Government of Western Australia
Department of Water and Environmental Regulation

Decision Report

Application for Works Approval

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

Works Approval Number	W6969/2024/1
Applicant	Aragon Resources Pty Ltd
ACN	114 714 662
File number	DER2024/000520
Premises	Fortnum Gold Operations L52/172, M52/5, M52/6, M52/95, M52/96, M52/98, M52/99, M52/125, M52/132 and M52/133 PEAK HILL WA 6642 As defined by the premises maps attached to the issued works approval
Date of report	10 January 2025 (FINAL)
Decision	Works approval granted

Lauren Edmands

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

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1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of the premises. As a result of this assessment, works approval W6969/2024/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) has considered and given due regard to its regulatory framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary and overview of premises

Aragon Resources Pty Ltd (applicant), a wholly owned subsidiary of Westgold Resources Limited, operates the Fortnum Gold Operations (Premises) encompassing the Fortnum and Horseshoe Projects.

On 30 September 2024, 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 for the construction and operation of the new Nathan's In-Pit Tailings Storage Facility (NPTSF) at the Premises (as shown in Figure 1). The Premises is approximately 150 km north-west of Meekatharra.

The premises relates to category 5 and assessed design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in works approval W6969/2024/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in works approval W6969/2024/1.

2.2.1 Overview of tailings storage facilities

Six (6) tailings storage facilities (TSFs) are approved at the Premises:

1. Nathan's TSF (decommissioned and rehabilitated);
2. TSF1 (decommissioned and rehabilitated);
3. TSF2 (currently active with 20 months remaining capacity);
4. Tom's In-pit TSF (decommissioned);
5. El Dorado In-pit TSF (decommissioned); and
6. TSF3 (approved but not constructed).

The new NPTSF, the subject of this report, will be the seventh.

2.2.2 Existing Nathan's Pit

Nathan's Pit was previously used to store mine dewater discharge as a result of dewatering of the Labouchere pit. Water not needed for dust suppression was stored in Nathan's Pit to meet future dust suppression and mining processing requirements across the Premises (L8103/1989/3 Amendment Report granted 11 November 2021).

Westgold 2024 states "*The water level, currently at approximately 93 m below ground level, will be dewatered prior to tailings deposition*."

Westgold 2025a states "*The remaining volume of water to be removed from Nathan's Pit is 28,000 kL. All water will be pumped to the process water pond for use in the processing facility. There will be no discharge to the environment. Water abstraction from the Nathan's Pit is authorised by 5C licence GWL159877 (13).*"

2.2.3 Nathan's In-Pit Tailings Storage Facility (NPTSF)

The NPTSF will serve as the primary tailings storage for the Fortnum Processing Facility (labelled as Fortnum Plant in Figure 1) once TSF2 reaches capacity (anticipated for March 2026).

NPTSF will be built within the existing Nathan's Pit and cover approximately 11 hectares (ha) and reach a maximum height of 503 m Reduced Level (RL). With a projected storage capacity of 4.65 million tonnes (Mt), the NPTSF will accommodate tailings for 5.5 years based on an annual ore processing rate of 850,000 tonnes per annum (tpa) and an in-situ tailings density of 1.4 tonnes per cubic metre (t/m^3).

The NPTSF is located approximately 5 km west of the processing plant. Tailings will be conveyed to the NPTSF via a bunded high-density polyethylene (HDPE) tailings slurry pipeline. Tailings will be deposited via spigots (around the NPTSF rim) to optimise deposition and facilitate controlled discharge. Water will be recovered from the decant pond (via a floating suction pump) and returned to the process water pond at the processing plant via the return water pipeline for recycling within the processing circuit.

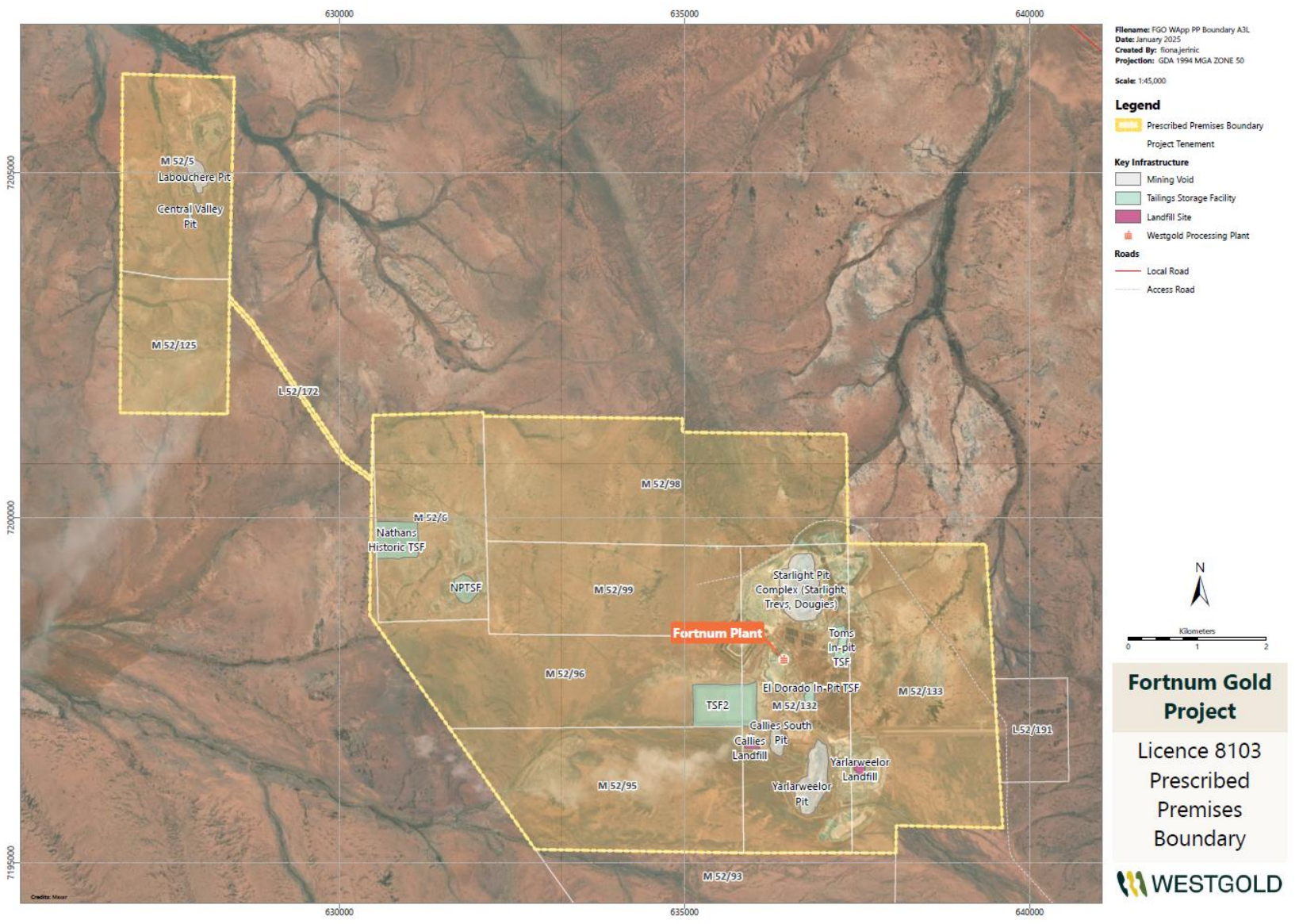

Figure 1: Location of the NPTSF

2.2.4 Tailings Characterisation

Westgold 2020 states *"Acid-base accounting results indicate that all of the tailings samples were classified as Non-Acid Forming (NAF)."*

Key test results and analysis of tailings have indicated that (Westgold 2020):

- Total Sulphur content ranged from 0.04 to 0.68% with a median of 0.22%;
- Acid Neutralising Capacity (ANC) ranged from 1.6 to 69 kg Sulfuric acid (H_2SO_4), indicating that tailings has buffering capacity;
- Net Acid Producing Potential (NAPP) values were negative, indicating that tailings have sufficient buffering capacity to neutralise any acid production;
- Net Acid Generation pH (NAG pH) test results indicated that under strongly-oxidising conditions of NAG-test work, samples did not acidify;
- Total metal analysis (on the Global Abundance Index (GAI)) revealed Mercury, Bismuth, Molybdenum and Selenium to be significantly enriched;
- Total metal analysis identified Chromium, Iron, Arsenic, Cobalt, Copper and Lead to be slightly enriched;
- Leach testing results showed all metals to be below *ANZECC & ARMCANZ 2000* Livestock Drinking Water limits; and
- When compared to *ASC NEPM* limits, only copper exceeds the Ecological Investigation Limit (EIL) but it does not exceed the Health-based Investigation Limit (HIL).

A representative process solution water sample from the Premises was collected in February 2024. The water quality characteristics as shown in Table 1 are typical of the tailings water expected within the NPTSF.

Table 1: Expected NPTSF tailings solution water quality

Analyte Name	Units	Result
pH**	pH Units	10.8
Conductivity @ 25 C	µS/cm	3300
Total Dissolved Solids Dried at 175-185°C	mg/L	2100
Arsenic	µg/L	8
Antimony	µg/L	5
Boron	µg/L	640
Cadmium	µg/L	0.2
Chromium	µg/L	1
Cobalt	µg/L	44
Copper	µg/L	16000
Iron	µg/L	190
Lead	µg/L	<1
Manganese	µg/L	<1
Nickel	µg/L	65
Selenium	µg/L	86
Thallium	µg/L	<1
Zinc	µg/L	110
Mercury	mg/L	<0.00005
Sodium, Na	mg/L	580
Potassium, K	mg/L	35
Calcium, Ca	mg/L	24
Magnesium, Mg	mg/L	<0.1
Total Hardness by Calculation	mg CaCO3/L	59
Carbonate Alkalinity as CO3	mg/L	83
Bicarbonate Alkalinity as HCO3	mg/L	<5
Sulphate, SO4	mg/L	380
Chloride, Cl	mg/L	520
Nitrate Nitrogen, NO_3 as N	mg/L	18
Nitrite, NO_2 as NO_2	mg/L	2.6
Nitrate, NO_3 as NO_3	mg/L	81
Total Cyanide	mg/L	98
Weak Acid Dissociable Cyanide (WADCN)	mg/L	91
Hexavalent Chromium, Cr6+	mg/L	0.011

The analysis indicates an alkaline pH, brackish water quality, and low levels of heavy metals across all measured parameters (Westgold 2024).

2.2.5 Seepage

TailCon 2024 states that the pre-mining ground water level at the Premises is approximately at RL 490 m Australian Height Datum (AHD) (10 to 16 m deep) in general. Water level in Nathan's Pit observed at the time of the site inspection (March 2024) was estimated at approximately RL 410 mAHD. It is assumed that NPTSF will be dewatered prior to tailings placement. The rates of seepage will be limited by tailings blocking water bearing joints and fractures. Once tailings deposition into NPTSF ceases, the groundwater mound will gradually dissipate, ultimately returning to pre-mining conditions.

2.3 Department of Energy, Mines, Industry Regulation and Safety (DEMIRS)

The Fortnum Group Mining Proposal and Mine Closure Plan (REG ID 112969) including the Fortnum Hybrid Power Project was approved on 12 September 2022.

The applicant has submitted a revised Mining Proposal and Mine Closure Plan (REG ID 126920) to DEMIRS, which will need to be approved prior to the initiation of construction and discharge activities associated with the NPTSF.

The department (DWER) referred the application to DEMIRS for advice on the geotechnical aspects of the proposed NPTSF. On 14 November 2024, DEMIRS advised that a geotechnical engineer had reviewed the NPTSF and has noted no major issues with the proposal. DEMIRS also provided the following comments:

- The pit walls show batter/multi batter scale failures and scats on berms demonstrating potential rock falls and wall instabilities. Therefore, ramp access to the pit needs to be maintained at all time in safe conditions free from rock falls and wall failures using suitable containments on high wall side, windrows on pit edge side and suitable wall monitoring procedures.
- There is no Trigger Action Response Plan (TARP) presented for the risk management of the NPTSF. The Emergency Action Plan needs to be further elaborated with responsible persons and specific actions and inducted to the workforce as a formal TARP.
- DEMIRS require a minimum of 0.3 m operational freeboard to be maintained across the full surface of the TSF, plus 0.2 m beach freeboard and capacity to store a 1% AEP or 1 in 100 years ARI 72 hours event (170 mm).
- Pit void which is being impounded with tailings must be completely dewatered before the start of the operation and the pit void must not connected to any underground openings/stopes/drives where active mining operations are ongoing.

The applicant has advised that a TARP for the risk management of the NPTSF Operations will be incorporated into the Maintenance and Surveillance Manual (OMSM) for the NPTSF (in preparation). The TARP will describe the Emergency Action Plan and critical controls crucial to preventing or mitigating identified high-consequence and unusual events and observations (Westgold 2025b).

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 commissioning / 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	Construction activities associated with NPTSF infrastructure Vehicle movement	Air / windborne pathway	• Water cart will be on-site for dust suppression.
Sediment laden stormwater		Overland runoff	• A bund wall constructed around the NPTSF.
Commissioning and Operation			
Dust from TSF surface	Deposition of tailings into NPTSF	Air / windborne pathway	• On-going monitoring conducted.
Tailings supernatant containing dissolved solids, metals and metalloids		Seepage	• Maintain a small decant pond (target 10% of NPTSF surface area). • Water is to be recovered from the decant pond. • Four monitoring bores (N1, N2, N3 and N4) installed around the NPTSF perimeter (as shown in Figure 2).
Tailings and contaminated water		Discharges to land / overtopping of NPTSF	• Tailings slurry discharged via spigot points over the NPTSF rim. • Spigot points located on the north, east, south and west of the NPTSF rim to control tailings deposition, allowing for the formation of tailings beaches with an approximate 1% slope. • Spigots operated in a clockwise sequence to optimise deposition and facilitate controlled discharge. • Maintain a decant pond below tailings beach level to facilitate sub-aerial deposition. • Supernatant water bleed from deposited tailings and any rainfall reporting to the NPTSF to be collected on the surface by the decant facility for return to the process water pond. • The return water pumping system comprises a pump equipped with a floating shallow head suction intake (such as Turret) to return decant water to the processing plant. The anticipated return water flow is 1,500 m^3 to 2,400 m^3 per day.

Emission	Sources	Potential pathways	Proposed controls
			• Provision of a minimum of 1 m total freeboard comprising minimum operational freeboard (vertical height between the tailings beach and embankment crest) of 300 mm and a minimum beach freeboard of 200 mm plus allowance for the 1% Annual Exceedance Probability (AEP) 72-hour event of 185 mm, for a total freeboard of 1 m. • Regular visual inspections of freeboard levels and perimeter embankments.
Tailings and return water	Tailings slurry and return water pipelines	Discharges to land	• Tailings slurry and return water pipelines laid above ground within an existing compacted earth bund capable of holding any potential spills. • Scour pits installed as required at strategic locations along the pipeline route to provide secondary containment. • Scour pits designed to hold any accumulated spill volume sufficient for a period prior to detection during routine inspections. • HDPE tailings slurry and return water pipelines. • Tailings slurry and water return pipelines to include telemetry. • Flow meters installed on both tailings slurry and return water pipelines to record the volume of water discharged to and returned from the NPTSF. • Routine operation and daily inspections of the tailings slurry and return water pipelines, with maintenance occurring as needed.

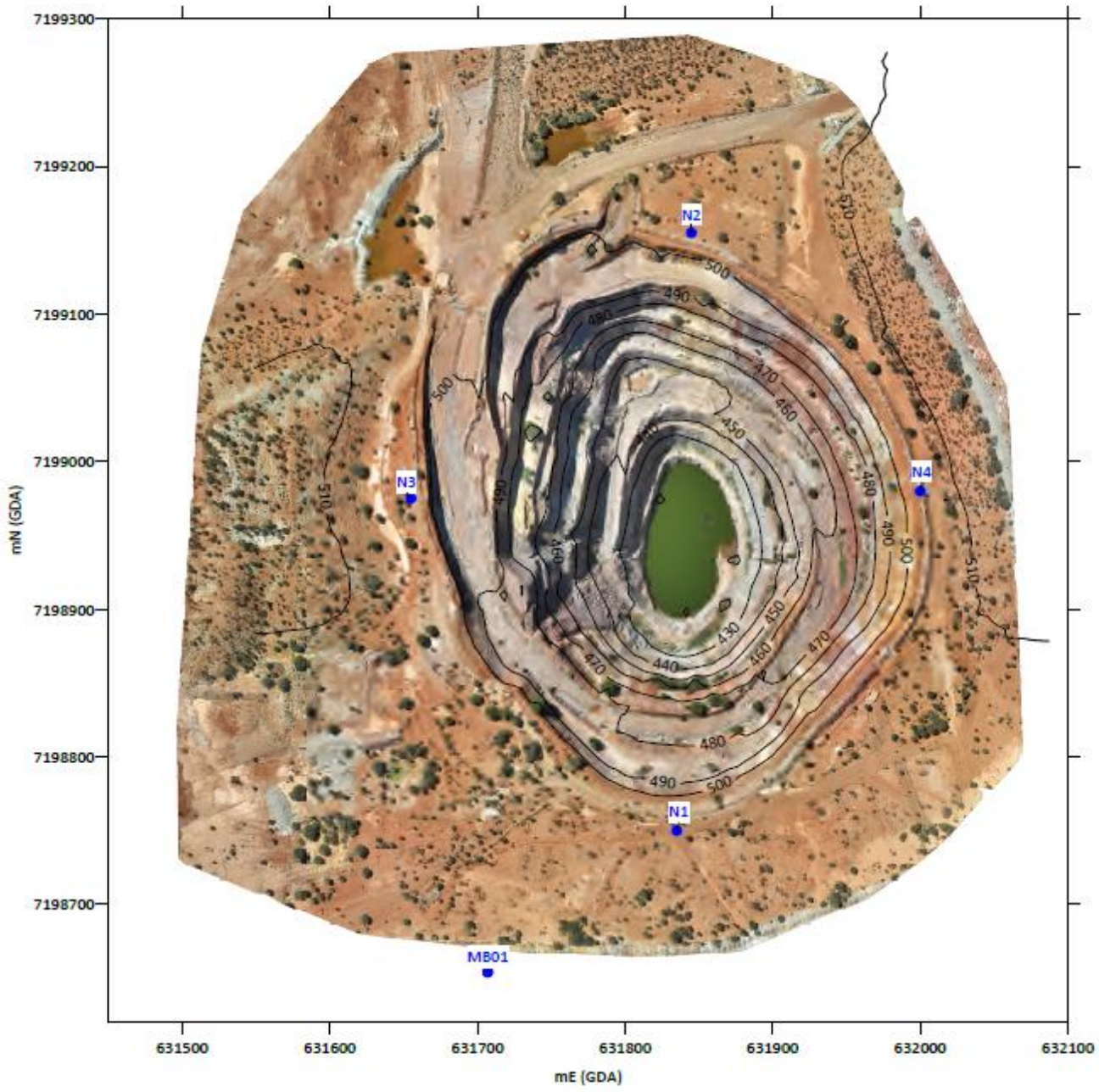

Figure 2: NPTSF proposed (N1, N2, N3 and N4) and existing (MB01) monitoring bore locations

3.1.2 Receptors

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

Table 3 and Figure 3 below provides a summary of potential environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (Guideline: Environmental Siting (DWER 2020)).

Table 3: Environmental receptors and distance from prescribed activity

Environmental receptors	Distance from prescribed activity
Rights in Water and Irrigation Act 1914 Proclaimed East Murchison Groundwater Area. Proclaimed Gascoyne River and Tributaries Surface Water Area.	Overlays the Premises boundary.
Groundwater Groundwater in the Premises area is primarily hosted within fractured rock aquifers exhibiting low hydraulic conductivity. Groundwater flow in the vicinity of the Premises generally moves northward towards the Gascoyne River. The results from water samples collected from Nathan's Pit indicate a sodium-chloride water type with a moderately alkaline pH, TDS levels are classified as brackish but suitable for cattle consumption. Heavy metal concentrations are low.	Pit rim elevation of 503 m above sea level and a current depth of 150 mbgl. During dewatering, groundwater levels in Nathan's Pit declined from approximately 13 mbgl to the current level of 93 mbgl.
Surface water bodies Ephemeral drainage line. Yarlarweelor Creek and tributaries. The Premises is situated with the upper reaches of the Gascoyne River catchment. Regional surface water drainage flows northward and westward towards the Gascoyne River and Yarlarweelor Creek, respectively. The Premises is characterised by ephemeral creek lines with shallow, discontinuous channels primarily dominated by mulga vegetation.	 250 m north-east of NPTSF. 2.5 km north-west of NPTSF.
Priority Ecological Community Priority 1 Robinson Range vegetation complexes (banded iron formation).	200 m from NPTSF.
Aboriginal heritage site Mt Labouchere Ritual/Ceremonial; Creation/Dreaming Narrative.	2 km from NPTSF.

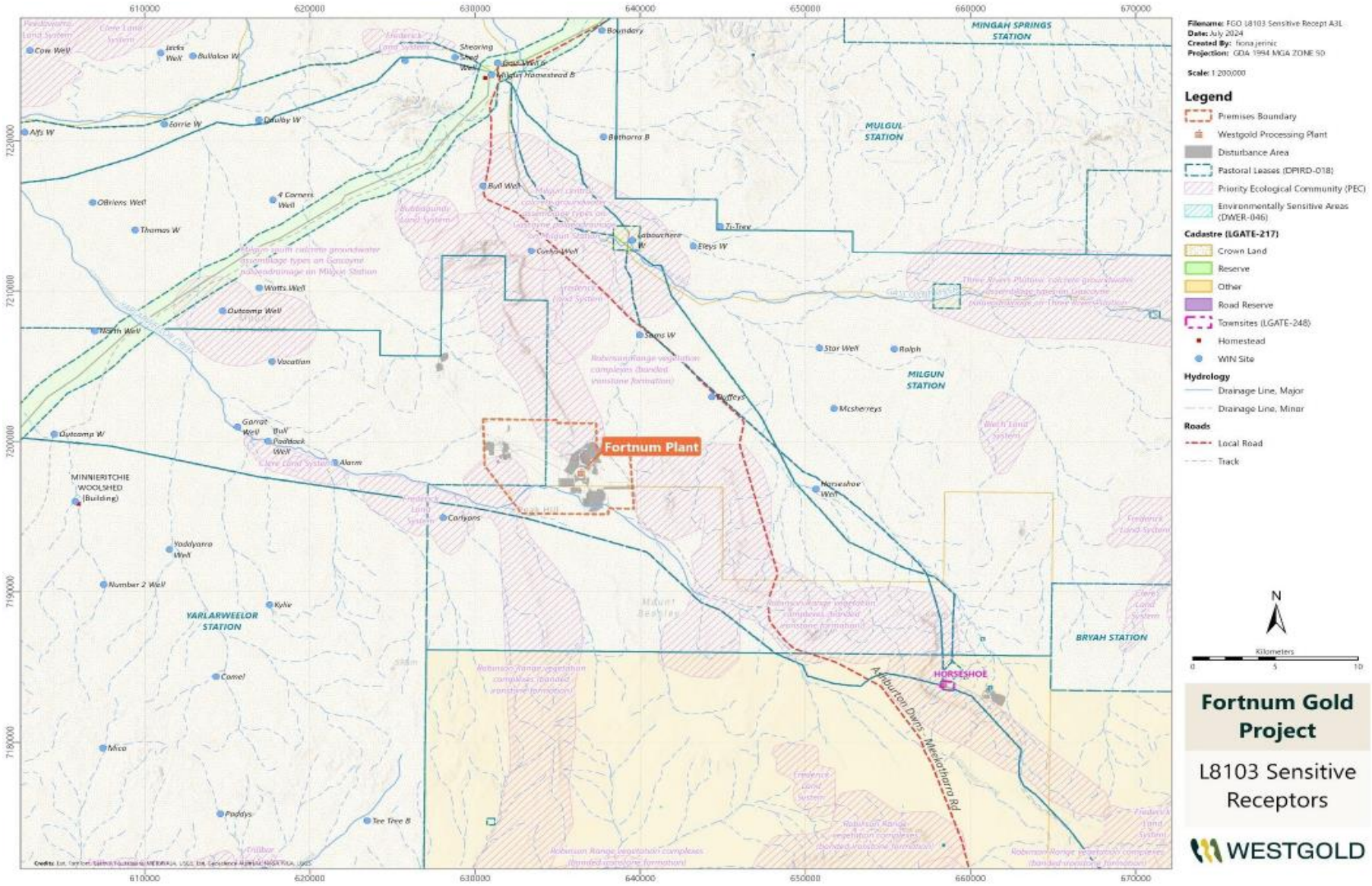

Figure 3: Sensitive Receptors

3.1.3 Hydrogeology

Table 4 shows the water quality characteristics observed in the Nathan's Pit. *Westgold 2024* states that these are representative of natural groundwater conditions in the area. The results indicate a sodium-chloride water type with a moderately alkaline pH, TDS levels are classified as brackish and heavy metal concentrations are low.

Table 4: Nathan's Pit groundwater quality

	23/09/2016	24/01/2018	4/03/2018	7/09/2018	14/10/2018	19/12/2018	19/02/2019	24/04/2019	10/08/2019	5/04/2020	13/10/2020	13/01/2021	14/10/2021	13/04/2022	23/10/2022	23/01/2023	22/04/2023	27/07/2023	17/10/2023	24/01/2024
pH (Lab) (units)	8.8	8.8	8.9	8.5	8.7	8.7	8.8	8.8	8.6	8.1	8.3	8.6	8.3	8.4	8.4	8.5	8.3	8.4	8.5	7.9
Conductivity (@ 25 C, Lab) (µS/cm)	2000	2100	2100	2200	2200	2200	2200	2100	1800	1000	1200	1300	1300	2100	2400	2400	2100	2100	2000	
Total Dissolved Solids (mg/L)	1200	1300	1300	1300	1300	1400	1200	1200	1000	590	730	760	760	1200	1400	1400	1300	1200	1200	480
Alkalinity Bicarbonate as HCO3 (mg/L)	180	190	150	220	210	200	190	180	210	150	170	150	190	170	180		180	170	<5	130
Alkalinity Carbonate as CO3 (mg/L)	15	35	58	11	23	28	28	32	11		1	7	1	0.004	0.005		0.001	5	<1	<1
Antimony (Dissolved) as Sb (mg/L)					0.001	0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001
Arsenic (Dissolved) as As (mg/L)	0.001	0.001	0.001	0.001	0.001	0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001
Boron (Dissolved) as Bo (mg/L)								1		0.32	0.46	0.38	0.47	0.48	0.8		0.68	0.67	670	400
Cadmium (Dissolved) as Cd (mg/L)	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001
Calcium (Dissolved) as Ca (mg/L)	35	35	33	33	34	32	30	36	34	44	46	48	51	52	59	55	51	53	49	40
Chloride (Dissolved) as Cl (mg/L)	370	400	420	400	410	400	400	410	300	150	190	190	200	370	450		400	380	350	140
Chromium (Dissolved) as Cr (mg/L)	0.004	0.003	0.003	0.003	0.003	0.003		0.003	0.003	0.001	0.004	0.003	0.002	0.021	0.025		0.019	0.018	19	1
Chromium Hexavalent as Cr6+ (mg/L)											0.004	0.003	0.002	0.021	0.026		0.019	0.018	0.015	<0.001
Cobalt (Dissolved) as Co (mg/L)					0.001	0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001
Copper (Dissolved) as Cu (mg/L)	0.001	0.001	0.001	0.001	0.001	0.003	0.008	<0.001	0.003	0.003	0.006	0.008	0.013	0.026	0.028		0.007	0.006	4	<1
Hardness (Dissolved) (mg CaCO3/L)	390	400	390	370	380	390	370	370	310				290	390	460	430	390	410	370	210
Iron (Dissolved) as Fe (mg/L)		0.005	0.005	0.005	0.005	0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005	<0.005	<0.005
Lead (Dissolved) as Pb (mg/L)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Magnesium (Dissolved) as Mg (mg/L)	74	75	75	71	72	74	72	68	53	28	35	38	40	64	76	71	64	66	60	27
Manganese (Dissolved) as Mn (mg/L)	0.01	0.001	0.002	0.001				0.001	0.009	0.015	0.008	0.003	0.003	0.014	0.003		0.001	0.001	12	120
Mercury (Dissolved) as Hg (mg/L)	0.0001	0.00005	0.00005	0.00005				<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005
Nickel (Dissolved) as Ni (mg/L)	0.002	0.001	0.001	0.001	0.001	0.001	0.003	0.001	0.001	0.003	0.005	0.003	0.007	0.006	0.018		0.014	0.01	7	<1
Nitrate as N (mg/L)										8.9	19	20		20	81		16	17	18	21
Nitrate as NO_3 (mg/L)		89	52	95	67	67	74		75		84	89	18	87	81	86	69	76	79	93
Nitrite as NO_2 (mg/L)		0.5	0.3	3	0.4	0.6	0.5		0.4		0.9	1.7	0.17	0.5	0.8	1.5	0.6	0.2	0.7	<0.2
Nitrogen (Total) (mg/L)		0.05														19	16			
Potassium (Dissolved) as K (mg/L)	29	33	33	32	33	33	32	35	22	13	14	16	16	20	22	23	19	20	18	11
Selenium (Dissolved) as Se (mg/L)	0.002	0.002	0.003	0.002	0.002	0.003	0.004	0.003	0.007	0.003	0.008	0.01	0.007	0.009	0.007		0.003	0.008	5	4
Sodium (Dissolved) as Na (mg/L)	250	290	280	260	280	270	260	250	210	97	130	140	140	240	290	260	250	260	230	100
Sulphate as SO4 (mg/L)	230	230	230	220	230	230	230	240	180	120	120	130	140	240	260		260	230	220	76
Thallium (Dissolved) as Tl (mg/L)							0.001			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001
Zinc (Dissolved) as Zn (mg/L)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	<0.005	<0.005	<0.005	0.009	0.008	0.006	<0.005	<0.005		<0.005	<0.005	<0.005	<0.005
Cyanide (WAD) (mg/L)																		<0.004	<0.004	<0.004
Cyanide (Total) (mg/L)																		<0.004	<0.004	<0.004

Water samples collected from existing monitoring bores at Nathan's in November 2023 are shown in Table 5. *Rockwater 2024* states that the results indicate the water is brackish to slightly saline, pH ranges from fresh to slightly alkaline, with high nitrate concentrations (40 to 280 mg/L).

Table 5: Nathan's existing bore groundwater quality

		Nathans 1	Nathans 2	Nathans 3
Analyte	Units	27/11/23	27/11/23	27/11/23
pH**	pH Units	8.1	8.1	8.1
Conductivity @ 25 C	µS/cm	2700	2500	3700
Total Dissolved Solids (by calculation)	mg/L	1600	1600	2600
Carbonate Alkalinity as CO3	mg/L	<1	<1	<1
Bicarbonate Alkalinity as HCO3	mg/L	370	450	240
Total Hardness by Calculation	mg CaCO3/L	670	640	1100
Antimony	µg/L	<1	<1	<1
Arsenic	µg/L	2	2	3
Boron	µg/L	950	850	850
Cadmium	µg/L	<0.1	<0.1	<0.1
Calcium, Ca	mg/L	100	92	100
Chromium	µg/L	<1	1	<1
Hexavalent Chromium, Cr6+	mg/L	<0.001	<0.001	<0.001
Chloride, Cl	mg/L	510	460	770
Copper	µg/L	2	2	1
Cobalt	µg/L	3	<1	69
Iron	µg/L	8	8	12
Lead	µg/L	<1	<1	<1
Manganese	µg/L	190	78	2
Mercury	mg/L	<0.00005	<0.00005	0.00037
Nickel	µg/L	<1	<1	<1
Magnesium, Mg	mg/L	100	100	200
Nitrate Nitrogen, NO_3 as N	mg/L	24	9.0	64
Nitrite, NO_2 as NO_2	mg/L	<0.2	<0.2	<0.2
Nitrate, NO_3 as NO_3	mg/L	110	40	280
Potassium, K	mg/L	34	31	11
Selenium	µg/L	6	8	9
Sodium, Na	mg/L	270	250	320
Sulphate, SO4	mg/L	240	230	370
Thallium	µg/L	<1	<1	<1
Zinc	µg/L	<5	<5	<5
Total Cyanide	mg/L	<0.004	<0.004	<0.004
Weak Acid Dissociable Cyanide (WADCN)	mg/L	<0.004	<0.004	<0.004

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 6.

Works approval W6969/2024/1 that accompanies this decision report authorises construction, commissioning and time-limited operations. The conditions in the issued works approval, as outlined in Table 6 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

An amendment to Licence L8103/1989/13 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. NPTSF. 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 6: Risk assessment of potential emissions and discharges from the premises during construction, commissioning and operation

Risk events					**Risk rating [1]** **C = consequence** **L = likelihood**	**Applicant controls sufficient?**	**Conditions [2] of works approval**	**Justification for additional regulatory controls**
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Construction								
Construction activities associated with NPTSF infrastructure Vehicle movements	Dust	Air / windborne pathway causing impacts to vegetation health	Surrounding vegetation PEC	Refer to Section 3.1	C = Minor L = Possible **Medium Risk**	Y	No conditions imposed The general provisions of the EP Act apply	N/A
	Sediment laden stormwater	Overland runoff causing sedimentation of surface water drainage	Surrounding vegetation Drainage lines	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	Condition 1 – Applicant control conditioned for a perimeter bund around the NPTSF The *Environmental Protection (Unauthorised Discharges) Regulations 2004* also applies	N/A

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Commissioning and Operation (including time-limited operation)								
Deposition of tailings into NPTSF	Dust from TSF surface	Air / windborne pathway causing impacts to vegetation health	Surrounding vegetation PEC	Refer to Section 3.1	C = Minor L = Rare **Low Risk**	Y	No conditions imposed The general provisions of the EP Act apply	N/A
	Tailings supernatant containing dissolved solids, metals and metalloids	Seepage causing contamination and waterlogging of soil Impacting on vegetation health and groundwater quality	Soil and vegetation in vicinity of NPTSF Groundwater	Refer to Section 3.1	C = Moderate L = Possible **Medium Risk**	N	Condition 1 – Design and construction requirements **Condition 2** – Construction of groundwater monitoring bores **Condition 7** – Requirement to conduct at least one baseline sampling event prior to environmental commissioning **Condition 9** – Commissioning requirements Condition 15 – Operational requirements **Condition 17** – Ambient groundwater monitoring **Condition 20** – Water balance	**Refer to section 3.3** As part of a subsequent licence amendment process, the following conditions of existing Licence L8103/1989/3 will be amended to include the operation of NPTSF and its associated infrastructure: • Condition 1 – Monitoring of representative water samples • Condition 4 – Inclusion of a requirement for a water balance over the NPTSF • Condition 10 – Infrastructure and controls table including tailings deposition & decant return; inspections; and freeboard requirement • Condition 11 – Authorised discharge points for tailings

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Deposition of tailings into NPTSF	Tailings and contaminated water	Discharges to land from overtopping of the NPTSF Impacting vegetation health and contamination of surrounding soils	Soils and vegetation in vicinity of NPTSF	Refer to Section 3.1	C = Moderate L = Rare **Medium Risk**	N	Condition 1 – Design and construction requirements **Condition 9** – Commissioning requirements Conditions 10 and 16 – Authorised discharge points Condition 15 – Operational requirements **Condition 20** – Water balance Condition 21 – Inspection of infrastructure	**Refer to section 3.3** As part of a subsequent licence amendment process, the following conditions of existing Licence L8103/1989/3 will be amended to include the operation of NPTSF and its associated infrastructure: • Condition 4 – Inclusion of a requirement for a water balance over the NPTSF • Condition 10 – Infrastructure and controls table including pipeline inspections; monitoring; and contingency actions • Condition 11 – Authorised discharge points for tailings
Tailings slurry and return water pipelines	Tailings and return water	Discharges to land and infiltration from leaks, pipeline ruptures or failure causing soil and groundwater contamination	Soil and vegetation along pipeline route Groundwater	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	Condition 1 – Design and construction requirements Condition 9 – Commissioning requirements Conditions 10 and 16 – Authorised discharge points Condition 15 – Operational requirements Condition 21 – Inspection of infrastructure	N/A

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 Additional regulatory controls

Conditions 2 and 7:

To monitor groundwater level and quality around the NPTSF, the applicant has proposed to install four additional monitoring bores (N1, N2, N3 and N4). An existing bore MB01 will also be incorporated.

The department has conditioned the construction of the proposed four monitoring bores through condition 2.

Under condition 7 the applicant must within 30 days of the monitoring bores being constructed and **prior to environmental commissioning of the NPTSF** conduct baseline sampling (at least one event) from the five bores (N1, N2, N3, N4 and MB01).

Condition 9:

Rockwater 2024 states "*The pit will be dewatered prior to tailings emplacement*." The department has conditioned the dewatering of NPTSF prior to the commencement of tailings deposition through condition 9.

This is also consistent with the comments received from DEMIRS – refer to section 2.3.

Condition 17:

The applicant proposed a monitoring program for the NPTSF. The department has adopted the monitoring program through condition 17.

Based on section 2.2.3 for the tailings characterisation, it was revealed that Mercury, Bismuth, Molybdenum and Selenium were significantly enriched. The department has added Bismuth and Molybdenum to the ambient groundwater monitoring program (Mercury and Selenium are already included).

Condition 20:

The department requires the applicant to undertake a monthly water balance of the NPTSF during time-limited operations. This has been applied through condition 20.

4. Consultation

Table 7 provides a summary of the consultation undertaken by the department.

Table 7: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 24 October 2024	None received	N/A
Local Government Authority (Shire of Meekatharra) advised of proposal on 24 October 2024	None received	N/A
DEMIRS advised of proposal 24 October 2024	Response received on 14 November 2024 – refer to section 2.3	Noted

Consultation method	Comments received	Department response
Applicant was provided with draft documents on 12 December 2024	On 3 January 2025, the applicant provided responses to the department's request for further information within the draft package On 7 January 2025, the applicant provided further information in relation to section 2.3	Documents updated accordingly to incorporate the applicant's responses. Section 2.3 updated to incorporate the applicant's response.

5. Conclusion

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

References

1. Australian and New Zealand Environment and Conservation Council (ANZECC) & Agriculture and Resource Management Council of Australian and New Zealand (ARMCANZ) 2000 – *Livestock drinking water guidelines, Australian and New Zealand guidelines for fresh and marine water quality* – Volume 3 available at ANZECC & ARMCANZ (2000) guidelines (www.waterquality.gov.au).
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
4. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
5. *L8103/1989/3 Amendment report* – granted 11 November 2021 available at Search - Department of Water and Environmental Regulation.
6. *National Environment Protection, (Assessment of Site Contamination) Measure 1999* (ASC NEPM).
7. Rockwater 2024, *Fortnum Gold Mine Hydrogeological Assessment of Nathans Pit (Planned TSF)* (Report No 500-6/24/01a), Report for Westgold Group, May 2024 (DWER reference: A2315980).
8. TailCon Projects Consulting Pty Ltd (TailCon) 2024, *Aragon Resources Pty Ltd Fortnum Gold Operations Nathans In-Pit TSF Design* (Rev. 0) (115-01-3104C-RR001_0A), 03 July 2024 (DWER reference: A2315980).
9. Westgold Resources Ltd (Westgold) 2020, *Fortnum Material Characterisation Report* July 2020 (DWER reference: A2315980).
10. Westgold 2024, *L8103/1999/3 Works Approval Application Supporting Documentation, Fortnum Gold Project Nathan's In-Pit Tailings Storage Facility Construction*, August 2024 (DWER reference: A2315981).
11. Westgold 2025a, *RE: APPLICATION FOR WORKS APPROVAL W6969/2024/1 UNDER THE ENVIRONMENTAL PROTECTION ACT 1986 – REQUEST FOR FURTHER INFORMATION*, dated 03 January 2025 (DWER reference: DWERDT1057798).
12. Westgold 2025b, *RE: RE: NOTIFICATION : APPLICATION FOR A WORKS APPROVAL W6969/2024/1 – DRAFT INSTRUMENT AND DECISION REPORT*, received 07 January 2025 (DWER reference: A2334400).