Meeka Metals

Works Approval for Integrated Waste Rock Landform

Additional Information

May 2025

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1 Introduction

This document is a response to the RFI received on 7 May 2025 and answers the queries raised by DWER in their assessment of Works Approval and provides further information as required.

2 Queries Raised by DWER

2.1 Item 1 - Time limited Operations

In the initial application 120 days for commissioning was requested within the supporting information document. The application will be revised to also seek 120 days instead of the incorrect 90 days listed in the application.

2.2 Item 2 – Environmental Commissioning

- Build
- Pressure test
- Flush
- Transfer water into TSF, to saturate the floor and check decant at design rates
- Timeline
- Commission plan- steal from somewhere

A period of 120 days for commissioning is requested. Commissioning will start when the starter embankment is completed and ready to receive tailings.

At the completion of the construction, the IWL will be inspected and assessed by a competent professional to determine and ensure the construction has occurred as per the design report, and that the construction complies with the approval and other relevant standards.

Compliance testing will be conducted on the embankment and will comprise of the following;

- Standard maximum dry density (SMDD) and optimum moisture content (OMC); and
- Field dry density (using nuclear density gauge)- density ratio and moisture content.

This testing will determine whether further work is required to utilise the embankment, or whether the construction is adequate. Where the testing determines the construction is to the standard required, a report confirming this will be presented to Meeka, and the TSF will be considered fit for use.

The construction of the pipeline will be done using qualified professionals to weld the pipeline together. When complete the pipeline will be pressure tested and flushed. Water will be transferred into the TSF to saturate the floor and check the decant returns water at the design rate.

2.3 Item 3 – Category Checklist

The Tailings storage facility checklist has been revised and included with this submission of additional information. The supporting information document and the TSF3 design report contains all the information requested within the TSF checklist. The information is spread throughout the two documents and supplied in the sections outlined within the table of contents.

2.4 Item 4 – Proposed Works Approval Fee

The category applied for is category 6, processing of metallic and non-metallic ore. Meeka will process over 500,000t of ore per year, but less than 5,000,000.

The IWL will cost approximately $21,051,000 to construct, which includes all civil and earthworks, as well as pipelines and other associated infrastructure. This comprises five stages over an 8-year construction timeframe. The stages of the construction are supplied in the table below.

Stage	Storage Capacity (Mm^3)	Storage Capacity (Mt)	[redacted]
1	0.93	1.396	[redacted]
2	0.96	1.442	[redacted]
3	1.022	1.533	[redacted]
4	1.064	1.596	[redacted]
5	0.64	1.050	[redacted]
Total	4.623	6.934	[redacted]

The DWER fee calculator was used to calculate the fee associated with the Works Approval. The calculator determined that the cost was 300 fee units, and totalling $4,080.

2.5 Item 5 – Fauna and Birds

The TSF is located within a migratory bird route and has the potential to attract birds to the pooled water. The site was operated between 2012 and 2017 and there are no records of birds interacting with the TSF, for this reason the potential for birds to access the TSF is considered to be low.

The quality of water within the TSF will be high enough that no impacts to fauna should occur if they interact with the water. The WAD will be below 50mg/L, which does not pose an issue. Metals from the tails are not leachable and will not impact fauna.

To manage the risk to birds, the project will dewater the tails as soon as possible, ensuring pooled water is kept to a minimum. The tails from the Andy well mine were demonstrated to settle quickly and water recovery was able to occur quickly after deposition. The noise and lighting at the TSF and from the mill will serve to distract birds.

There are no records of birds or other fauna interacting with the TSF when in operation previously. This suggests that birds and fauna were not an issue and required no further management.

2.6 Item 6 – Tailings Characteristics

The Turnberry and St Annes deposits are located within the greenstone belt comprising a succession of metamorphosed mafic to ultramafic, felsic and metasedimentary rocks, with minor felsic to intermediate intrusives. The stratigraphy dips steeply east to sub-vertical with isoclinal folding along a north-north-east axis with a north-north-east trending foliation.

Lithologies at Turnberry are dominated by dolerites with the best mineralisation along a 1.7km north-northeast trending shear hosted within a magnetic quartz dolerite. The area is covered with transported colluvium to a depth of ~10m to 25m and is highly weathered with a depth to fresh rock of approximately 100m (Pendragon, 2024).

The ALS Metallurgy and Mineral Processing laboratory in Balcatta Perth prepared two composite samples of tailings (1kg each P80: 150µm) representative of the Turnberry and St Annes ore bodies from 15 tailings leach residues from each ore body, each weighing 800g. These composites were engineered to reflect the nature of tailings when mined via open pit and underground methods.

The two composite samples were submitted to ALS Environmental Laboratories, a National Association of Testing Authorities (NATA) accredited laboratory, in Wangara Perth and analysed for the parameters listed in Table 1.

Table 1 Tails Test Work

Analyte	Unit	Limit of reporting
Bulk density	Kg/m^3	1
Emerson Value aggregate test	-	-
pH value (1:5), pH_f, pH_{fox} and GAG-pH (or pH_{ox})	pH Unit	0.1
Electrical conductivity @ 25°C (1:5)	µS/cm	1
Total Sulfur (S), Sulfate-Sulfur (S-SO4), Chromium Reducible Sulphur (CRS), Total Organic Carbon and Total Inorganic Carbon	%	0.005-0.01
Total Metals: Al, As, Ba, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Se, U, V and Zn	mg/kg	1-50
Net Acid Generation (NAG at pH4.5 and 7.0)	pH unit	0.01
Net Acid Producing Potential (NAPP)	kgH_2SO_4/t	1
Acid Neutralising Capacity (ANC)	kgH_2SO_4/t	1
Acid Buffering Characterisation Curve	-	-
Exchangeable Cations (Ca, Mg, K, Na), Cation Exchange Capacity CEC) and Exchangeable Sodium Percentage (ESP)	meq/100g and %	0.1
Total Metals: Aluminium, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Mercury, Nickel, Selenium, Thorium, Uranium, Vanadium, Zinc	mg/kg	0.1-50
Leachable Metals (at pH 5, pH 7 and pH 9): Aluminium, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Mercury, Nickel, Selenium, Thorium, Uranium, Vanadium, Zinc	mg/kg	0.0005-1

The results of the tailings test work are supplied in the Pendragon report but are summarised within this response to the RFI. The tails contain between 0.02% S (St Annes) and 0.55% S (Turnberry). The potential acid forming ration for both tailings is 5.0 and 7.2. a number greater than two indicates material is unlikely to be acid forming (Pendragon, 2024). **The tailings are considered to be NAF.**

Electrical Conductivity (EC) is a measure of the salinity of a soil or rock. Drainage of water from saline rocks may release water with high salt concentrations (saline drainage) which may impact and deteriorate the ecological function and particularly water quality in the downstream environment.

The Cation Exchange Capacities (CEC's) of the tailings materials vary between 3.0meq/100g (St Annes) and 16.8meq/100g (Turnberry) hence vary between low (<10 indicative of soils prone to leaching and nutrient loss with a low water holding capacity) and medium (10 to 15 which is typical range for loams with a moderate nutrient and water holding capacity).

The exchangeable sodium percentage (ESP) of the tailings vary between 1.7 (Turnberry) and 9.0 (St Annes) hence vary between non sodic and sodic (when the ESP is greater than 6). The Turnberry tailings have an Emerson Class of 4 (no dispersion) whilst the St Annes tailings have an Emerson Class of 2 (some dispersion).

The most dominant metals are Iron, Aluminium and Manganese (Appendix A). Regarding potential contamination from the tailings once deposited in the Suzie Pit, the following are relevant:

- Barium, Beryllium, Boron, Cadmium Mercury and Selenium are absent.
- Chromium, Cobalt, Copper, Lead, Thorium, Uranium, Vanadium and Zinc occur in low concentrations and in all instances below the relevant ASC NEPM Areas of Ecological Significance Investigation Levels.
- Arsenic occurs in concentrations between 61mg/kg (Turnberry) and 854mg/kg (St Annes) exceeding the ASC NEPM Areas of Ecological Significance Investigation Level of 40mg/kg.
- Nickel occurs in concentrations between 39mg/kg (St Annes) and 56mg/kg (Turnberry) exceeding the ASC NEPM Areas of Ecological Significance Investigation Level of 30mg/kg.

A geochemical abundance index (GAI, Förstner *et. al*., 1993) was calculated to assess enrichment of the tailings by metals/metalloids:

GAI = log[(Cn/(1.5*Bn)),2]

where Cn is the measured content of the nth element in the sample and Bn is the average crustal abundance of the element. The Average Crustal Abundance values were sourced from the GARD Guide, Chapter 5 (INAP, 2009) and where no value was available for a particular element, values were obtained from *Environmental Chemistry of the Elements* (Bowen, 1979).

The GAI is expressed in integer increments from 0 to 6, where a value of 0 indicates that the element is present at a concentration less than, or similar to, the average crustal abundance; and a GAI value of 6 indicates a 96-fold enrichment above the median crustal abundance. Generally, a GAI of 3 or greater signifies enrichment that may warrant further examination; this is particularly the case with some environmentally important *trace* elements, such as arsenic, chromium, cadmium, copper, lead, selenium and zinc, more so than with major rock-forming elements, such as aluminium, calcium, iron, manganese and sodium.

Elements identified as enriched may not necessarily be a concern for revegetation, drainage water quality or public health, but their significance should still be evaluated. Cognisance should be taken of:

- Whilst some element concentrations can be elevated relative to the median crustal abundance, the nature of an ore deposit implies that background levels are generally expected to be elevated.

- If a sample is enriched relative to the average crustal abundance, there is no direct correlation that that sample will also leach metals/metalloids at elevated concentrations. The mobility, bioavailability and toxicity of metals/metalloids are dependent on many factors including mineralogy, adsorption/desorption and the environment in which it occurs.

- Because an element is not enriched does not mean it will never be a concern, because under some conditions (e.g. low pH) the solubilities of common environmentally important elements such as aluminium, copper, cadmium, iron and zinc increase significantly.

The GAI calculations (Appendix A) for tailings materials indicate that only one element, namely Arsenic, is enriched: Turnberry has a GAI of 3 and St Annes 7.

The potential for metalliferous drainage was also assessed, under pH conditions of 5, 7 and 9. The results are presented within Table 2.2 of the Pendragon report. In general, all metals are low with the exception of arsenic, aluminium, iron, and beryllium. It is worth noting that the grind size of the tails is low and test work involved constantly tumbling the sample over a 24 hour period. These conditions are highly unlikely to be encountered within the pit, which would lead to a reduction in the potential for leaching.

Any seepage of metals from the pit would be limited due to the sealing effects of the fine ground tails, and would only occur for a short period (Pendragon, 2024). To minimise any potential leaching of metals, Meeka will keep the water pool on the tails as low as possible and will undertake rehabilitation of the pit as soon as practically possible. A NAF cover layer will be placed over the tails and will be contoured to promote the shedding of water. With this management, and the proposed monitoring, any potential issues will be identified and managed as they arise.

2.7 Item 7 - Tonnage of gold bearing ore to be transferred across from the Gnaweeda Project versus tonnage of gold bearing ore from the Andy Well Gold Project. Variation in potential tailings geochemistry between different deposits.

The tonnages of gold to be processed are shown in the table below. Ore from Gnaweeda will be mixed with Andy Well ore and processed concurrently.

Details of the tails from both Andy Well and Gnaweeda have been provided in separate reports, and the geochemistry is discussed in the Works Approval application as well as section 2.4 of this document.

The tonnages of ore to be processed for the planned resumption of the Andy Well mine and Gnaweeda Deposits are shown in Table 2.

Table 2 MGP Combined Mine and Processing Production Schedule

Project Year	Units	Total	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
Open Pit Mining												
St Anne's	Kt	**179**	13	165	-	-	-	-	-	-	-	-
	g/t	**3.44**	1.70	3.58	-	-	-	-	-	-	-	-

	Koz	**20**	1	19	-	-	-	-	-	-	-	-
Turnberry	Kt	**474**	-	324	-	-	-	-	-	-	2	148
	g/t	**2.28**	-	2.55	-	-	-	-	-	-	0.70	1.70
	Koz	**35**	-	27	-	-	-	-	-	-	0	8.1
Total	Kt	**653**	13	489	-	-	-	-	-	-	2	148
	g/t	**2.60**	1.70	2.90	-	-	-	-	-	-	0.70	1.70
	Koz	**55**	1	46	-	-	-	-	-	-	0	8.1
Underground Mining												
Andy Well	Kt	**2,737**	-	8	371	433	529	493	431	280	191	-
	g/t	**3.93**	-	1.71	3.10	3.65	3.74	4.02	4.50	4.31	4.66	-
	Koz	**345**	-	1	37	51	64	64	62	39	29	-
Total	Kt	**2,737**	-	8	371	433	529	493	431	280	191	-
	g/t	**3.93**	-	1.71	3.10	3.65	3.74	4.02	4.50	4.31	4.66	-
	Koz	**345**	-	1	37	51	64	64	62	39	29	-
Mining Total												
Tonnes	Kt	**3,390**	13	498	371	434	529	493	431	280	194	148
Grade	g/t	**3.67**	1.70	2.88	3.10	3.65	3.74	4.02	4.50	4.31	4.61	1.70
Ounces	Koz	**400**	1	46	37	51	64	64	62	39	29	8.1
Processing Total												
Tonnes	Kt	**3,390**	-	468	340	340	340	340	340	340	393	489
Grade	g/t	**3.67**	-	2.95	3.23	4.13	4.70	4.91	5.13	3.91	3.32	1.85
Milled Oz	Koz	**400**	-	44	35	45	51	54	56	43	42	29
Recovered Oz	Koz	**390**	-	43	34	44	50	52	55	42	41	28

2.8 Item 8 - Foundation Preparation and Permeability

The foundation for the TSF will be the Wiluna Hard Pan. To prepare the foundations for the construction of the TSF, the vegetation and topsoils will be stripped to a depth of 250mm and stockpiled for later use in rehabilitation. Any rubbish exposed during this clearing will be removed and sent to the new landfill (the TSF sits atop the existing landfill). The embankment will then be placed directly onto the hardpan.

Upstream of the embankment a low permeability soil liner will be keyed into a trench that will be formed on the exposed hardpan layer. The Wiluna Hardpan possesses sufficient geotechnical shear strength, attributed to its ferruginous/calcareous/siliceous induration, such that the hardpan layer is anticipated to constrain any geotechnical shear failure plane forming within the embankment.

The rigidity of the Wiluna Hardpan for the foundation has been proven in on site testing. Test pits into the hard pan all proved difficult to excavate and refusal occurred at a shallow depth.

TSF3 will be a single cell, constructed by downstream raising using mine waste sourced from existing mine waste dumps. The maximum height of TSF3 will be 17.5 m after the construction of the Stage 2 embankment.

The embankment of TSF3 will be a zoned embankment comprising an upstream zone of low permeability roller-compacted tailings with a downstream zone of traffic-compacted mine waste material. The low permeability materials in the upstream zone will be sourced from the in-situ tailings in TSF 1 and TSF 2.

The embankment incorporates a cut-off trench founded on the hardpan below the surficial soils, approximately 0.5 m below ground level in order to reduce seepage losses. The embankments will be keyed into the existing TSF2 embankment.

The embankments for TSF3 have design slopes of 1(V):2(H) upstream and 1(V):3(H) downstream, with a crest width of 4 m on the upstream zone and 4 m on the downstream zone. The upstream embankment crest will have a 2% cross-fall towards the upstream side, with a 0.5 m (min height) windrow at the downstream crest, and above-ground tailings pipeline at the upstream crest. The decant causeway has design slopes of 1:1.5 (V: H) and a nominal 6 m crest width. The crest of the decant causeway will have 0.5 m minimum height windrows on both sides of the accessway. Breaks in the windrow on the low side will allow surface water to run off. There is an upstream toe drain in Stage 1 on the northern, western and southern embankment to assist with the captures and removal of any potential leachate from TSF3.

The geotechnical evaluation for the IWL comprised a site visit, executed on 8 to 10 May 2024, to visually assess the current conditions at the site proposed for TSF3. The details from the geotechnical assessment are presented in Appendix 2 of the design report (SRE, 2024).

The design concept adopted for TSF3 has been formulated to meet both the general requirements of the mine and the general parameters discussed in the previous sections.

The design is based on the available reports, testing and the experience of the author who has been involved in the development, operation and annual reviews of existing similar, above-ground tailings storage facilities for various gold projects throughout Western Australia.

The key features from the geotechnical assessment of the site and the design of the downstream-raised TSF3 are:

- The TSF is a robust design with significant structural Stability
- Incorporation of an upstream toe drain to mitigate potential seepage losses and enhance stability.
- The rock-ring filter is designed to clarify the supernatant water to enhance the potential for high water recovery and significantly limit the spatial extent of the decant pond, which will not exceed a distance of 12.5m from the outer side of the decant rock ring. This means the total radius of the decant pond is limited to approximately 40m from the centre of the decant rock ring.

2.9 Item 9 - Emissions, discharges and wastes – Seepage modelling

A seepage assessment was undertaken by SRE (SRE, 2024). The model was constructed using seepage analysis software assuming a steady state seepage flow. The assessment was undertaken based on the following assumptions:

- The IWL will have an upstream toe drain connected to an external sump at the toe of the northern, western and southern embankments.

- TSF3 west, south and east embankments comprise 4 downstream constructed raises from the natural ground level to an embankment height of up to 15 m (RL 481 m to RL 496 m), followed by a single 2.5 m high upstream raise to RL 498.5 m, Stage 5. Please note that the existing ground level for the eastern embankment is approximately RL 490 m, and an initial 1 m high embankment (crest RL 491 m) will be constructed to prevent runoff entering TSF3 from the higher ground to the east. The Stage 4 crest of the embankments have a minimum width of 6 m.

- TSF3 north embankment, southern embankment of TSF2 will, after any loose surface materials have been removed, have a low-permeability soil liner placed on the existing TSF2 embankment, which will be at least 4 m thick (measured along horizontal plane), with this thickness specified based on constructability considerations (layer width is dictated by compaction and earth haulage machinery width) and will be keyed into the southern extremities of the eastern and western embankments of TSF2. This embankment will be raised in stages up to the existing TSF2 embankment crest at RL 489 m. Above this elevation the northern embankment of TSF3 will be founded onto the existing TSF2 crest as well as onto the in-situ tailings within TSF 2 to RL 496 m, followed by the Stage 5 raise, a single 2.5 m high upstream raise to RL 498.5 m.

- TSF3 tailings are to be deposited up to no closer than 1 m below the embankment crest. They is assumed to be fully inundated up to maximum tailings beach surface (i.e. 1 m freeboard below crest).

- In-situ TSF 2 tailings are sufficiently desaturated that a phreatic surface is not present.

- Natural groundwater table within the IWL footprint is RL 457m

- Soil hydraulic conductivity coefficients based on geotechnical interpretive findings presented above and summaries in the table below.

- All soil material (except the tailings impounded within the IWL, which are considered to be fully saturated) is modelled considering saturated/ unsaturated potential, defined by Van Genuchten hydraulic conductivity function, combined with preset volumetric water content functions contained within SEEP/W

Table 3 Hydraulic Conductivity of Construction Materials

Material	Input Hydraulic conductivity coefficient, K (m/s)
Natural foundation (fractured Wiluna Hardpan)	$1x10^{-5}$
Mine waste fill	$1x10^{-6}$
Low-permeability soil liner (tailings fill)	$5x10^{-7}$
Impounded IWL tailings	$5x10^{-7}$

SEEP/W analysis output based on the above assumptions and considerations is presented as an illustration in Figures 4.6 and 4.9 (SRE, 2024). From these figures, the following comments can be made:

- Seepage out of TSF3 is anticipated to preferentially drain to the upstream toe drain, although some vertical drainage down into the groundwater table may occur and is not expected to saturate in-situ TSF2 tailings underlying the proposed TSF3 north wall alignment.
- Seepage drainage through the Wiluna Hardpan, on the basis it is similarly fractured (or contains unsealed sterilisation boreholes), as inferred from the existing TSF VWP response when it was operating (refer findings in Section 4.7.2), is anticipated to be sufficiently fast such that natural foundation soils underlying the TSF3 base are likely to remain relatively dry without a phreatic surface development down to the natural groundwater table.
- Mine-waste fill forming the bulk of the TSF3 embankment body is anticipated to remain dry due to (i) the relative impermeability of the low-permeability tailings soil liner placed on the upstream embankment batter, and (ii) fast seepage drainage through the TSF basin and into the Wiluna Hardpan as discussed above.

Meeka accepts the departments position of reviewing the model to check the accuracy of the modelling.

2.10 Issue 10 - Groundwater mounding

Groundwater mounding is not expected to be an issue with the IWL. The design of the IWL is such that seepage from the facility is diverted to an underground drain where water is then recovered and returned to into the system. This will prevent interaction the IWL and the natural groundwater table.

Further to the above, dewatering within the active mining area will lover the local water table ignorantly. Prior to any mining at the site, the local groundwater table was at approximately 6m below ground level. After a five year period of mining the groundwater currently sits at approximately 20m below ground level. When underground operations resume, dewatering will again influence groundwater levels and the water table will again be lowered. During the operation of the IWL there is therefore no mechanism for groundwater mounding to occur.

The limited potential for mounding to occur is further supported by the past operation of TSF 1, where mounding was not seen to be an issue. Given the tails are the same physically and chemically, the behaviour of the tails can be expected to be the same with consolidation and drying expected to occur quickly. A decant system within the IWL will seek to remove as much water as possible from the tails to limit the potential for water to seep from the system. This design is included within the IWL design report and is included as Appendix 1 to this document.

Water quality monitoring has been ongoing since the inception of the Andy Well mine. As part of the resumption of operations Meeka has been monitoring groundwater levels and quality. In 2024 two level readings of the SWL around the existing TSF were undertaken. The results are shown in the table below.

Table 4 Andy Well Mine Groundwater Levels

Bore Name	April (mbgl)	September (mbgl)
MB01	17.4	16.53
MB03	16.95	15.78

MB04	16.86	16.01
MB06	17.07	16.53
MB07	15.91	15.08

Groundwater quality has also been monitored as part of licence conditions and developing a baseline chemistry suite. The quality of groundwater within the mine area is generally high, with low levels of dissolved metals and other salts.

Table 5 Andy Well Mine Groundwater Chemistry

Analyte Name	Unit	Drinking Water Guideline	Bore ID and Sample Date					
			Mono A Jan 2019	Mono B Jan 2019	RL1395 Jan 2019	Suzie Open Pit Jan 2019	Camp Water Bore July 2024	TSF MB07 May 2025
pH	pH Unit	(6.5-8.5)	8.1	8	7.93	8.1	7.7	7.3
Conductivity @ 25 C	µS/cm	-		2300	2000		7200	
Total Dissolved Solids	mg/L	(600)	1300	1500	1270	1300		2000
Total Alkalinity as CaCO3	mg/L	-	150	140	154	160	240	
Bicarbonate, HCO3	mg/L	-	150	180	188	160	190	
Carbonate Alkalinity as CO3	mg/L	-	<5	<1		<5	<1	
Chloride	mg/L	(250)	420	340	429	370	2000	
Sulphate	mg/L	**500** (250)	220	200	242	210	710	440

Analyte Name	Unit	Drinking Water Guideline	Bore ID and Sample Date					
			Mono A Jan 2019	Mono B Jan 2019	RL1395 Jan 2019	Suzie Open Pit Jan 2019	Camp Water Bore July 2024	TSF MB07 May 2025
Nitrate, NO_3 as NO_3	mg/L	**50**	51	33		46	210	9.0
Calcium Ca	mg/L	-	66	83	73	63	250	
Iron Fe	mg/L	(0.3)	0.12	0.17	<0.05	0.42	45	880
Potassium K	mg/L	-	17	17	21	15	25	
Magnesium Mg	mg/L	-	49	65	55	47	270	
Manganese Mn	mg/L	**0.5** (0.1)	0.016				<1	13
Sodium Na	mg/L	(180)		310	247	230	800	360
Silicon Si	mg/L	-						
Silica Soluble	mg/L	(80)	65			64	52	
Total Organic Carbon	%	-	1		0	<1	<1	

2.11 Issue 11 - Information on the installation of new groundwater monitoring bores in the vicinity of the new TSF

This issue appears to be related to the Suzie Pit. There are currently a series of monitoring bores around the existing TSF (TSF3 Stage 1 Design Plan, SRE 2024). where monitoring bores are removed to construct the IWL these will be replaced. The figure below shows the current monitoring points at the Andy Well Mine Site. Monitoring bores TSFMB8 -11 will remain in place when the IWL is constructed. Bores TSMB7, TSMB12 and TSFM13 will be lost in the construction. The three bores will be replaced at the southern end of the IWL to allow this area to be investigated. Water flow within the area flows from south to north, meaning the bores that will remain in place are the most critical for water quality monitoring.

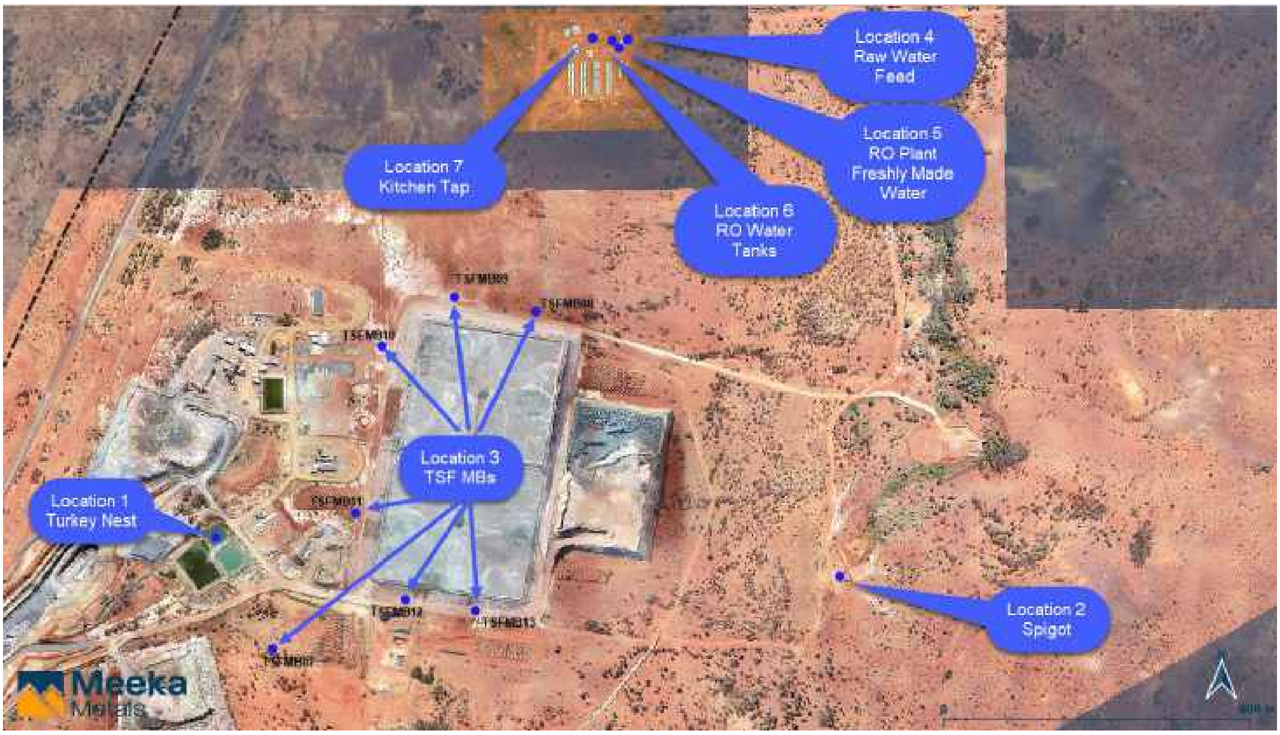

Figure 1 Monitoring bore locations

The existing monitoring bores have been dipped and sampled every three months as per the current care and maintenance plan, under which the site has been operational. SWLs are presented in table 2.

The site currently takes water samples monthly from the dewatering discharge spigots and from other bores in and around the operation. The TSF bore monitoring would be increased to monthly when the TSF is in operation, as per the requirements of the site licence, when it is returned to an active mining site, rather than care and maintenance.

2.12 Issue 12 - Pipelines

Pipelines will not be fitted with telemetry or any auto cut off measures. The mine operated between 2012 and 2017 with no telemetry or auto cutoff mechanisms and had no incidents with the operation of TSF1.

The pipeline between the plant and the TSF is approximately 500m long and highly visible. The pipeline will be inspected every shift at least once and will be contained within a V drain to contain any leaks or minor spills. This approach is considered to be acceptable given the work carried out on the tailings.

The studies undertaken by Meeka have identified that the tails from the plant will be inert and contain no significant levels of leachable materials. In the event of a spill, the material can be recovered and then transferred to the IWL with no significant, or lasting environmental impacts.

The area between the process plant and the TSF is highly disturbed due to the previous open pit mining activities and associated disturbances. The vegetation in the area is completely degraded and there is no intact habitat left. When the IWL is constructed, the pipe will enter from the north, crossing entirely disturbed areas. While the ming will operate to ensure there are no tails spills over the life of ore processing, minor leaks and spills in the immediate vicinity of the pipeline will be able to be cleaned up quickly and effectively.

2.13 Issue 13 – Appendices 1 and 2

Appendices supplied originally via upload link. Can be resent.