bore locations for the Turnberry Pit



**Figure 8: Bore locations in the St Annes Pit (SAMB001, SAMB002, and SAPB001 not constructed yet)**

## 2.6 Landfill

Landfill trenches will be constructed to facilitate landfilling practices up to 500 tonnes per annual period. The applicant has indicated groundwater in the vicinity of the landfill sits at about 8 metres below ground level (mBGL). To support impacts to underlying groundwater, trenches will be excavated to a maximum depth of 3m leaving a minimum 5m separation distance between the base of trenches and the local water table.

The applicant has not confirmed what waste types are proposed to be disposed on-site however, it is assumed deposited wastes will be limited to putrescible wastes, inert waste type 1 and inert waste type 2 (plastics only); as defined in the [Landfill Waste Classifications and Waste Definitions 1996](#). Wastes such as oils and hydrocarbons, other chemicals and metals will be placed into specific bins for disposal offsite to an appropriately licensed facility.

When mining ceases groundwater recovery is expected to take several years. During this time all the organic material within the landfill will break down and be benign. Upwards pressure from evapotranspiration will further limit the potential for seepage from the landfill into groundwater.

## 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 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
<b>Construction</b>			
Dust	Construction of mine dewater pipeline. Construction of landfill	Air / windborne pathway	<ul style="list-style-type: none"> <li>Water carts used for dust suppression.</li> </ul>
Noise	Construction of the Haul Road, Movement of vehicles on unsealed roads		<ul style="list-style-type: none"> <li>No controls listed for construction phase due to separation distance to nearest residential and/or industrial receptor.</li> </ul>
Spills and leaks of hydrocarbons	From vehicles and equipment used in	Seepage to soil and	<ul style="list-style-type: none"> <li>Spill kits on site.</li> </ul>

Emission	Sources	Potential pathways	Proposed controls
<i>and chemicals</i>	<i>construction phase</i>	<i>groundwater</i>	<ul style="list-style-type: none"> <li>• <i>Rehab any spills and leaks immediately after spill-event.</i></li> <li>• <i>All machinery to pass through workshop safety and mechanical checks.</i></li> </ul>
<b>Operation (Time Limited Operations)</b>			
<b>Dewatering (Category 6)</b>			
<i>Noise</i>	<i>Dewatering pumps and associated infrastructure</i>	<i>Air / windborne pathway</i>	<ul style="list-style-type: none"> <li>• <i>No controls listed due to separation distance to nearest residential and/or industrial receptor</i></li> </ul>
<i>Sediment laden mine water (from dewatering activities)</i>	<i>Overtopping of sediment laden mine water from turkey nests</i>	<i>Surface runoff</i>  <i>Seepage to soil and groundwater</i>	<ul style="list-style-type: none"> <li>• <i>Monthly monitoring of water within the storage ponds prior to discharge.</i></li> <li>• <i>Install a lamella clarifier if required to manage sediment loads in dewatering water.</i></li> </ul>
	<i>Dewatering pipeline ruptures</i>	<i>Surface runoff</i>  <i>Seepage to soil and groundwater</i>	<ul style="list-style-type: none"> <li>• <i>Frequent visual inspections are proposed to identify and manage leaks.</i></li> <li>• <i>With the water quality being high, the pipe line running through the same environment as the planned discharge, there is no plan for leak detection to be fitted and no plan to contain the pipeline in a v drain with sumps along the alignment.</i></li> </ul>
<i>Mine water (post settlement / storage stage)</i>	<i>Direct discharge to land via discharge pipeline spurs and spigots</i>	<i>Seepage to soil and groundwater</i>	<ul style="list-style-type: none"> <li>• <i>Monthly water quality monitoring carried-out at the turkey nests prior to discharge.</i></li> <li>• <i>Multiple discharge spigots spread over large areas to reduce water volumes, flows and minimise ponding of water.</i></li> <li>• <i>Discharges to occur intermittently and alternate across different discharge points (reduce ponding).</i></li> <li>• <i>Geofabric textile matting to be installed at each discharge spigot to assist in absorbing energy of the water at the point of discharge to mitigate local erosion.</i></li> <li>• <i>Weekly inspections to assess erosion. Remedial actions, such as discharge to geofabric to prevent erosion as water leaves the spigots.</i></li> <li>• <i>If sediment loads are seen to be increasing, silt busters (lamella clarifiers) will be mobilised and plumbed into the pipeline so that water</i></li> </ul>

Emission	Sources	Potential pathways	Proposed controls
			<i>discharging to the environment is filtered through a silt trap before discharge.</i>
<b>Landfill (Category 64)</b>			
<i>Odour</i>	<i>Accumulated wastes in landfill</i>	<i>Air / windborne pathway</i>	<ul style="list-style-type: none"> <li><i>Regular cover of landfill to eliminate food sources and reduce attraction to feral animals.</i></li> </ul>
<i>Dust</i>	<i>Unloading of waste to the landfill</i>	<i>Air / windborne pathway</i>	<ul style="list-style-type: none"> <li><i>Water carts used for dust suppression.</i></li> </ul>
<i>Noise</i>	<i>Movement of vehicles on haul roads</i>		<ul style="list-style-type: none"> <li><i>No controls listed for operations due to separation distance of nearest receptor.</i></li> </ul>
<i>Windblown Waste</i>	<i>High winds</i>	<i>Air / windborne pathway</i>	<ul style="list-style-type: none"> <li><i>Landfill to be fenced.</i></li> <li><i>Wastes covered regularly.</i></li> <li><i>Regular inspections and clean up where required.</i></li> </ul>
<i>Leachate</i>	<i>Accumulated wastes in landfill</i>	<i>Seepage to soil and groundwater</i>	<ul style="list-style-type: none"> <li><i>Base of landfill trenches excavated to maximum depth of 3m below ground level to achieve a minimum 5m separation distance to underlying groundwater.</i></li> </ul>
<i>Potentially contaminated stormwater runoff</i>	<i>Accumulated wastes in landfill</i>	<i>Overland runoff during high rainfall events.</i>	<ul style="list-style-type: none"> <li><i>Landfill placed to the east of the operation, upstream of surface flows.</i></li> <li><i>Landfill located behind diversion drain to prevent interactions with sheet flows.</i></li> </ul>

### 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**

Human receptors	Distance from activity / prescribed premises
Killara and Yoothapina Pastoral stations	The premises sits across two pastoral leases. The closest pastoral residence is the Munarra homestead, which is located approximately 10km north-west of the Turnberry Mining area.
Environmental receptors	Distance from activity / prescribed premises
Groundwater	<p>The premises is located within the East Murchison Groundwater Area and the aquifer being accessed is from a fractured rock.</p> <p>Paleochannels run underneath the East Murchison area where premises is situated.</p> <p>Reports done by the applicant indicate the depth of the groundwater ranges from 9 to 13m below ground level (mBGL) and that the flow direction is in a northly direction.</p> <p>Applicant assessment stated that there are no groundwater dependent ecosystems within the vicinity of the operations.</p>
Surface waterbodies	There are several surface water lines (ephemeral) that cut across the north-west boundary through to the south-east. One is also located south of the boundary.
Priority and Threatened Fauna	<p>The application indicates that previous fauna surveys (carried-out by previous tenure holders) for the area identified the presence of the Long-Tailed Dunnart north of the premises and have been advised by the traditional landowners and station to avoid the area, as such the haul road has been constructed to avoid the area.</p> <p>Geocortex shows no signs of priority or threatened fauna within the area and surveys by the applicant also reported no other significant fauna species within the vicinity of the premises boundary.</p>
Priority and Threatened Flora	<p>The applicant has had surveys identify 151 native flora species with no weed species found around the vicinity. Two conservation significant species North-West of the premises along the projected haul road.</p> <ul style="list-style-type: none"> <li>• Priority 1 (P1) <i>Stenanthemum mediale</i></li> <li>• Priority 3 (P2) <i>Gunniopsis proponqua</i>.</li> </ul> <p><i>Stenanthemum mediale</i> was identified along the haul road tenure corridor growing in association with breakaway country. The related study recommended avoiding clearing in these areas to avoid impacting the species. <i>Gunniopsis propinqua</i> was identified in similar areas as the P1 species.</p>

## 3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and considers 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 W6894/2024/1 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. dewatering and disposing of waste into the landfill. 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.

Please note that due to the separation distance to residential receptors, noise emissions have been screened out for further assessment. Notwithstanding, noise emissions are subject to the *Environmental Protection (Noise) Regulations 1997*.

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

Risk events					Risk rating <sup>1</sup> C = consequence L = likelihood	Applicant controls sufficient?	Conditions <sup>2</sup> of works approval	Justification for additional regulatory controls / DWER comments
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
<b>Construction</b>								
Construction of mine dewater pipeline. Construction of landfill	Dust	<b>Pathway:</b> Air/windborne <b>Impact:</b> smothering of native vegetation inhibiting photosynthesis/ growth cycle. Reduction in amenity and health of local fauna.	Flora - Priority 1 <i>Stenanthemum mediale</i> Priority 3 <i>Gunniopsis proponqua</i> . Native vegetation within and outside the vicinity of the premises Long-Tailed Dunnart north of the premises	Refer to Section 3.1	C = Slight L = Unlikely <b>Low Risk</b>	Y	Condition 1 - infrastructure and equipment requirements Condition 2 – dust management requirements	No receptor within 5km of the prescribed activity. P1 <i>Stenanthemum mediale</i> , P3 <i>Gunniopsis proponqua</i> , and the Long-Tailed Dunnart that are found along the proposed haul road are approximately 6km away from the premises boundary.  The applicant's management controls for dust are sufficient in minimising the impact to the environment.
Construction of the Haul Road, Movement of vehicles on unsealed roads	Minor hydrocarbon spills or leaks	<b>Pathway:</b> direct discharge to land; seepage to ground and underlying groundwater; and/or run-off into ephemeral drainage lines <b>Impact:</b> adverse effects on local soils and groundwater quality Reduction in amenity and health of local fauna.	Native vegetation within the prescribed premises boundary Underlying groundwater (9-13mBGL) Long-Tailed Dunnart north of the premises	Refer to Section 3.1	C = Minor L = Unlikely <b>Medium Risk</b>	Y	Condition 10 and 11 – management of spills of environmentally hazardous materials	Unintended discharge of hydrocarbons and other harmful materials into the environment is also regulated under the <i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i> .
<b>Commissioning – Category 6</b>								
Commissioning of pipelines	Sediment laden mine water discharge from pipeline leaks/ruptures	<b>Pathway:</b> direct discharge to land; seepage to ground and underlying groundwater; and/or run-off into ephemeral drainage lines <b>Impact:</b> localised erosion and/or adverse impacts to soils, surface water or groundwater quality	Native vegetation within the prescribed premises boundary Ephemeral surface water drainage lines/areas within the premises boundary Underlying groundwater (9-13mBGL)	N/A	C = Minor L = Unlikely <b>Medium Risk</b>	Y	Condition 1 - infrastructure and equipment requirements	Design/construction requirements for dewatering pipelines and associated infrastructure should mitigate the likelihood of events of occurring. Should they occur, related impacts would be of a minor nature (i.e. localised erosion)

Risk events					Risk rating <sup>1</sup> C = consequence L = likelihood	Applicant controls sufficient?	Conditions <sup>2</sup> of works approval	Justification for additional regulatory controls / DWER comments
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
<b>Operations – Category 6</b>								
Direct discharge of mine dewater to land and open pits	Direct discharge	<p><b>Pathway:</b> direct discharge to land; seepage to ground and underlying groundwater; and/or run-off into ephemeral drainage lines</p> <p><b>Impact:</b> localised erosion and/or adverse impacts to soils, surface water or groundwater quality.</p> <p>Impacts to native vegetation from pooling of discharged water or from waterlogging of soils</p>	<p>Native vegetation in the discharge areas</p> <p>Ephemeral surface water drainage lines/areas within the premises boundary</p> <p>Underlying groundwater (9-13mBGL)</p>	Refer to Section 3.1	C = Moderate L = Possible <b>Medium Risk</b>	Y	<p>Condition 1 – infrastructure and equipment requirements</p> <p><b><u>Condition 3 and 4 – groundwater well installation requirements</u></b></p> <p>Condition 7 and 15 – vegetation health monitoring requirements</p> <p>Condition 12 – operational requirements for infrastructure and equipment</p> <p><b><u>Condition 13 and 14 – Authorised discharge points and associated environmental monitoring requirements.</u></b></p>	<p>The delegated officer has found the applicant's controls as generally sufficient to manage the emissions of dewatering discharge to land.</p> <p>The department has imposed controls regarding monitoring of groundwater and dewatering discharge stored in the transfer dam to ensure that the outgoing discharge is of acceptable quality.</p> <p>Well installation requirements have also been imposed for groundwater monitoring wells proposed to be installed around St Annes Pit.</p>
Overtopping of St Annes and Turkey's nests (x2)	Mine water (pre settlement/ de-silting and post settlement)	<p><b>Pathway:</b> direct discharge to land; seepage to ground and underlying groundwater; and/or run-off into ephemeral drainage lines</p> <p><b>Impact:</b> localised erosion and/or adverse impacts to soils, surface water or groundwater quality.</p> <p>Potential impacts to native vegetation from pooling of</p>	<p>Native vegetation in the vicinity of the Turkey's nests and St Annes Pit.</p> <p>Ephemeral surface water drainage lines/areas within the premises boundary</p> <p>Underlying groundwater (9-13mBGL)</p>	N/A	C = Minor L = Unlikely <b>Medium Risk</b>	N	<p><b><u>Condition 12 – operational requirements for infrastructure and equipment. (Pit freeboard)</u></b></p>	<p>The department notes the applicant intends to switch or partially switch discharges to an open pit when it becomes available for storage.</p> <p>A rising water table in vicinity of pits can mobilise salts in the soil profile and harm deep-rooted vegetation due to the effects of the increased salt content and the reduced level of oxygen in soils that are exposed to periods of waterlogging.</p>

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Risk events					Risk rating <sup>1</sup> C = consequence L = likelihood	Applicant controls sufficient?	Conditions <sup>2</sup> of works approval	Justification for additional regulatory controls / DWER comments
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
		discharged water or from waterlogging of soils						The applicant has committed to a 10m freeboard in operational procedures for St Annes Pit. As an absolute limit, DWER has set a freeboard requirement of equal to, or greater than, 6m for St Annes. This requirement has also been imposed to manage potential overtopping events.
Storage of water in St Annes Pit	Seepage through Pit base Groundwater mounding	<b>Pathway:</b> vertical and lateral seepage to groundwater <b>Impact:</b> adverse impacts to groundwater quality Impacts to native vegetation from elevated local groundwater levels (mounding)	Underlying groundwater (9-13mBGL)	N/A	C = Moderate L = Unlikely <b>Medium Risk</b>	N	<b><u>Condition 3 and 4 – groundwater well installation requirements</u></b> <b><u>Condition 13 and 14 – Authorised discharge points and associated environmental monitoring requirements</u></b>	The department has imposed controls regarding monitoring of dewatering discharge and water monitoring for water stored in St Annes Pit and surrounding groundwater quality bores. Water quality is relatively fresh however ongoing dewatering discharges to St Annes may lead to increase salt content of water from evaporation processes and therefore monitoring of stored water and local groundwater is required.
Dewatering and related conveyance pipelines	Sediment laden mine water discharge from pipeline leaks/ruptures	<b>Pathway:</b> direct discharge to land; seepage to ground and underlying groundwater; and/or run-off into ephemeral drainage lines <b>Impact:</b> localised erosion and/or adverse impacts to soils, surface water or groundwater quality	Native vegetation within the prescribed premises boundary Ephemeral surface water drainage lines/areas within the premises boundary Underlying groundwater (9-13mBGL)	N/A	C = Minor L = Unlikely <b>Medium Risk</b>	Y	Condition 1 - infrastructure and equipment requirements Condition 12 – operational requirements for infrastructure and equipment	Design/construction requirements for dewatering pipelines and associated infrastructure should mitigate the likelihood of events of occurring. Should they occur, related impacts would be of a minor nature (i.e. localised erosion)
<b>Operations – Category 64</b>								
Operation of landfill Vehicle movement in loading and unloading of	Dust	<b>Pathway:</b> Air/windborne <b>Impact:</b> smothering of native vegetation inhibiting photosynthesis/ growth cycle. Reduction in amenity and	Flora - Priority 1 <i>Stenanthemum mediale</i> Priority 3 <i>Gunnopsia proproqua</i> . Native vegetation within	Refer to Section 3.1	C = Minor L = Unlikely <b>Medium Risk</b>	Y	Condition 12 – operational requirements for infrastructure and equipment	The Delegated Officer finds the emission of dust to be limited in the operation of the landfill facility.

Risk events					Risk rating <sup>1</sup> C = consequence L = likelihood	Applicant controls sufficient?	Conditions <sup>2</sup> of works approval	Justification for additional regulatory controls / DWER comments
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
waste		health of local fauna.	and outside the vicinity of the premises Long-Tailed Dunnart north of the premises					
	Odour	<b>Pathway:</b> Air/windborne <b>Impact:</b> adverse effects to environment and local fauna	Long-Tailed Dunnart Attraction of feral animals and vermin – could increase predator levels	Refer to Section 3.1	C = Minor L = Unlikely <b>Medium Risk</b>	Y	Condition 12 – operational requirements for infrastructure and equipment	The installation of the fence alongside regular inspection and covering of waste is sufficient in managing odour related issues.
	Seepage of leachate	<b>Pathway:</b> seepage to ground and underlying groundwater <b>Impact:</b> adverse effects on groundwater quality	Underlying groundwater (9-13mBGL)	Refer to Section 3.1	C = Minor L = Unlikely <b>Medium Risk</b>	Y	Condition 1 - infrastructure and equipment requirements Condition 12 – operational requirements for infrastructure and equipment	The applicant intends to have 5m separation of the trench and the groundwater, which Delegated officer finds sufficient for a landfill of this scope and scale.
	Contaminated stormwater runoff	<b>Pathway:</b> direct discharge to land; seepage to ground and underlying groundwater; and/or run-off into ephemeral drainage lines <b>Impact:</b> contamination of soils leading and/or adverse effects on groundwater quality	Native vegetation within the prescribed premises boundary Ephemeral surface water drainage lines/areas within the premises boundary Underlying groundwater (9-13mBGL)	Refer to Section 3.1	C = Slight L = Unlikely <b>Low Risk</b>	Y	Condition 1 - infrastructure and equipment requirements Condition 12 – operational requirements for infrastructure and equipment	The applicant has proposed to construct the landfill to the east of the operation, upstream of surface flows and to be located behind a diversion drain to prevent interactions with sheet flows. The delegated officer finds the risk of stormwater runoff to be covered by the controls set by the applicant
	Windblown Waste	<b>Pathway:</b> Air/windborne <b>Impact:</b> adverse effects to environment and local fauna	Native vegetation within the prescribed premises boundary Long-Tailed Dunnart Attraction of feral animals and vermin – could increase predator levels	Refer to Section 3.1	C = Minor L = Unlikely <b>Medium Risk</b>	Y	Condition 12 – operational requirements for infrastructure and equipment	The installation of the fence alongside regular inspection and covering of waste is sufficient in managing windblown wastes

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Risk events					Risk rating <sup>1</sup> C = consequence L = likelihood	Applicant controls sufficient?	Conditions <sup>2</sup> of works approval	Justification for additional regulatory controls / DWER comments
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
<b>Miscellaneous activities</b>								
General mining activities	Minor hydrocarbon spills or leaks	<b>Pathway:</b> direct discharge to land; seepage to ground and underlying groundwater; and/or run-off into ephemeral drainage lines	Native vegetation within the prescribed premises boundary	Refer to Section 3.1	C = Minor L = Unlikely <b>Medium Risk</b>	Y	Condition 10 and 11 – management of spills of environmentally hazardous materials	Unintended discharge of hydrocarbons and other harmful materials into the environment is also regulated under the <i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i> .
Bioremediation pad	Seepage of leachate. Runoff of contaminated stormwater	<b>Impact:</b> adverse effects on local soils and groundwater quality Reduction in amenity and health of local fauna.	Underlying groundwater (9-13mBGL) Long-Tailed Dunnart north of the premises	No controls specified	C = Minor L = Possible <b>Medium Risk</b>	N	<b><u>Condition 1 - infrastructure and equipment requirements</u></b> <b><u>Condition 12 – operational requirements for infrastructure and equipment</u></b>	No controls were specified by the applicant to manage associated risks. Design and construction requirements have therefore been set in conditions of the works approval.

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.

## 5. 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 website on 7 March 2024	None received	N/A
Yugunga-Nya RNTBC (YNPBC) advised of proposal on 6 February 2024	Provided in Appendix 1	Provided in Appendix 1
Yamatji Marlpa Aboriginal Corporation (YMAC) advised of proposal on 1 March 2024	None received	N/A
Draft Works Approval and Decision Report provided to the applicant for a 21-day comment period on 25 June 2024	Feedback and additional information provided for several matters highlighted in the draft; received on 25 June and 2 July 2024. Applicant also advised that they accept all the conditions and have no other comments to make on the works approval.	Additional information incorporated into the assessment and works approval, where relevant.

## 6. 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) ANZECC, 2000. *Australian and New Zealand Guidelines for Fresh and Marine Water Quality Volume 1. National Water Quality Management Strategy*, Paper No. 4.
- 2) ANZG 2023. *Livestock drinking water guidelines*. Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Australian and New Zealand Governments and Australian state and territory governments, Canberra.
- 3) Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, 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) DWER 2021, *Guideline: Assessment and management of contaminated sites*, Perth, Western Australia.
- 7) Meeka Metals, 21 December 2023, *Gnaweeda Project Works Approval Supporting Information Document*.
- 8) Meeka Metals, May 2024, *Works Approval W6894/2024/1 Additional Information*.
- 9) Rockwater, October 2023, *Turnberry Gold Project Dewatering Assessment Report for Meeka Metals Ltd - December 2023*.
- 10) Yugunga-Nya Native Title Aboriginal Corporation RNTBC (2024), *YN PBC Survey Assessment*.
- 11) Yugunga-Nya Native Title Aboriginal Corporation RNTBC (2024), *YN PBC Comments /Objection: Andy Well Mining Pty Ltd Tenement*.

## Appendix 1: Summary of consultation undertaken by the department

Consultation method	Comments received	Department response
Yugunga-Nya RNTBC (YNPBC) advised of proposal on 6 February 2024	<p>1. YNPBC requested an additional 52 days alongside original 21-day period to comment on the application.</p> <p>YNPBC met with the department on 05 April 2024 and commented on their concerns regarding the application.</p> <p>A document was provided by YNPBC with the full scope of their assessment and objections to the application.</p>	DWER granted an additional 3 weeks to provide comment on the application.
	<p>2. YNPBC finds the heritage survey to be lacking and totally inappropriate. This includes L51/97</p> <p>YNPBC notes that 3 surveys were undertaken between 2002 and 2017 which form the basis of Andy Well Mining Pty Ltd from which to conduct Grounds Disturbing Activities.</p> <p>YNPBC expresses that Anthropologists should have recorded the sites with cultural value and register them with the DPLH.</p> <p>The YNPBC would like to view the approvals and consultation documentation that AW Mining Pty Ltd, the Murchison Gold Project (MGP) Mining Proposal and Mine Closure Plan has only baseline characterization of surface water catchment on, both deposits and haulage roads.</p> <p>The Yugunga Nya Native Title holders are not aware of further GDA (Grounds Disturbance Activities) to take place on their Determination. The dewatering proposal includes a great deal of significant GDA's which have not been properly surveyed.</p>	<p>Clearing and ground disturbance activities (GDA) on mining tenure are generally considered in the Mining Proposal (MP) and Mine Closure Plan (MCP) which is assessed by DEMIRS under the <i>Mining Act 1978</i> (Mining Act).</p> <p>DWER understands that a MP and MCP was submitted to the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) in December 2023. Both the MP and MCP are currently under assessment by DEMIRS.</p> <p>DWER cannot provide consultation documents and approvals regarding the MP and MCP as they are documents submitted to a separate decision-making authority.</p> <p>Heritage surveys are not assessed under Part V, Division 3, of the <i>Environmental Protection Act 1986</i> (EP Act). These requirements would fall under the <i>Aboriginal Heritage Act 1972</i> (AH Act) which is administered by DPLH.</p> <p>The applicant has advised that a Native Vegetation Clearing Permit (NVCP) application was submitted to DEMIRS on December 2023 and was approved on 26 March 2024 - CPS10466/1 (duration of permit: 18 April 2024 to 17 April 2029).</p>

Consultation method	Comments received	Department response
	<p>3. YNPBC has concerns that water pathways diversions suggested in Pendragon Surface Water 2023 and the proposed pits will redirect natural flow downstream of disturbances. Leading to reduction in water flow, potential stop and collateral impacts on environment.” For which no due process consultation and Heritage works were undertaken adequately.</p> <p>The collateral impact on the environment and its channels from the redirect flow raises concerns for the Yugunga Nya people with their relationship to the affected areas. It has a potential for enormous damages to environmental and cultural heritage.</p>	<p>The department does not assess the construction / excavation of mining pits and associated mining infrastructure (including diversion bunds around mining areas).</p> <p>Clearing and ground disturbance activities (GDA) on mining tenure are generally considered in the Mining Proposal (MP) and Mine Closure Plan (MCP) which is assessed by DEMIRS under the Mining Act (see above comments regarding the status of approvals under the Mining Act).</p>
	<p>4. Section 4 of the Supporting Document addresses stakeholder consultation, YNPBC considers there to be no evidence of consultation with all key stakeholders, which are also the Yugunga Nya Native Title Holders including the mandatory Community consultation.</p> <p>Section 4.2.3 The activity notice to YMAC was passed on to YNPBC and issues were brought to the proponent which were never addressed.</p> <p>YNPBC note that Killara station is on the Yugunga Nya NT Determination, therefore any impacts on or nearby the location requires consultation with the NT holders.</p> <p>YNPBC asks for evidence that consultation has been undertaken with relevant parties. With a sizeable operation allowed to undergo significant Ground Disturbing activities on a Native Title Determination without the requirement to demonstrate and provide real evidence of engagement with the NT Holders and their PBC demonstrate the YNPBC feel disrespected and a lack of consideration for the cultural values placed on the environment statutory legislation continues to have.</p> <p>The YNPBC has been operating since 2021, and its Heritage department at PBC level, since January 2023. No consultation from AW Mining representatives has taken place.</p>	<p>DWER has sought comments directly from people and public authorities who, in the Department’s opinion, may have a direct interest in the application (Direct-Interest Stakeholders).</p> <p>The applicant is required to meet its obligations under the <i>Aboriginal Heritage Act 1972 (AH Act)</i>. This is a separate regulatory process to that of applying for a licence amendment under Part V of the EP Act. The granting of the works approval does not remove the obligation which Andy Well Pty Ltd has under Aboriginal heritage laws.</p> <p>The applicant has advised that the mine area has been subject to a number of heritage surveys dating back to 1997. Eight (8) heritage reports have been provided to DEMIRS as part of the Mining Proposal assessment.</p> <p>The applicant has advised that all sites within the project area have been identified, and steps have been taken to prevent impacts to known sites or potential unknown / unidentified sites, such as moving the haul road alignment, implanting the cultural awareness program and operating under a heritage agreement with the relevant Native Title holders.</p> <p>The applicant has further stated that no sites will be impacted by planned works, and that no further approvals under the AH Act are required. Further enquiries should be directed to the Department of Planning, Lands and Heritage regarding AH Act</p>

Consultation method	Comments received	Department response
		requirements and/or approvals.
	<p>5. Part 4: Proposed activities instructions are not adequately met – None of the assessment reports can validate the prescribed instructions.</p> <p>YNPBC request a fully thought-out water management proposal.</p> <p>Section 7.3 theoretical proposed works, no models, or further data to demonstrate minimal or any impacts.</p> <p>YNPBC asks to view the 2023 RockWater Pty Ltd aquifer testing and modellings to support dewatering proposal and assess validity in relation to Gnaweeda project.</p> <p>YNPBC has concerns on methodology undertaken in CDM Smith 2023 Supporting Document which is a dewatering assessment for the Gnaweeda Project and the potential long-term abstraction of water from the aquifer.</p> <p>The report provides insufficient confidence in demonstrating low, medium and high-risk case scenarios. The modelling used for these assessments is not calibrated adequately, they are used multiple times throughout the various reports and little real time analysis and research appear to have been done.</p> <p>Extensive research nationally and internationally due to the increase in Mining activities worldwide have more than demonstrated the multi layered impacts in the soil and the water tables from tailing, dewatering and discharge activities for gold operations.</p> <p>YNPBC has concerns that the 2016 CDM Smith report is only a guideline document for applying methodology to the exploration drilling protocols. Not a full-blown hydrogeological assessment for a Mining operation.</p>	<p>The Rockwater 2023 report was provided to YNPBC alongside the other documents on 7 March 2024.</p> <p>Discharge water quality monitoring has been specified in works approval conditions to ensure continual oversight of water quality and potential impacts to the environment from direct discharges to land and open-pits.</p> <p>The Applicant has committed to manage discharges to land in-consideration of Livestock Drinking Water Guidelines. Should water quality fall outside these values, the Applicant will direct dewatering water for storage in remnant open pits and for use in for dust suppression while investigations into the quality decline are undertaken.</p>
	<p>6. Table 8 of the Supporting Document is a risk assessment done by the proponent.</p> <p>YNPBC ask for evidence for such a low-level risk tool. What factors determine those Low to Medium assessments? The whole Risk procedure is</p>	<p>Risks associated with the abstraction of groundwater are managed under the <i>Rights in Water and Irrigation Act 1914</i> (RIWI Act) – see further comments below in relation to this (line item 7).</p>

Consultation method	Comments received	Department response
	<p>not demonstrated. What tools, calculations, models, controls, variables were exercised?</p> <p>The extraction of 1.6 GL p year likely an average of water from the Yugunga Nya lands is a significant withdrawal of water over undetermined number of years which will have major long-term impacts on the vegetation, the flora, the fauna, existing water courses and any pools AW Mining may not be versed in, including underground spring or water reserves proponents often do not know of.</p>	<p>The risk assessment compiled by the applicant are noted but do not form the basis of the departments own risk assessment.</p> <p>The department has undertaken an assessment of the works approval application consistent with its published Regulatory Framework, <a href="#">Guideline: Risk Assessments (2020)</a> which provides for consideration of the risk of impacts from emissions and discharges to the environment and human health from prescribed activities under Schedule 1 of the <i>Environmental Protection Regulations</i>.</p>
	<p>7. Section 8.3.1 of the supporting document states, 'no groundwater dependent ecosystems within vicinity of operations, no conservation significant stygofauna' YNPBC asks the proponent to demonstrate this succinctly.</p> <p>DWER license to take water on tenements: M51/870 (not 822), E51/926 &amp; 926 (never adequately surveyed or cleared for this scope of works.</p> <p>YNPBC find that the associated assessment reports do not adequately demonstrate this claim. Abstraction is based on unpredictable predictability if the drawdown behaves as modelled.</p> <p>YNPBC has concerns on the lack of detail, method, and recommendations of the Bennelongia 2017 Stygofauna report. Heavily based on previous works within different parameters, broad assumptions. The assessment has minimal research and a generic approach, not in a capacity to make clear recommendations for this project due to a lack of analysis, real data capture, decent modelling targeting several variables.</p> <p>YNPBC ask that there be a need for real life unexpected margins of errors and calculations to be accounted for outside of the modelling done by the proponent.</p> <p>YNPBC asks if the need for title owner engagement is needed for the approval of a 26D licence to dewater.</p>	<p>Risks from abstraction (and potential impacts to stygofauna and groundwater dependent ecosystems) is generally assessed under the <i>Rights in Water and Irrigation Act 1914</i> (RIWI Act). This is a separate regulatory process to that of applying for a works approval under Part V of the EP Act</p> <p>The applicant has indicated that a 5C licence to take water has been obtained for the project (GWL17556) under the RIWI Act. The licence is for an annual allocation of 2GL and covers mining tenements M51/870, E51/927 and E51/926 (the footprint for M51/882 is boundary for GWL17556). The licence is in force until October 24th, 2026, and will be renewed prior to its expiry.</p> <p>A 26D licence issued under the RIWI Act will be required to install the dewatering bores around the pits. This licence will be applied for prior to the commencement of mining operations. A 26D licence only applies to the construction or alteration of wells it does not permit the abstraction of groundwater. A notification letter to the native title owners is sent for an application for a 26D licence if the area in question is in a Native Title area.</p> <p>The applicant has further advised (as at 25 June 2024) that no applications for 26D licences have been submitted at this time. The current monitoring and dewatering bores have been installed under expired 26D licences (Doray Minerals 2017). 26D applications will be submitted by the applicant prior to the construction and installation of further bores.</p>

Consultation method	Comments received	Department response
		<p>For further information on the application process for abstracting water please refer to DWER's website:  <a href="https://www.wa.gov.au/service/building-utilities-and-essential-services/integrated-essential-services/types-of-water-licences-and-permits">https://www.wa.gov.au/service/building-utilities-and-essential-services/integrated-essential-services/types-of-water-licences-and-permits</a>.</p>
	<p>8. YNPBC asks that the proponent explain their management for Groundwater Ponding including how large discharge, impacts, and controls which demonstrate the risk mitigation. YNPBC finds the lack of models, worst- and best-case scenarios demonstrating these statements to be concerning.</p> <p>YNPBC is concerned that the discharge proposition is purely theoretical, with no modelling. It fails to demonstrate how this ongoing managed yet continuous outsource will not create erosional outcomes.</p> <p>The department has considered soils as a potential receptor of erosion through dewatering as a part of this works approval.</p> <p>Monitoring levels of erosion as well as management of the impacts of erosion are conditions set in the works approval. The delegated officer finds the controls set by the department, proposed by the applicant in the supporting document and the following RFI to be sufficient in managing the risk of erosion on soils.</p>	<p>DWER requested further information from the applicant on the 7 May 2024 with respect to the management of respective discharge areas and risks associated with water ponding and erosion.</p> <p>The Delegated Officer considers the proposed applicant controls to be sufficient to manage related risks – please refer to Section 2 and 3 of the Decision Report for further detail.</p>
	<p>9. Section 8.3.3 of the Supporting Document addresses vegetation death, the proponent does not demonstrate its claims 'the water discharge will be of high quality' where is the evidence.</p> <p>Where is the evidence that annual rain events will be sufficient to dilute any minor accretion of dissolved salts? How much dissolved salty discharge will take place, how often, where?</p> <p>YNPBC raise that dissolved saline water has been well proven to have impacts on multiple eco systems with long term modification in vegetation and there is a need for more robust modelling and calculations from the proponent.</p>	<p>DWER requested further information from the applicant on the 7 May 2024 with respect to groundwater quality information; please refer to the groundwater quality screening risk assessment in Section 2.5 of the Decision Report.</p> <p>Groundwater monitoring data was screened against the thresholds found in <i>Livestock drinking water quality (ANZECC 2000)</i>, <i>Long-term irrigation values (ANZECC 2000)</i> and <i>Freshwater Guidelines 95% (ANZECC 2000)</i>.</p>

Consultation method	Comments received	Department response
		<p>Direct discharges to land are predicted to occur for the first 12 months of operation, after which most of the water will be discharged to open pits.</p> <p>Groundwater / discharge water quality monitoring has been specified in the works approval as a key control to mitigate potential impacts to groundwater and vegetation quality from the proposed activity. In addition, the applicant has proposed to carry-out visual and photographic monitoring of respective discharge points (also conditioned as a regulatory control in the works approval).</p>
	<p>10. YNPBC has concerns that Section 8.3.4 of the Supporting Document which addresses sedimentation only outlines vague, generic, incorrect statements on sedimentation process and impacts.</p> <p>Where are the models showing the operational needs and capacity to manage sedimentation? 'Normal conditions' seldom apply in the mining environment, where are the non-normal conditions calculations and models?</p> <p>YNPBC find section 8.3.6 and 8.3.7 of the Supporting Document which addresses leaks and spills to inadequately assessed.</p> <p>YNPBC has concerns that spills in gold operations are notoriously negative and dangerous as many toxic residual heavy metals are byproducts of tailings, and discharge used water. Evidence across the globe of gold mining leaks long term permanently detrimental impacts on the environment and polluting water sources are well documented.</p>	<p>The department has considered sedimentation in dewatering discharge as an emission as part of this works approval. Further clarification on controls for managing sedimentation in discharged water was provided by the proponent on 7 May 2024 – please refer to Section 2 and 3 of the Decision Report for further detail. These additional controls are considered acceptable and have been adopted into conditions of the works approval.</p> <p>The management of heavy metals and sedimentation in the discharge water has been assessed by the department. If a rising trend of increased sediments and chemical constituents is identified in periodic monitoring of dewatering water, the works approval holder has committed to investigate the cause and commence appropriate corrective action. Failing that the department has powers under the EP Act to ensure necessary response is taken to rectify the root cause and prevent harm to the environment.</p>
	<p>11. Little substance regarding the landfill operations and management. Landfills are well-known causes of toxic fumes, repellent and polluted odours. Ground leaks of heavy metals contamination, seepage, breakdown and leaching across the landscape of toxic byproducts water, and wet rubbish with clear impacts on the environment, its ecosystems and its fauna.</p>	<p>The proposed landfill site is remote from sensitive residential or ecological receptors. Depth to groundwater across the project area is 9-13 mBGL. DWER notes that the applicant intends to have 5m separation from the base of the respective landfill trenches. Further the volume of waste to be disposed annually is minor, being 500 tonnes per annual period.</p>

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	<p>YNPBC considers 250 T of landfill waste and works for a landfill trench as considered significant and of major proportion to the Native Title Holders.</p> <p>YNPBC questions the management plan set out by the proponent. Where is the comprehensive management plan for this rubbish disposal practice? The mixing of non-compatible rubbish and material is well demonstrated to have severe long-term impacts as per stated above on the environment, including on humans.</p> <p>Section 8.3.12 of the Supporting Document 'all organic material within landfill will break down and be benign' 'Upwards evapotranspiration will limit the potential for seepage from the landfill into the groundwater.' YNPBC asks for evidence? Modelling? Criteria?</p>	<p>DWER intends to regulate the landfill facility consistent with requirements specified in the <i>Environmental Protection (Rural Landfill) Regulations 1997</i>. Restrictions for waste types disposed will be imposed in conditions of the works approval.</p>
	<p>12. YNPBC has concerns that the 2018 Stantec Gnaweeda Flora and Fauna Impact Assessment is based entirely on flora and fauna studies in 2011 and 2012. In a decade, a land system environment can undergo significant changes / regimes alterations. Studies based on years with inadequately represented rain regimes / patterns.</p> <p>YNPBC has worries for impacts on the Long-tailed Dunnart which is listed as endangered under the EPBC Act. Under the IUCN's Red List: critically endangered. In Australia's Threatened Species Strategy: one of ten priority threatened mammal species targeted. The report does not consider the whole of the project footprint as it wasn't finalized.</p> <p>Impact assessment table entirely based on historical work and only the EPA guidelines. No cultural value considered. No species on their own merit considered.</p> <p>Minimal to no impact on Dunnart or any mammals when the factors in the mine operations are considered is professionally inept. Extensive literature demonstrates impacts on habitats removal and recovery, migration of species, loss of species due to vibration, sounds, noises, changes in frequencies, ground and above ground disturbance, vehicle and foot traffic, landscape modifications, fires etc.</p>	<p>DWER acknowledges that part of the studies was done over decade ago. However, some were done as recently as 2017.</p> <p>The Part V EP Act assessment is limited to the discharge of dewatering water under Category 6 (Mine dewatering) and the construction of a landfill under category 64. Major ground disturbance activities and mining operations fall under the Mining Act.</p> <p>Potential emissions to the Long-Tailed Dunnart have been noted and assessed in section 3.2 (risk assessment) of the Decision Report.</p>



Consultation method	Comments received	Department response
	<p>13. YNPBC is concerned with the 2017 Stantec Flora Assessment to be based on no ground truthing, the report was made more than 6 years ago where changes in rain patterns on an annual basis need to be accounted for.</p> <p>YNPBC express that while results stipulate vegetation of no significant (EPA standards), no cultural value is being accounted for or even mentioned.</p> <p>YNPBC has noted that the Mulga Woodland will be abundant in the project area. Mulgas have a vital function in the Australian eco systems, as water presence and health indicators, as evidence of long-standing relics of broader forest, as a food fuel sources. Mulga Woodlands are of Aboriginal Cultural significance and associations. The presence of Acacia trees is important in this region as they provide shade, shelter, habitats, anchoring system to mitigate erosion and run offs.</p> <p>22 recorded species could not be identified, which could indicate unique and less common species, including species of cultural values.</p> <p>YNPBC would like to note that no recorded species of any regional significance does not lessen the importance and value of the plants / trees found in the area which are vital roles on their own merit, and on their cultural significance outside of a perfunctory function of classification.</p> <p>The conditions are seen as good and very good where no exploration activities happened. Classified as Completely degraded where exploration works happened. This is a serious indicator as to the long-term impacts on vegetation that mining operations will have.</p> <p>The project area is known to have been disturbed for decades by exploration works and the indication of low plants diversity is likely an outcome of those. Likely the ongoing mining of the area continuing to the destruction and disappearance of further diversity and floristic presence / abundance.</p>	<p>The clearance of vegetation in relation to mining activities is managed under the Mining Act. The Part V EP Act assessment is limited to the discharge of dewatering water under Category 6 (Mine dewatering) and the construction of a landfill under category 64.</p> <p>Monitoring of vegetation has been specified in the works approval as a key control to mitigate potential impacts to native vegetation from the proposed activity. Where impacts are observed the works approval holder must investigate the cause and commence appropriate corrective action.</p>

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	<p>14. DWER Reconciliation Action Plan 2022 – 2024 initiative through the Aboriginal Water and Environment Advisory Group was to target that: Traditional Owners have a right to a voice with water management and water uptake and disposal; and the collateral impacts on their Country's environment cultural values and heritage.</p> <p>“The department's RAP focuses on key principals of the Uluru Statement and the five dimensions of reconciliation – unity, race relations, historical acceptance, institutional integrity, equality, and equity. The key outcomes of the plan are to build and strengthen the department's relationship and engagement with First Nations peoples, organisations and corporations and communities.”</p> <p>“Traditional Owners have been caring for this land for more than 65,000 years and they have a deep understanding and knowledge of how to care for Country. We need to work together to develop innovative solutions when managing the water and environment in Western Australia,” Ms Andrews said.”</p> <p>EPBC Act commits to upholding and respecting the NT rights and interests of TO's including, under the NTA 1993 – NT rights to approach DCCEW in relation to works approvals that will impact on the natural, Indigenous and historic values of a place.</p>	<p>DWER takes it role as an environmental regulator seriously and recognises the importance of a partnership approach with First Nations people to protect and manage Western Australia's environment and water resources.</p> <p>The Delegated Officer notes this comment but overall review of requirements under the EPBC Act and possible changes to compliance reporting due to the DWER reconciliation plan are not considered as part of this works approval application.</p>
	<p>15. <b>Works Approval guidelines – Guide to Licensing</b></p> <p>Part 3 of Industry regulation June 219 s 112 of the EP Act = an offence to give or to cause to be given, false and misleading information</p> <p>Section 2.2 Production or design capacity = number of points that are not aligned in this proposed works</p> <p>Works approval to licence = risk-based approach must consider ERD's approvals = ERD's can only be completed and deemed compliant when TO's consultation has been done, when survey works for relevant GDA's have been completed.</p> <p>Environmental Compliance report – Not sure what are the criteria, but reports in this application do not fulfill the requirement on page 14.</p>	<p>The Part V EP Act assessment is limited to the discharge of dewatering water under Category 6 (Mine dewatering) and the construction of a landfill under category 64.</p> <p>An Environmental Compliance Report (ECR) is to be produced by the applicant on completion of construction works. Verification through an Environmental Compliance Report is not a test of the performance of the installed works or of any emissions. It is documented confirmation that what has been constructed and installed is authorised by the works approval.</p> <p>A licence application following a works approval may be submitted as soon as there is enough evidence to satisfy the department that works have been completed in accordance with</p>

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	<p>YNPBC asks why there is no CCIR (critical containment Infrastructure report) provided in accordance with page 11 Table 1. (Gold operations imply high and toxic contaminants, tailings, disposal and leachate risks)</p> <p>YNPBC asks why there is no Environmental Commissioning report in accordance with page 12 requirements. And reports do not sufficiently and adequately address the Dept criteria (risk, evidence, efficiency and reliability of controls).</p> <p>YNPBC Application for Licence post ECR, CCIR delivery.</p> <p>Assessment and decision-making criteria (p29) in relation to Native Title Holders comments and concerns; in relation to emissions, discharges impacts; actions resulting in environmental harm need to be better assessed.</p>	<p>the conditions of the works approval. This occurs once the last report (Environmental Compliance Report) is lodged.</p>
	<p>16. Why is Meeka Metals Mining Pty Ltd Gnaweeda Project not required to undertake ERD's approvals?</p> <p>In Section 6.2 of the Application form YNPBC finds there is a legal argument around 'significant proposal' as it is not defined within the EP Act, its regulations, supporting policies and not in the EIAAP (enviro impact assess admin procedures) 2010 – No objective interpretation The YNPBC feels its right to contest the 'no – not a significant proposal' based on the definition of having no significant impacts on the environment.</p>	<p>DWER notes this proposal has not been referred to the EPA for consideration under Part IV of the EP Act. The referral of the application 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.</p> <p>This assessment which is under Part V of the EP Act does not cover or require the proponent to prepare an Environmental Review Document (ERD).</p>