TURNBERRY GOLD PROJECT

DEWATERING ASSESSMENT

REPORT FOR
MEEKA METALS LTD

DECEMBER 2023

Report No. 413-1/23/01

Rockwater
HYDROGEOLOGICAL AND ENVIRONMENTAL CONSULTANTS

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Disclaimer: The results in this report are based on test pumping analysis and a numerical model, which are an estimation only of the known aquifer conditions derived from a relatively few number of bore sites and short duration pumping tests. The aquifer is heterogeneous and varies in thickness and hydraulic conductivity throughout the aquifer.

REVISION	AUTHOR	REVIEW	AUTHORISED	ISSUED
Draft	DS / MT	SB	MT	27/10/23

1 INTRODUCTION

Meeka Metals Limited (Meeka) is undertaking a pre-feasibility study (PFS) for it's 100% owned Turnberry Gold Project, located approximately 45 km north-west of Meekatharra, in the Murchison Province of Western Australia. A regional locality map is provided in Figure 1.

Meeka plans to mine the Turnberry Project initially by a series of open pits, and later as an underground mining operation (Fig. 2). The pits will be developed over a 3 year period, to a proposed depth of 167m below ground level (bgl) (348 m AHD). The standing water level at Turnberry is 9 to 13 m bgl (~500 m AHD), therefore the water level in the pits will need to be lowered by up to 160 m to provide dry mining conditions.

Meeka engaged Rockwater to supervise the test pumping of four existing bores which were drilled and constructed in 2018, to determine the Turnburry Deposit aquifer parameters and also to construct a 3D numerical model to predict dewatering volumes and associated drawdowns. This report presents the results of the investigation and recommendations for future hydrogeological investigations at the Turnberry deposit.

Meeka also plans to develop two open pit mines at The St Anne's deposit, approximately 5 km to the south of Turnberry(Fig. 2) however is not included in the scope of this report.

2 PREVIOUS INVESTIGATIONS

A hydrogeological investigation was undertaken by CDM Smith in 2017 & 2018 to assess the mine water management requirements of the Turnberry Mine. The assessments compiled available hydrogeological data and field investigations.

Four production bores (TBPB 01 to 4) and four monitoring bores (TBMB 24 to TMB 27) were installed as part of the field programme (see Section 7). Eleven additional monitoring bores (TBMB 01-3, 4-12) are also listed in the company database however these were drilled prior to this investigation and the drilling details are not available.

3 REGULATORY FRAMEWORK

Turnberry is located in the DWER designated East Murchison Groundwater Subarea and targets the fractured rock Aquifer.

Drilling, bore construction, and operation in Western Australia is governed by the Rights in Water and Irrigation Act (the Act), (Rights in Water and Irrigation Act 1914, Government of Western Australia)

The requirements of the Act include licences to:

1. Take and use groundwater (Section 5C of the Act); and
2. Construct or alter a bore (Section 26D of the Act).

3.1 LICENCE TO TAKE WATER

The extraction of groundwater at Turnberry is authorised under the DWER Section 5C Licence GWL 175556(4), which has an allocation limit of 2 GL/annum (Appendix I). The duration of the licence is 27 October 2016 to 24 October 2026. The Section 5C Licence is subject to the following terms, conditions and restrictions:

1. The annual water year for water taken under this licence is defined as 1 January to 31 December.
2. The licensee shall comply with the commitments of the operating strategy 'Groundwater Licence Operating Strategy, February 2016, Andy Well Gold Project', as prepared by Doray Minerals Limited and approved by the Department of Water on 4 March 2016 including any modifications to the commitments as approved during the term of the licence.
3. Every 12 month(s) the licensee shall provide to the Department of Water a Groundwater Monitoring Summary for the preceding water year. The first report is due 31/03/2017.
4. Every 3 year(s) the licensee shall provide to the Department of Water a Groundwater Monitoring Review. The first report is due 31/03/2018. A Groundwater Monitoring Summary need not be submitted in a year in which a Groundwater Monitoring Review is due.
5. The volume of all water taken under this licence must be metered using an approved meter fitted to each drawpoint.
6. The licensee must ensure the installed meter(s) accuracy is maintained to within plus or minus 5% of the volume metered, in field conditions.
7. The licensee must take and record the reading from each meter required under this licence, at the end of each month.
8. The licensee must notify the Department of Water in writing of any water meter malfunction within seven days of the malfunction being noticed. The licensee shall comply with the commitments of the addendum to the operating strategy dated 28/9/18 as prepared by Sheffield Resources Ltd and approved by the Department of Water and Environmental Regulation on 28/09/2018, including any modifications to the commitments as approved during the term of the licence.

4 CLIMATE

The Turnberry Project area has a semi-arid to arid climate with hot summers and cool to mild winters. Rainfall is irregular but mainly falls in the first half of the year, from southern winter fronts, and local thunderstorms or northern cyclonic events in the summer. Average annual rainfall recorded at the Meekatharra Airport is 236.2 mm and at Munarra Station, located 6.5 km from the project site; 229.5 mm (Table 1). Long-term average rainfall is included in Table 1.

Mean monthly evaporation, varies from about 240 mm in June, to 370mm during December. Mean evaporation is higher than mean rainfall throughout the year. The Annual average potential evapotranspiration is very high, about 2,809 mm.

Table 1 – Monthly rainfall and evapotranspiration totals at Meekatharra Airport (mm)

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Rainfall 1944 to 2023[1]	29.2	36.1	30.8	18.8	21.6	28.5	20.0	10.6	4.9	5.9	11.7	14.4	234.0
Rainfall 2020[2]	61.8	60.7	2.6	7.6	3.4	0	1.2	18.6	0	4.2	10.2	19.8	190.1
Rainfall 2021[2]	2.8	14.6	29.4	6.6	67.4	2.4	20.0	2.8	0	3.5	14.6	2.2	166.3
Rainfall 2022[2]	8.6	43.8	48.4	13.6	12.4	20.4	13	9.4	56.4	12	0.2	18.8	257.0
Rainfall 2023[2]	7.4	30.6	124.4	37.3	0	4.6	0.4	9.0	0.2	0	-	-	-
Average Evaporation[4]	357.4	299.5	279.2	200.1	141.3	100.2	106.1	143.1	204.4	280.7	326.6	370.3	2,809

[1]Data for the Meekatharra Airport, BoM station 7045
[2]SILO data for the Meekatharra Airport

5 GEOLOGICAL SETTING

Turnberry is located within the Murchison Province; the westernmost of three granite-greenstone terranes in the Archaean Yilgarn Craton (Watkins, 1990). Specifically, the project lies on the Gnaweeda Greenstone Belt (GGB), a narrow band of Archean volcano-sedimentary rocks which is comprised of fractionated dolerite with an ultramafic base, basalt, felsic volcaniclastics and porphyry surrounded by a package of siliciclastic sediments and shales (Meeka Metals, 2023). The area is dominated by north-northeast (NNE) shears, which are sub-parallel to stratigraphy and offset by a number of northwest-southeast (NW-SE) trending structures, which can be seen in the airborne magnetic imagery (DRM, 2016). Mineralisation forms a 1.7 km north-northeast trending gold anomalous corridor, which is broadly defined into three zones, Turnberry South, Central and North.

The shallow geology consists of an extensive colluvial clay overlying a deep weathering profile to about 80 m depth (CDM Smith, 2017).

6 HYDROGEOLOGY

Turnberry is located within the Meekatharra subarea of the East Murchison Groundwater Area, which is managed by DWER. Groundwater typically occurs within the surficial sediment (colluvium/alluvial/calcrete), the weathered profile and within fractures within the bedrock (e.g. granite and greenstone) (DoW, 2006).

The previous investigations undertaken by CDM Smith (2017) indicate that the depth to groundwater at Turnberry ranges from 9 to 13 m below ground level (bgl) and that the regional groundwater flow direction is to the north following topography (Fig. 3 and Fig. 4). Groundwater is fresh, with an average salinity of 600 mg/L total dissolved solids (TDS) and is slightly alkaline, with an average pH of 8.1.

7 BOREFIELD

7.1 PRODUCTION BORES

Four production bores were drilled in 2017 using rotary air drilling methods (Fig. 4). Drilling and construction details are available in the bore completion report (CDM Smith, 2018) and summarised below:

Table 2 – Production bore construction summary

Bore ID	Coordinates (GDA94, Zn 51)		RL	Drilled Depth	Collar Height	Casing details	Cased Depth	Slotted /open interval	Standing Water Level	EC	Airlift Yield
	mE	mN	m AHD	m	m agl		m bgl	m bgl	m btc	uS/cm	L/s
TBPB001	678,094	7,086,585	512	154	0.25	200mm CL 12 PVC	101.4	71.4-101.4 [s] 101.4-154 [o]	10.36	1,335	7.98
TBPB002	678,215	7,086,848	512	147.7	0.35	200mm CL 12 PVC	66.3	66.3-147.5 [o]	28.92	1,141	11.9
TBPB003	678,039	7,087,089	512	148	0.50	200mm CL 12 PVC	85	85-148 [o]	30.60	893	10.5
TBPB004	677,900	7,087,546	512	148	0.28	200mm CL 12 PVC	93	57-93 [s] 93-148 [o]	31.69	1,239	2.6

(m bgl) meters below ground level [s] = slotted interval, [o] = open interval (uncased)
(m btc) meters below top of casing

7.2 MONITORING BORES

Construction details of all monitoring bores at Turnberry are presented in Table 3.

Table 3 – Monitoring bore construction summary

Bore ID	Easting	Northing	Ground elevation	Water Level	Drilled depth	Casing details	Cased depth	Slotted /open interval
	GDA94 Zone 50		m AHD	m btc	m bgl		m bgl	m bgl
TBMB001	678207	7087787	512	-	50	-	48	6 - 48
TBMB002	678184	7087580	512	-	51	-	45	3 - 45
TBMB003	678164	7087306	512	-	57	-	56	14 - 56
TBMB004	678046	7087233	512	-	51	-	21	0 - 21
TBMB006	678206	7086985	512	-	57	-	57	15 - 57
TBMB007	677333	7086833	512	-	57	-	57	15 - 57
TBMB009	678082	7086697	512	-	57	-	33	0 - 33
TBMB010	678040	7086434	512	-	57	-	42	0 - 42
TBMB011	678129	7086029	512	-	57	-	39	0 - 39
TBMB012	678143	7085364	512	-	57	-	45	3 - 45
TBMB019	678004	7087266	512	-	57	-	42	0 - 42
TBMB020	677060	7087074	512	-	39	-	36	6 - 36
TBMB021	678054	7086908	512	-	57	-	18	0 - 18
TBMB022	677902	7085830	512	-	57	-	36	0 - 36
TBMB023	678312	7086871	512	-	57	-	24	0 - 24
TBMB024	678303	7086847	512	11.04	150	50mm CL 18 PVC	131	59-71, 131-149
TBMB025	678102	7087327	512	11.06	148	50mm CL 18 PVC	147.6	51.6-87.6
TBMB026	677934	7087090	512	10.48	152	50mm CL 18 PVC	102	102-132 [s] 138-152 [o]
TBMB027	678074	7087530	512	11.05	154	50mm CL 18 PVC	114	114-150 [s]

[s] = slotted interval, [o] = open interval (uncased)

8 PUMPING TESTS

Step-rate and constant-rate pumping tests were undertaken on production bores by Flow Water Services (FWS) under the remote supervision of Rockwater.

FWS used an electronic submersible pump (ESP) fitted with a cooling shroud. This allowed for FWS to pump from within the screens. The ESP selected for the testing programme was a Franklin SP 60-21, 37 kW, 50 Hz ESP.

Discharge rates were measured with a calibrated flow meter and groundwater levels were monitored in the production bores and monitoring bores using an electronic water level indicator and calibrated data loggers. Pumping rates were controlled with a Variable Speed Drive (VSD). For each test, pumped water was diverted through a discharge pipeline 250 m from the bore headworks to prevent recharge to the aquifer.

Step-rate tests were undertaken, to assess the appropriate pumping rates for the constant-rate tests, and to assess bore efficiencies and determine the base of aquifer depth at each bore. Constant-rate pumping tests were conducted for 48-hours duration.

8.1.1 PRODUCTION BORE TBPB 01

Bore TBPB 01 was tested from 12 to 15 October 2023. A step-rate test, comprising three steps at variably increasing rates of one-hour duration was conducted on 12 October 2023, and comprised rates of 3, 4 and 4.5 L/s (Figure 5). The final step could not be completed as the aquifer drawdown reached the pump inlet.

The drawdown observed in the step-rate test indicated a discharge rate of 2.5 L/s (the lowest allowable setting for the pump) was most appropriate for the 48-hour constant-rate test.

The constant-rate test was undertaken from the 12 to 15 October 2023 at a discharge rate of 2.5 L/s, with the test extended to 61.5 hrs to determine if an aquifer boundary would be intersected. A drawdown of 55.79 m (final water level of 69.41 m bgl) was recorded at the end of the 61.5-hour test (Figure 6).

8.1.2 PRODUCTION BORE TBPB 02

Tesst pumping was attempted at Production Bore on 11 October 2023. A step-rate test was attempted at 4 L/s, however the water level drew down to the pump inlet within 6 minutes and it was determined that there was insufficient yield to complete a pumping test.

8.1.3 PRODUCTION BORE TBPB 03

Test pumping was undertaken at Production Bore TBPB 03 from 16 to 19 October 2023. A step-rate test, comprising four one hour steps at 2.5, 4.0, 4.5 and 5.0 L/s was undertaken on 16 Octobe 2023 (Figure 7). The drawdown observed in the step-rate test indicated a discharge rate of 4 L/s was be appropriate for the 48-hour constant-rate test.

The constant-rate test was undertaken from the 17 to 19 November 2022 at discharge rate of 4 L/s. A drawdown of 66.98 m (final water level of 78.00 m bgl) was recorded at the end of the 48-hour test (Figure 8). The bore recovered to 52.55 m (67% of the initial water level) after 15 minutes from the cessation of pumping.

8.1.4 PRODUCTION BORE TBPB 04

Bore TBPB 04 was tested from 19 October 2023. A step-rate test was commenced at the lowest allowable rate of 2.5 L/s. The test was terminated after 30 minutes of pumping at 2.5 L/s as the drawdown reached the pump inlet. It was determined that there was insufficient yield to complete a pumping test (Figure 10).

8.2 DATA ANALYSES

An inverse-modelling assessment of aquifer performance data was undertaken using AQTESOLV software using the constant rate pumping test data from TPB01 and TPB03 (Appendix II). Curve-matching techniques were employed to assess the bore and aquifer characteristics of each bore. The Neuman algorithm was employed for these analyses. This algorithm is an analytical solution for unsteady flow to a fully or partially penetrating, finite-diameter bore with bore-storage and bore 'skin' in a homogeneous, anisotropic unconfined aquifer with delayed gravity response.

The results are presented in Table 4 with analytical data included in Appendix II.

Table 4 – Pumping test summary

Bore ID	Duration (minutes)	Q[1] (L/s)	DD[2] (m)	T[3] (m^2/d)	S[4]	Sy[5]	Aquifer Thickness (m)	Hydraulic conductivity (m/day)
TBPB 01	3690	2.5	55.79	15.58	1.01E-07	0.005	88	0.177
TBPB 03	2880	4	66.98	11.93	1.01E-07	0.0004	75	0.159

1. Q = Pumping rate for constant-rate test
2. DD = Drawdown at the end of the constants-rate pumping test
3. T = Aquifer transmissivity
4. S = Aquifer Storativity
5. Sy = Aquifer Specific Yeild

9 MODEL DESCRIPTION

A groundwater model has been developed to estimate the dewatering requirements of the planned mine at Turnberry. A 2-layer numerical groundwater model was set up in the software package Processing Modflow Pro version 8.0.47, a recent version of MODFLOW (McDonald and Harbaugh, 1988), finite-difference groundwater modelling software designed by the US Geological Survey.

Aquifer parameter values were set based on the pumping test results and a simple steady-state calibration as summarised in Table 5.

Table 5 – Summary of Adopted Aquifer Parameters

Model Parameter	Weathered Profile Model Layer 1	Bedrock Model Layer 2
Layer Top (m AHD)	Ground level (approx. 520)	420
Layer Botton (m AHD)	420	200
Horizontal Hydraulic Conductivity* (m/d)	0.17	0.001
Specific Storage (1/m)	1.00E-06	
Specific Yield	0.025	
Groundwater level (m AHD)	501 (near centre of pits)	

*Vertical hydraulic conductivity assumed to be 10% of horizontal

Other model features and assumption included:

- Layer 1 includes the colluvium and the weathered profile. The assigned hydraulic properties are based on the results of the recent pumping tests which represent an average for this layer. There is likely to be variation in hydraulic properties within this profile (ie. clayey sediment at the top and higher hydraulic conductivities and storage at the base or weathering) but there is inadequate hydraulic data available to define this further.
- Layer 2 represents fresh bedrock. In the base-case of the modelling this is homogeneous and unfractured.
- The model grid covered an area of 15 km east-west by 25 km north-south, centred over the proposed mine and was orientated approximately perpendicular to the northerly groundwater flow direction. The model cell size was set at 50 m x 50 m.
- Constant head cells were assigned along the northern and southern boundaries, along the direction of groundwater flow.
- Layer 1 of the aquifer was modelled as an unconfined system and Layer 2 unconfined/confined, with transmissivity variable with time.
- Recharge was set at 2% of annual average rainfall, or 6.41E-07 m/d. This was adjusted in steady-state calibration until a realistic hydraulic gradient was achieved across the model domain.

9.1 RESULTS

The model developed was then run in transient mode to simulate in-pit dewatering during the starter, shallow and deep pit phases of the planned mining at Turnberry. PMWIN's drain package was used to reduce the groundwater level to the base of the respective pits, with the mining progression set at 10 m/month until the base of the ultimate pits was reached for each stage.

The results are summarised in Figure 10 and indicate that the average predicted dewatering flow rate based on this set of hydraulic parameters is 16 L/s over the three years of mining. The highest dewatering rates, up to 24 L/s, are predicted during the mining of the shallow pits as the largest areas of the weathered profile are dewatered. Water level profiles for the three stages of the proposed mine are included in Appendix III.

As the model parameters are homogeneous throughout the respective layers, the predicted rate of dewatering is relatively uniform with time. In reality this may be more variable, with higher flows anticipated at the bases of weathering and if/when any permeable fault structures are encountered in the bedrock.

9.2 PREDICTIVE UNCERTAINTY ANALYSIS

As the aquifer parameters set in the model were defined on the basis of only two pumping tests and a simple steady-state calibration, a predictive uncertainty analysis was performed to understand the impact of varying model parameters on the predicted dewatering rates. This is summarised in Table 6 and shows that the modelling results are very sensitive to hydraulic conductivity (75% change to predicted dewatering results) and somewhat sensitive to specific yield (15% change to results).

Table 6 – Predictive Uncertainty Analysis – % Change to Predicted Dewatering Rate

Mining Period	Hydraulic Conductivity		Specific Storage		Specific Yield		With Faults
	x 2	x 0.5	x 2	x 0.5	x 2	x 0.5	
Starter Pits	74.1%	-42.4%	0.1%	-0.1%	15.0%	-12.5%	7.6%
Shallow Pits	73.4%	-41.5%	0.7%	-0.6%	16.7%	-12.6%	18.7%
Deep Pits	76.9%	-42.7%	1.3%	-0.8%	14.1%	-10.8%	27.0%

Included in this analysis was the incorporation of faulting in the bedrock Layer 2. The fault geometries were as defined in the geology description of the Feasibility Summary (Meeka Metals, 2023) with their extent limited to the within 300 m of the pits. The hydraulic parameters of the faults were set at 0.1 m/d for horizontal hydraulic conductivity, 1.0E-04 for specific storage and 0.01 for the specific yield. This yielded an average dewatering rate of 28 L/s, with most of the increased flows during the deep pits phase of mining (27% change to predicted dewatering results).

10 CONCLUSIONS AND RECOMMENDATIONS

Pumping tests were undertaken in the production bores by FWS to determine aquifer coefficients and to assess borefield yields.

The average predicted dewatering flow rate is predicted to be 16 L/s over the three years of mining. The highest dewatering rates, up to 24 L/s, are predicted during the mining of the shallow pits as the largest areas of the weathered profile are dewatered. Based on this rate, the dewatering volumes will remain within the allocated GWL volume of 2 GL/annum.

Given the relatively low-yielding aquifer present at site, it is likely that the most efficient method of dewatering is from in-pit sumps with a trailer mounted pump. If production bores are to used (due to disposal considerations), they will need to target the fractures/structures in connection with the pits. Disposal options for surplus water may need to be considered for periods with a greater dewatering requirement.

It is advised that the model is re-calibrated after the completion of the starter pits. The dewatering volumes and monitoring bore levels will need to be regularly monitored. Pressure transducers can be installed in each bore so that the water levels can be recorded continuously, allowing any trends to be assessed.

Recommended monthly monitoring to aid future modelling:

- Water level measurement in monitoring bores (m AHD);
- Recording of pit water levels (m AHD);
- Cumulative extraction volume from in-pit sumps (and bores if used) for each location;

Any anecdotal hydrogeological notes from the drilling and pit construction should be recorded to aid in identifying faults and structures. This includes recording any particularly broken ground when mining the starter pit.

Dated: 21 December 2023

Rockwater Pty Ltd

D Scott
Senior Environmental Scientist

M Taylor
Principal Hydrogeologist

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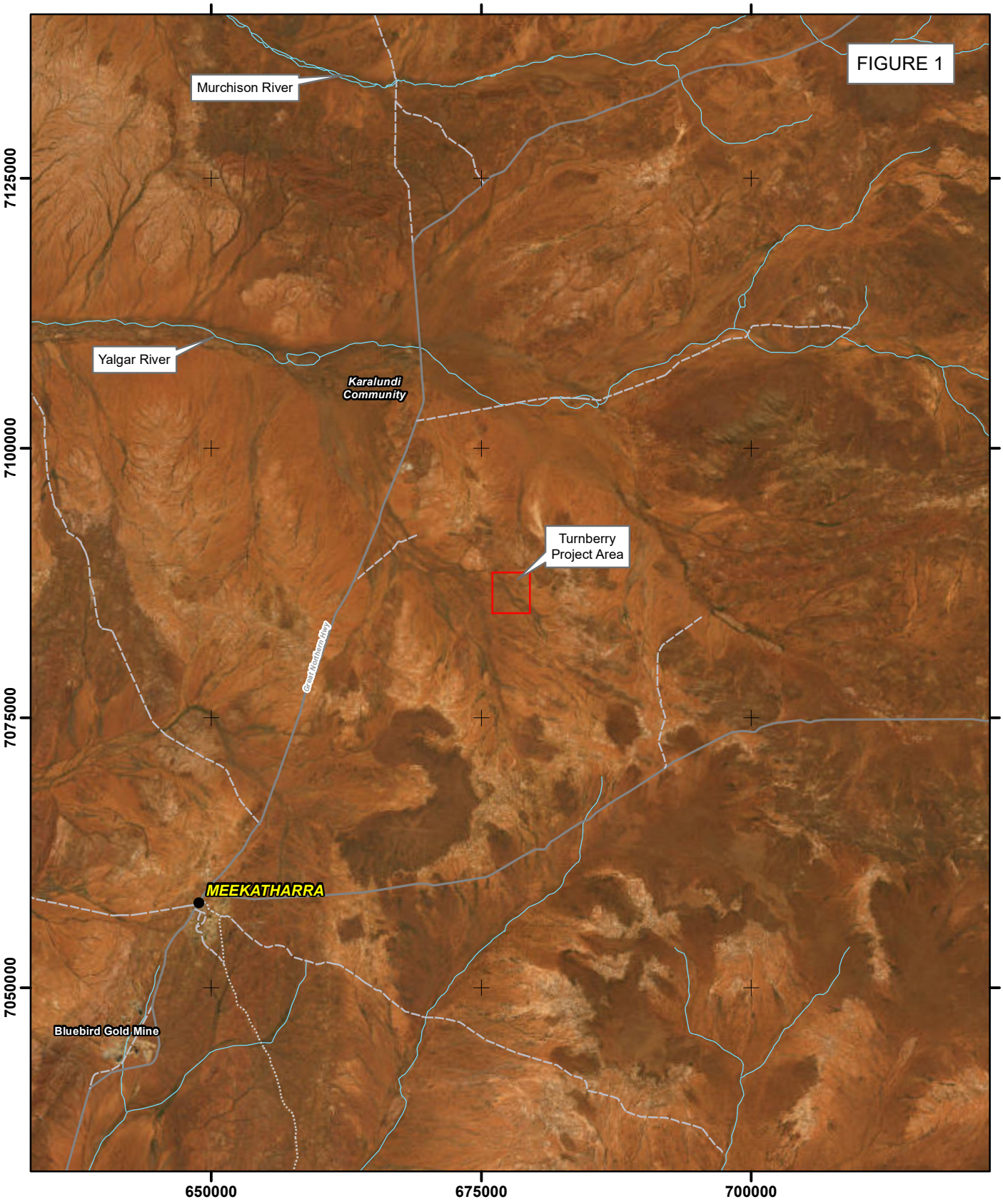
FIGURES



Data Source: ESRI (2023), DoW (2023)

L:/GIS Projects/413-1 - Meeka Turnberry/ Fig. 1 - Locality.mxd

Populated place
Rivers_DoW
Principal Road
Minor Road
Secondary Road

N

1:500,000
A4

Grid: MGA 1994 Zone 50

CLIENT: Meeka Metals Ltd

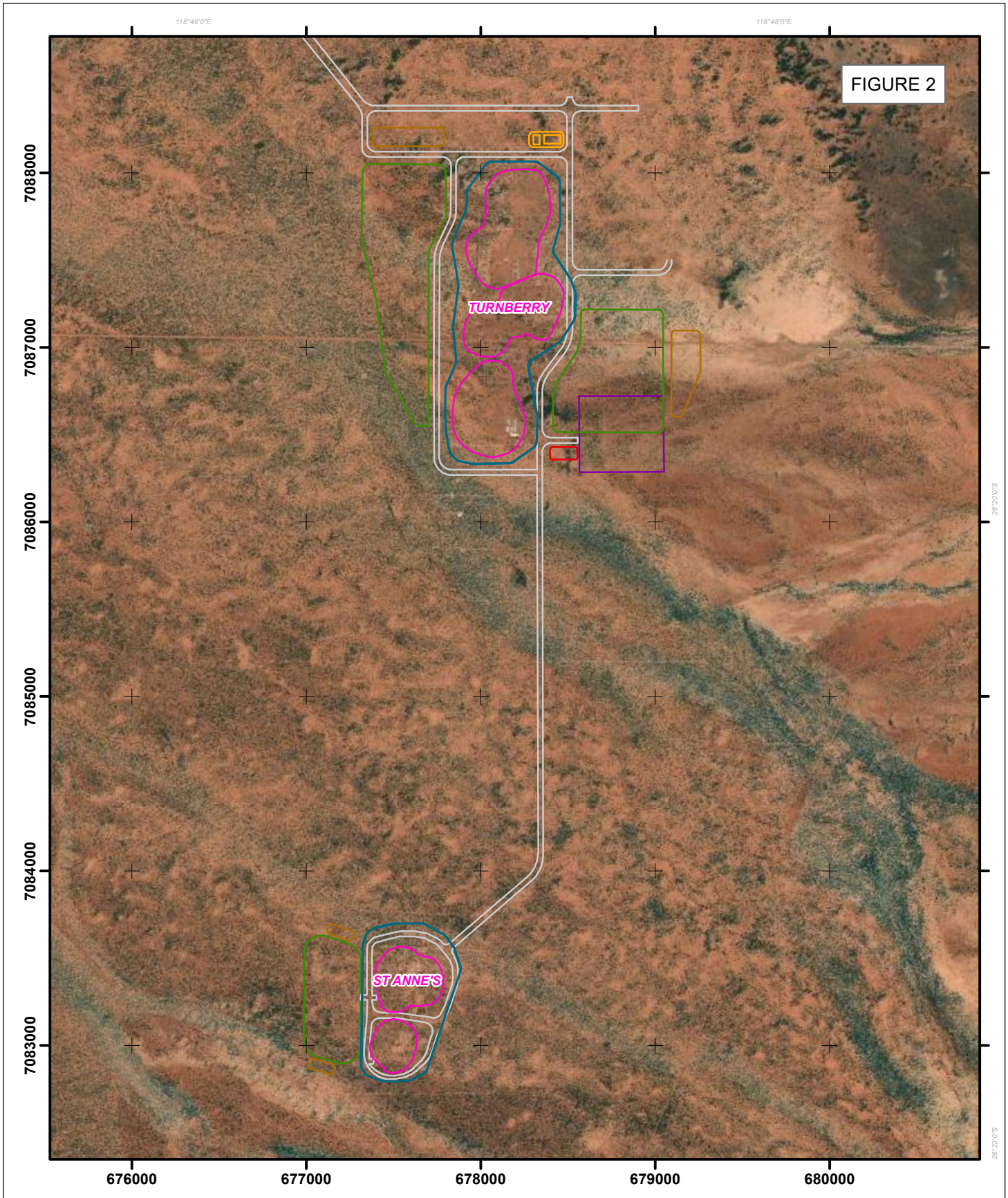
PROJECT: Turnberry Dewatering Assessment

DATE: December 2023

DWG NO: 413-1/23/01-1

TURNBERRY PROJECT LOCALITY

Rockwater



Data Source: ESRI (2023), Meeka Metals (2023) CDM Smith (2017)

L:/GIS Projects/413-1 - Meeka Turnberry/ Fig. 4 - Bore Locations.mxd

- Magazine Compound
- Office and workshops
- Open Pit Abandonment Bund
- Pit Crest Open Pit Footprint
- Roads
- Topsoil Stockpile
- Wastedumps
- Wastedumps_PAF

N

1:30,000
A4

Grid: MGA 1994
Zone 50

CLIENT: Meeka Metals Ltd

PROJECT: Turnberry Dewatering Assessment

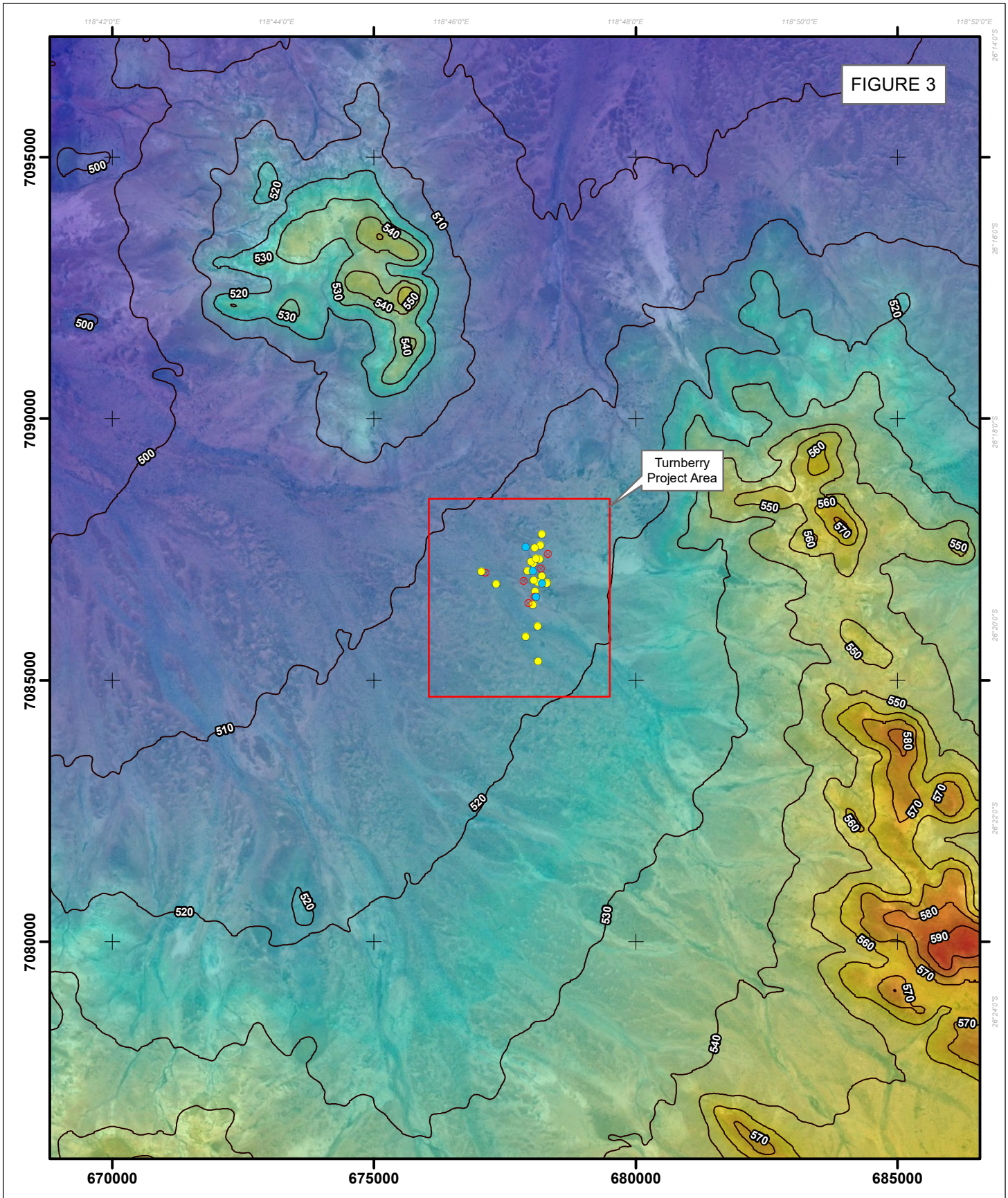
DATE: December 2023

DWG NO: 413-1/23/01-2

TURNBERRY

PROJECT LAYOUT

Rockwater



Data Source: ESRI (2023), Mekka Metals (2023) ELVIS (2023)

L:/GIS Projects/413-1 - Meeka Turnberry/ Fig. 3 - Topography.mxd

- Production Bores
- Cased Monitoring Bores
- Uncased Monitoring Bores

Hydro_Enforced_1_Second_DEM.asc
High : 596
Low : 490

N

1:100,000
A4

Grid: MGA 1994 Zone 50

CLIENT: Meeka Metals Ltd

PROJECT: Turnberry Dewatering Assessment

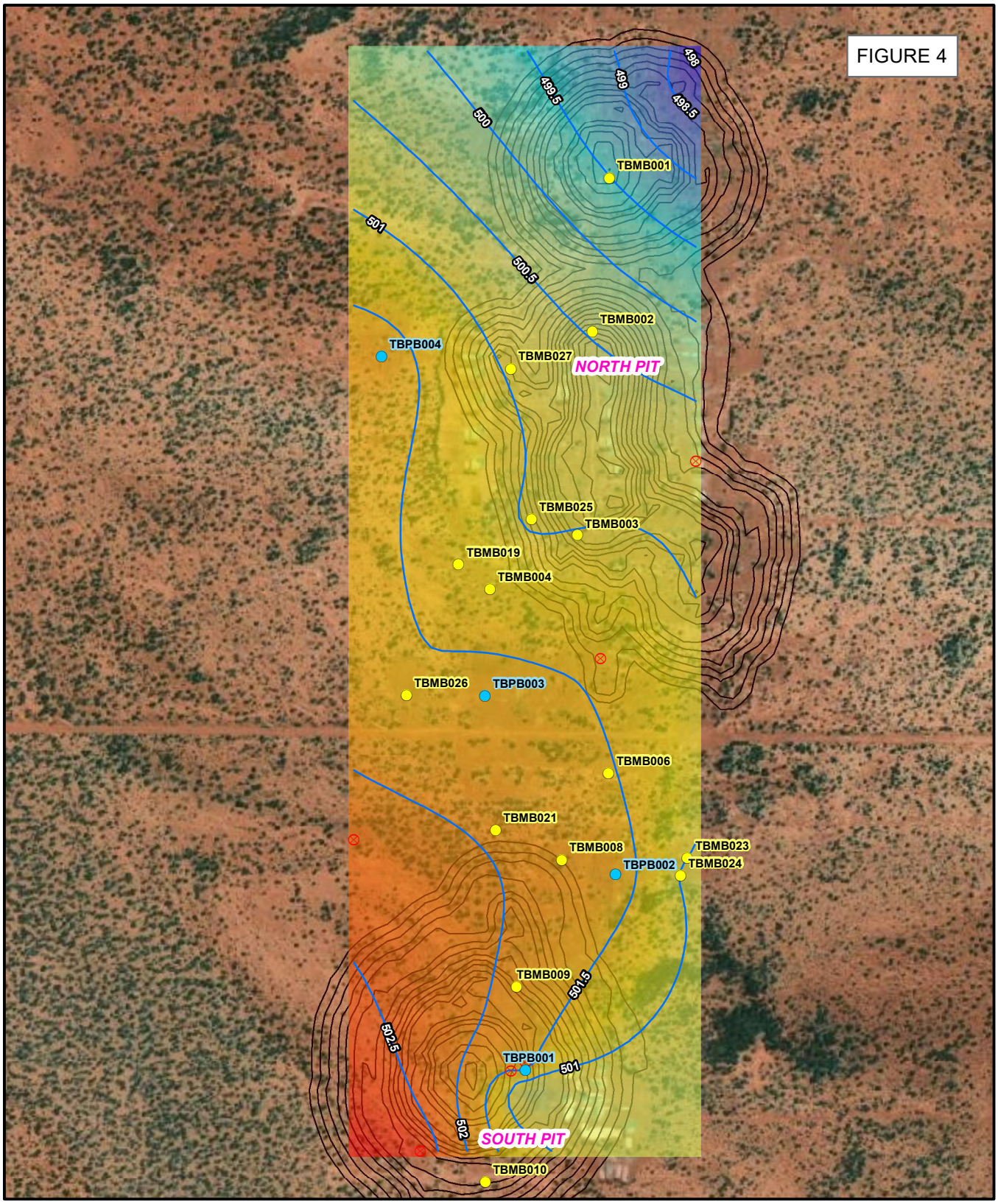
DATE: December 2023

DWG NO: 413-1/23/01-3

REGIONAL TOPOGRAPHY

Rockwater

FIGURE 4



Data Source: ESRI (2023), Meeka Metals (2023) CDM Smith (2017)

L:/GIS Projects/413-1 - Meeka Turnberry/ Fig. 4 - Bore Locations.mxd

- Production Bores
- Cased Monitoring Bores
- Uncased Monitoring Bores

Water Levels (mAHD).grd
High : 502.879
Low : 497.876

Stage 3 Deep Open Pits

N

1:7,500
A4

Grid: MGA 1994 Zone 50

CLIENT: Meeka Metals Ltd

PROJECT: Turnberry Dewatering Assessment

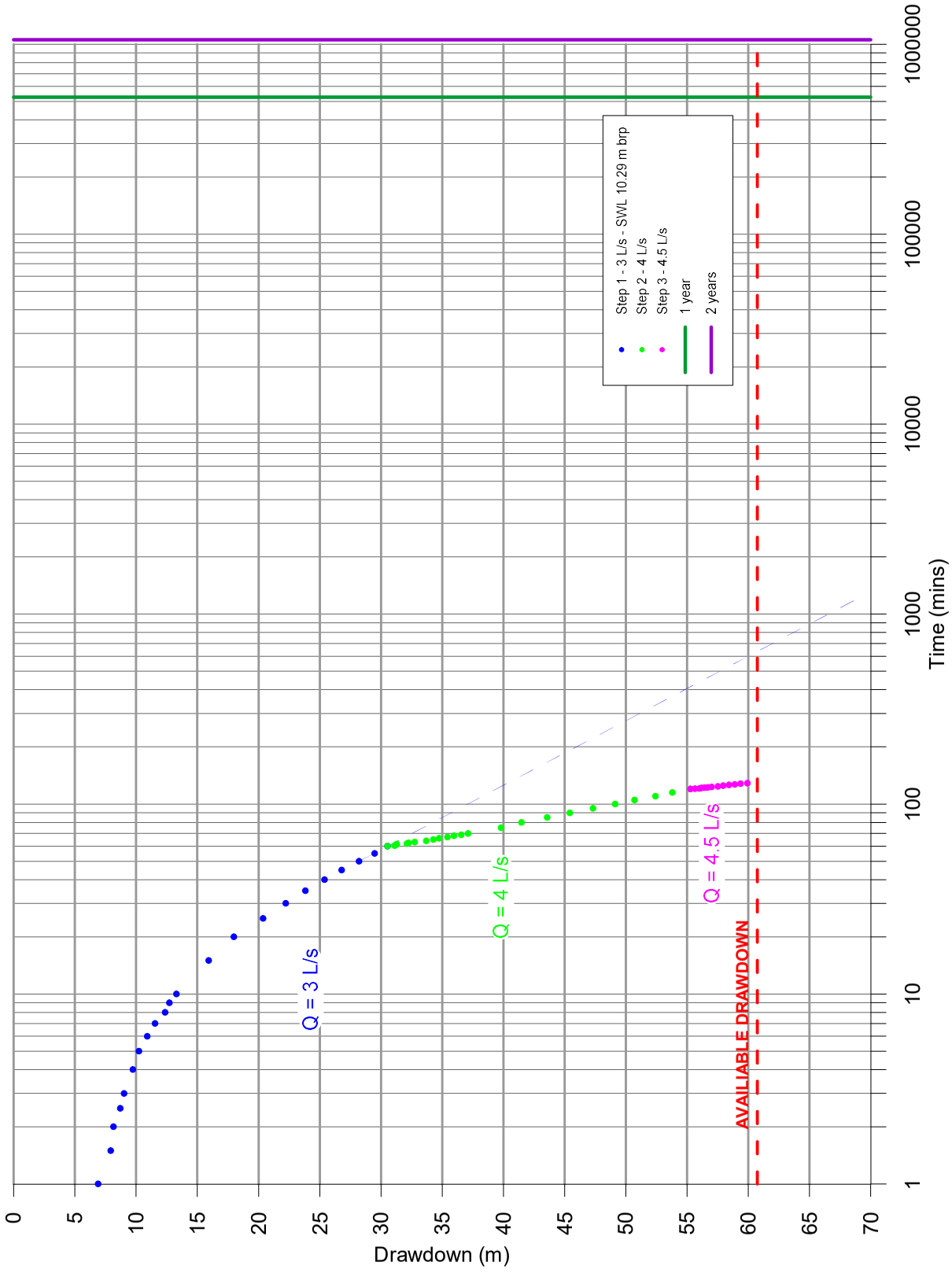
DATE: December 2023

DWG NO: 413-1/23/01-4

BORE LOCATIONS AND WATER LEVELS (mAHD)

Rockwater

Figure 5



I:413-1/Grapher/TBPB001 step test.grf

Client: Meeka Metals

Project : Dewatering Assessment

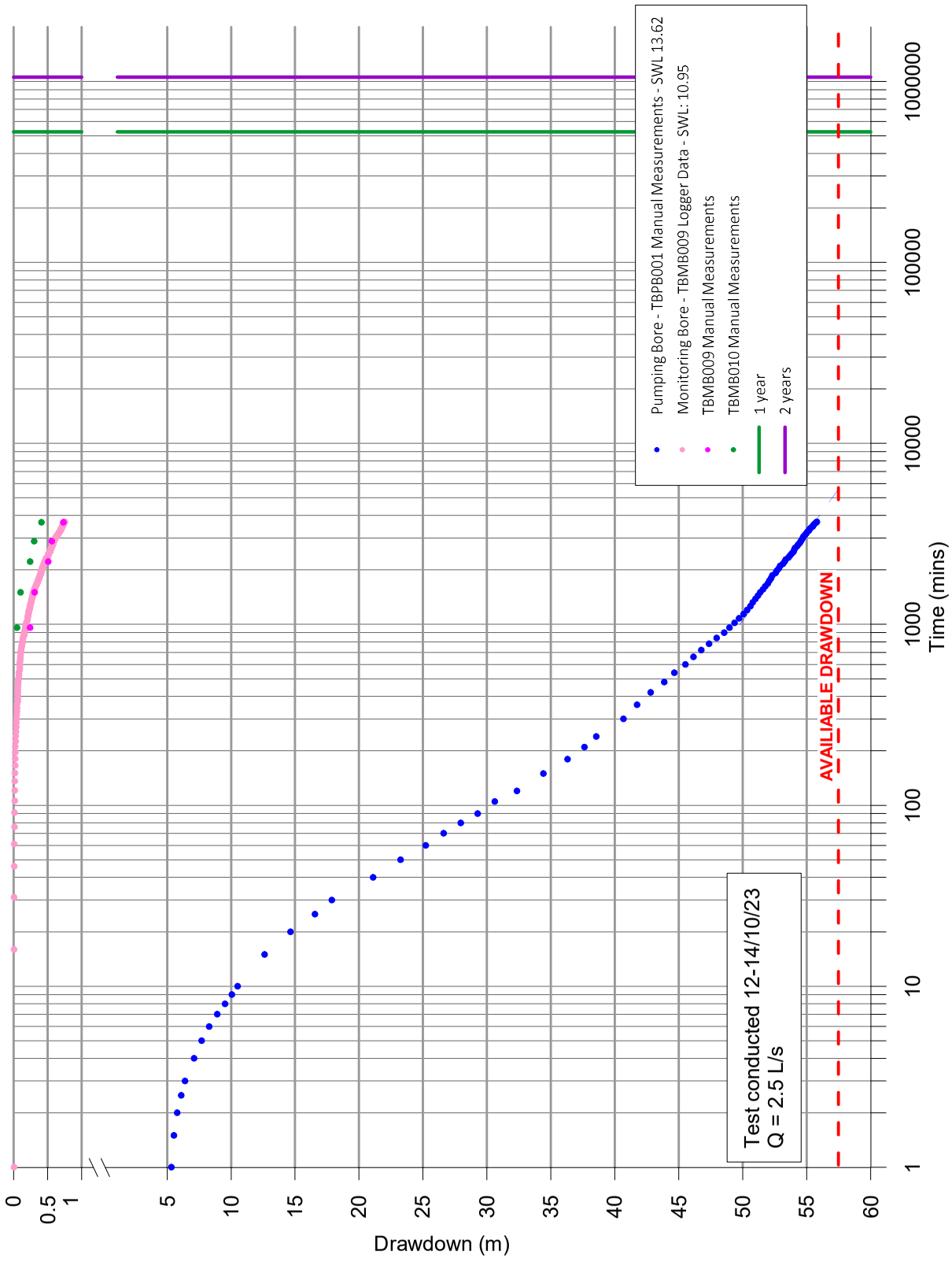
Date : December 2023

Dwg. No: 413-1/23/1-5

TBPB001
STEP RATE TEST

Rockwater PROPRIETARY LIMITED

Figure 6

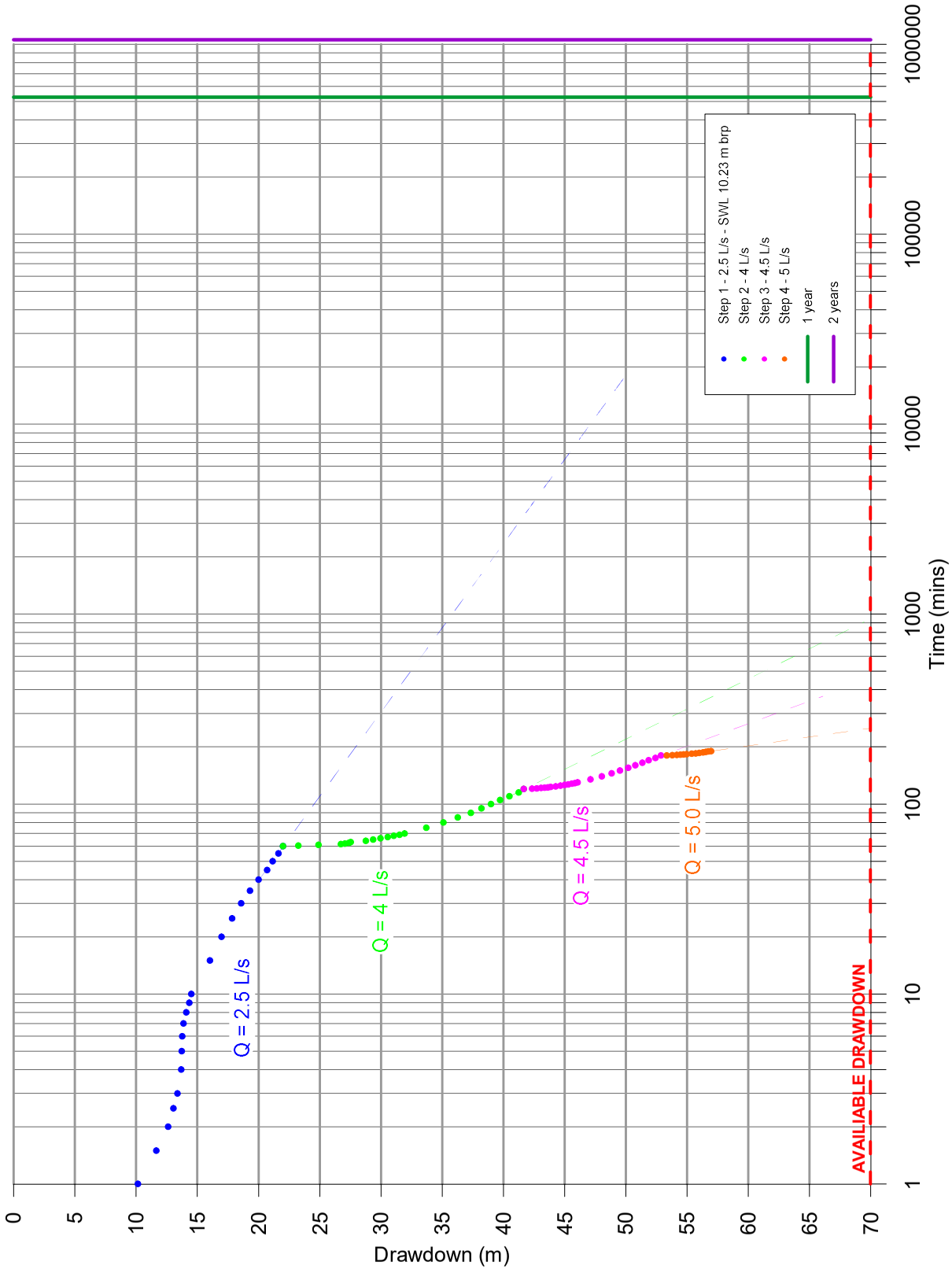


I:413-10/Test Pumping/TBPB001/TBPB001 CRT.grf

TBPB001
CONSTANT RATE TEST

Rockwater PROPRIETARY LIMITED

Figure 7



I:413-1/Grapher/TBPB03 step test.grf

Client: Meeka Metals

Project : Dewatering Assessment

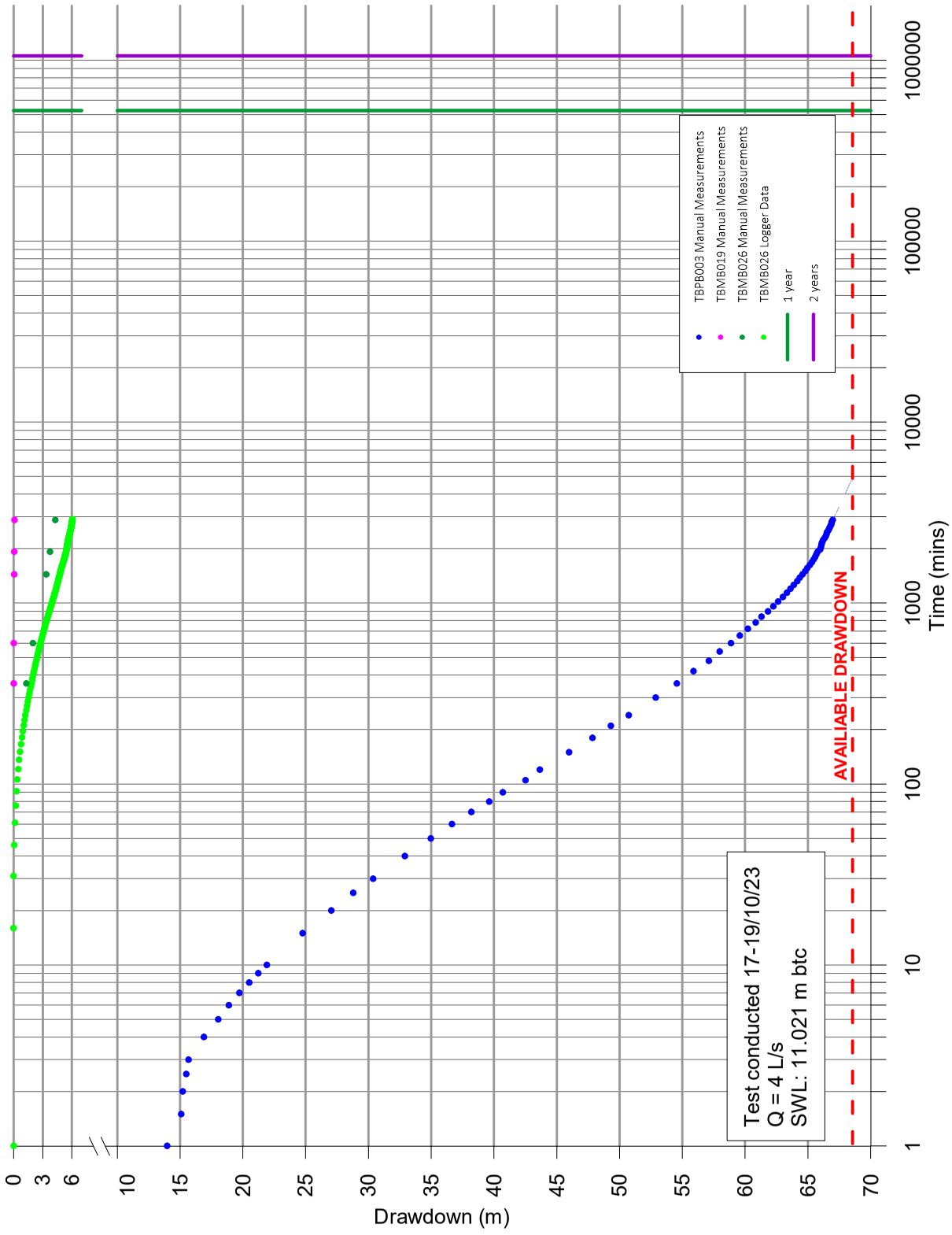
Date : December 2023

Dwg. No: 413-1/23/1-7

TBPB003
STEP RATE TEST

Rockwater PROPRIETARY LIMITED

Figure 8



I:413-1/Test Pumping/TBPB003/TBPB003 CRT.grf

Client: Meeka Metals

Project : Dewatering Assessment

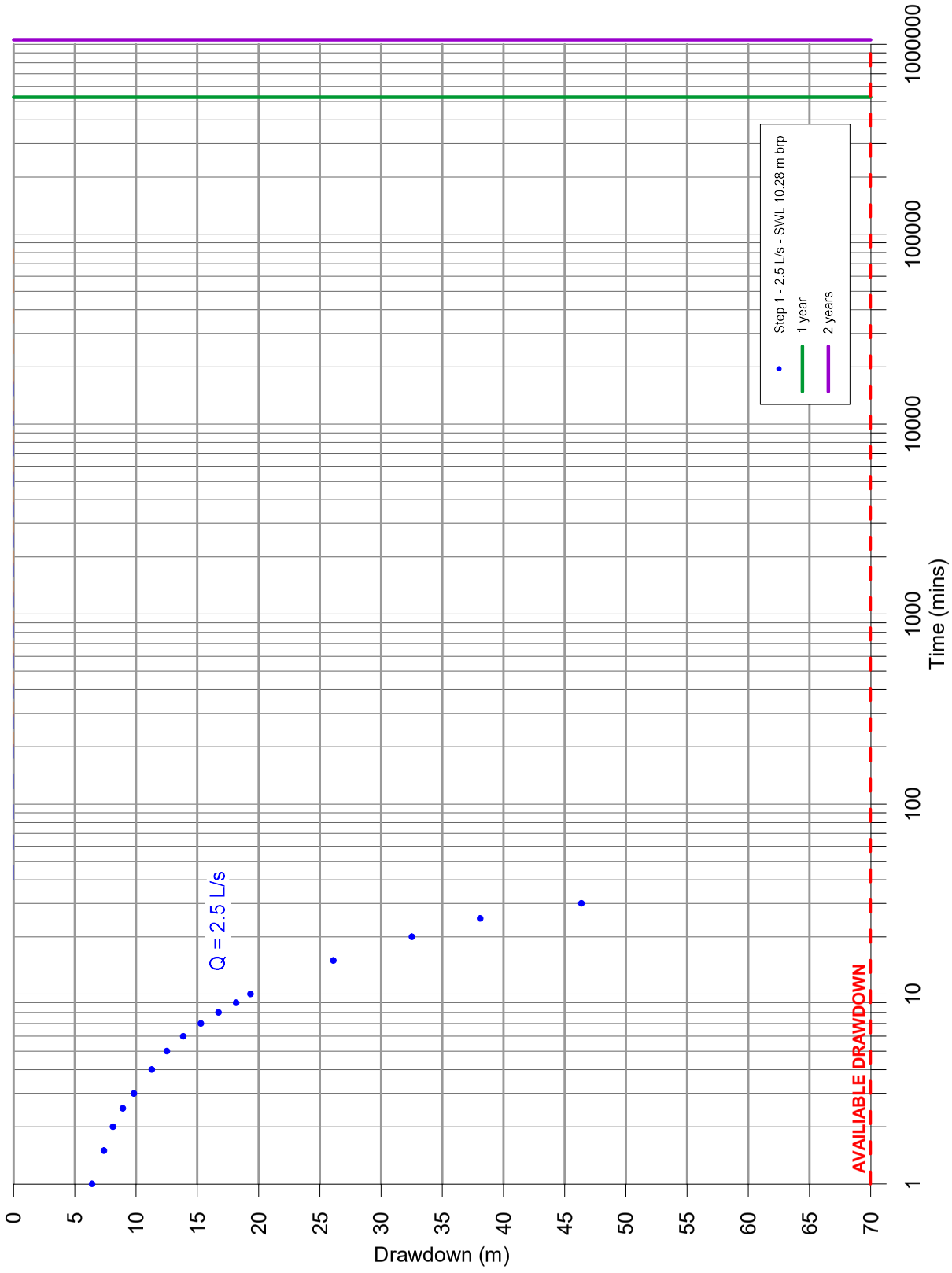
Date : December 2023

Dwg. No: 413-1/23/1-8

TBPB003
CONSTANT RATE TEST

Rockwater PROPRIETARY LIMITED

Figure 9



I:413-1/Test Pumping/TBPB04 step test.grf

Client: Meeka Metals

Project : Dewatering Assessment

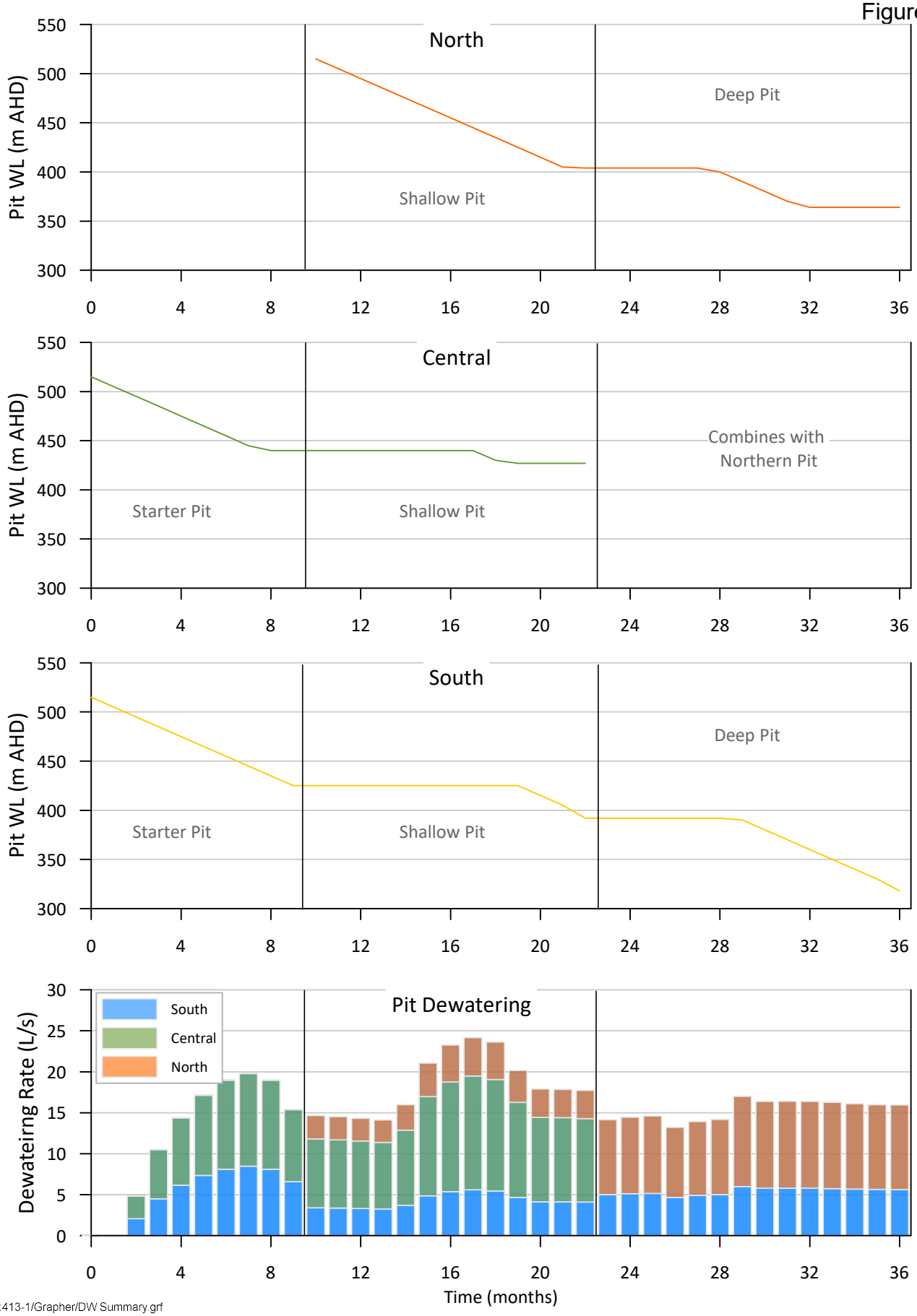
Date : December 2023

Dwg. No: 413-10/23/1-9

TBPB004
STEP RATE TEST

Rockwater PROPRIETARY LIMITED

Figure 10



I:413-1/Grapher/DW Summary.grf

Client: Meeka Metals Ltd

Project : Dewatering Assessment

Date : December 2023

Dwg. No: 413-0/23/1-10

TURNBERRY PIT DEWATERING MODELLING SUMMARY

APPENDIX I

Section 5C Licence to Take Water

File No: VF99

Government of Western Australia
Department of Water

Instrument No. GWL175556(4)

LICENCE TO TAKE WATER

Granted by the Minister under section 5C of the Rights in Water and Irrigation Act 1914

Licensee(s)	Doray Minerals Limited		
Description of Water Resource	East Murchison Combined - Fractured Rock West - Fractured Rock	**Annual Water Entitlement**	2000000 kL
Location of Water Source	M51/870, E51/926, E51/927		

Authorised Activities	**Taking of water for**	**Location of Activity**
	Dewatering for mining purposes Dust Suppression for mining purposes Mineral exploration activities Mineral ore processing and other mining purposes Mining camp purposes	M51/870, E51/926, E51/927

Duration of Licence	From 27 October 2016 to 24 October 2026

This Licence is subject to the following terms, conditions and restrictions:

1 The annual water year for water taken under this licence is defined as 1 January to 31 December.

2 The licensee shall comply with the commitments of the operating strategy 'Groundwater Licence Operating Strategy, February 2016, Andy Well Gold Project', as prepared by Doray Minerals Limited and approved by the Department of Water on 4 March 2016 including any modifications to the commitments as approved during the term of the licence.

3 Every 12 month(s) the licensee shall provide to the Department of Water a Groundwater Monitoring Summary for the preceding water year. The first report is due 31/03/2017.

4 Every 3 year(s) the licensee shall provide to the Department of Water a Groundwater Monitoring Review. The first report is due 31/03/2018. A Groundwater Monitoring Summary need not be submitted in a year in which a Groundwater Monitoring Review is due.

5 The volume of all water taken under this licence must be metered using an approved meter fitted to each drawpoint.

6 The licensee must ensure the installed meter(s) accuracy is maintained to within plus or minus 5% of the volume metered, in field conditions.

7 The licensee must take and record the reading from each meter required under this licence, at the end of each month.

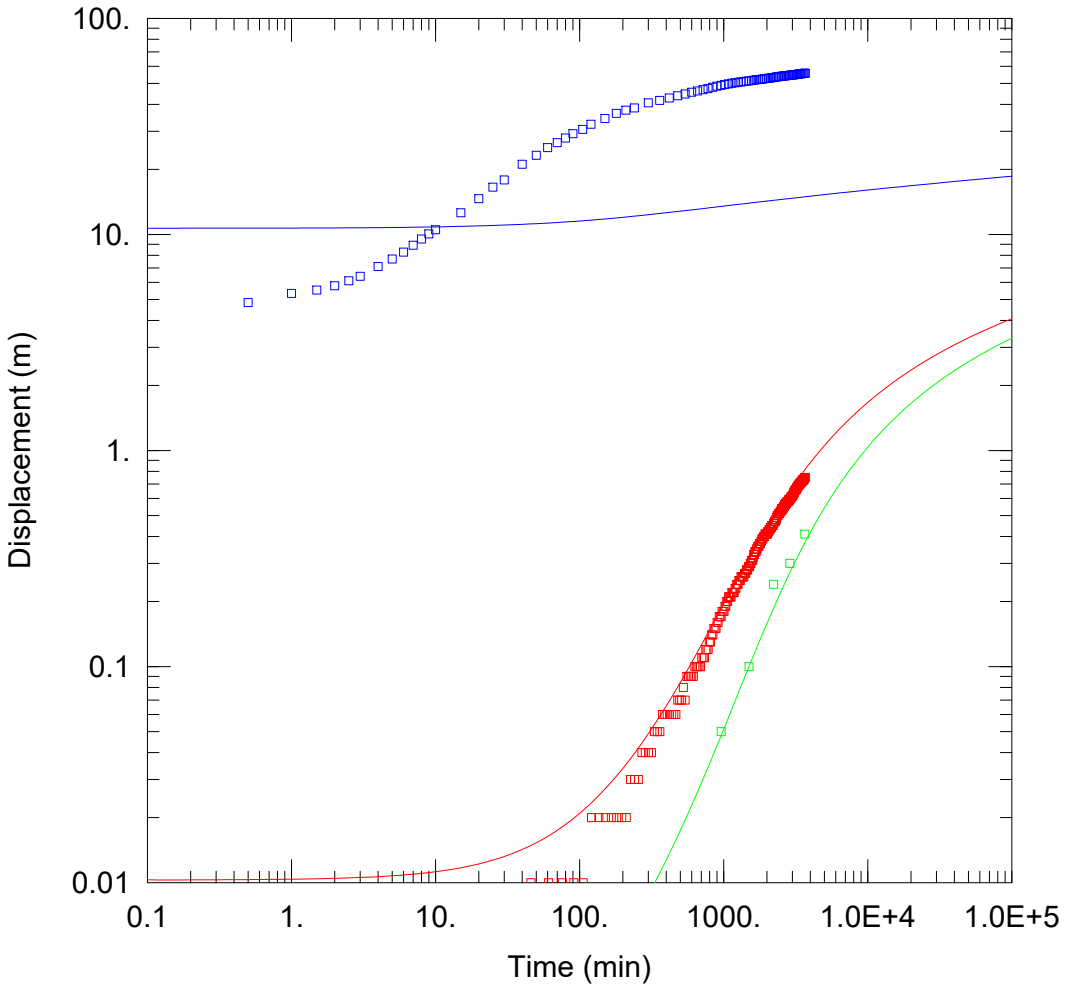
8 The licensee must notify the Department of Water in writing of any water meter malfunction within seven days of the malfunction being noticed.

End of terms, conditions and restrictions

This Licence is granted subject to the Rights in Water and Irrigation Regulations 2000

APPENDIX II

Test Pumping Analyses



TBPB001 CONSTANT RATE PUMPING TEST (2.5 L/S)

PROJECT INFORMATION

Company: Rockwater
Client: Meeka Metals
Project: 413-0
Location: Turnberry
Test Well: TBPB001
Test Date: Oct-23

AQUIFER DATA

Saturated Thickness: 88. m

WELL DATA

Pumping Wells

Well Name	X (m)	Y (m)
TBPB001	678094	7086585

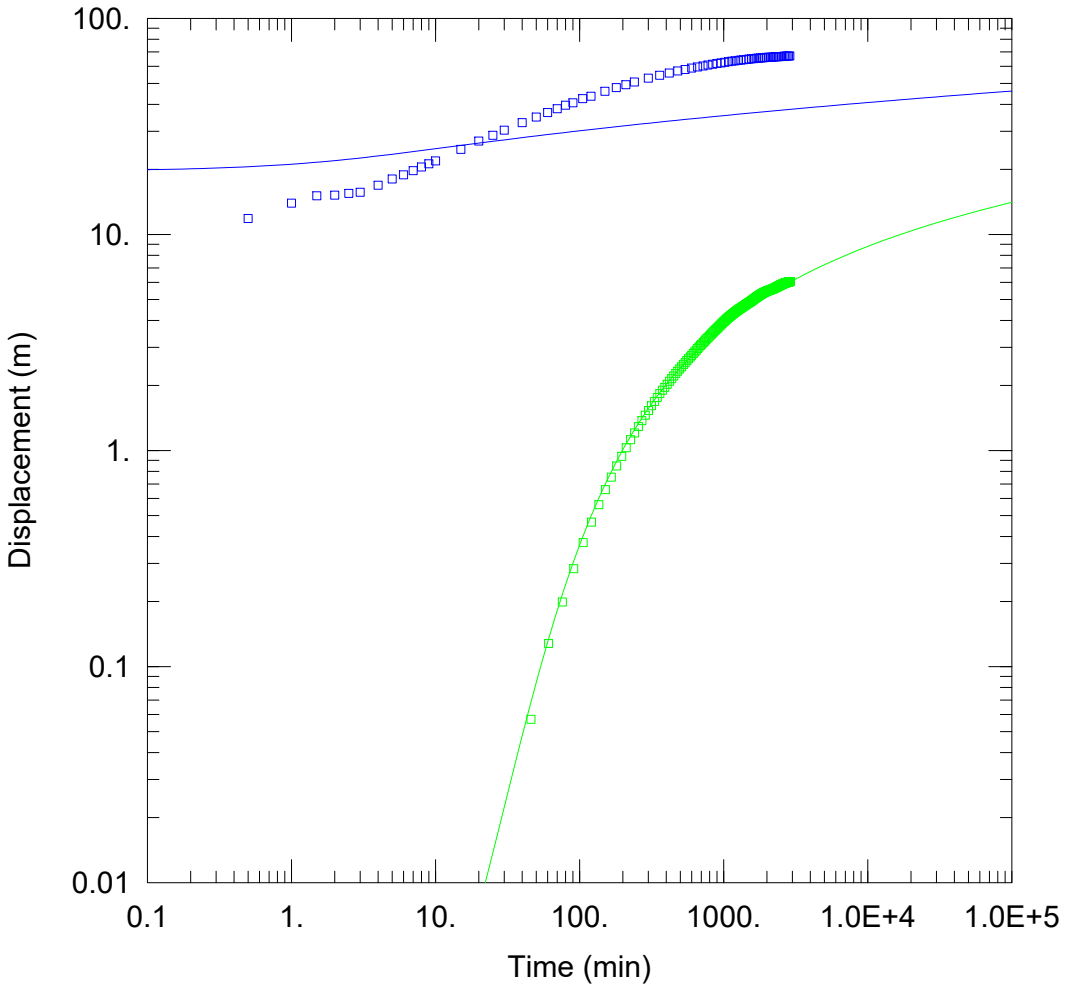
Observation Wells

Well Name	X (m)	Y (m)
TBPB001	678094	7086585
TBMB009	678082	7086697
TBMB010	678040	7086434

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 15.58 m^2/day
S = 1.015E-7
Sy = 0.004858
Kz/Kr = 5.228



TBPB001 CONSTANT RATE PUMPING TEST (2.5 L/S)

PROJECT INFORMATION

Company: Rockwater
Client: Meeka Metals
Project: 413-0
Location: Turnberry
Test Well: TBPB001
Test Date: Oct-23

AQUIFER DATA

Saturated Thickness: 74. m

WELL DATA

Pumping Wells

Well Name	X (m)	Y (m)
TBPB003	678039	7087089

Observation Wells

Well Name	X (m)	Y (m)
TBPB003	678039	7087089
TBMB026	677934	7087090

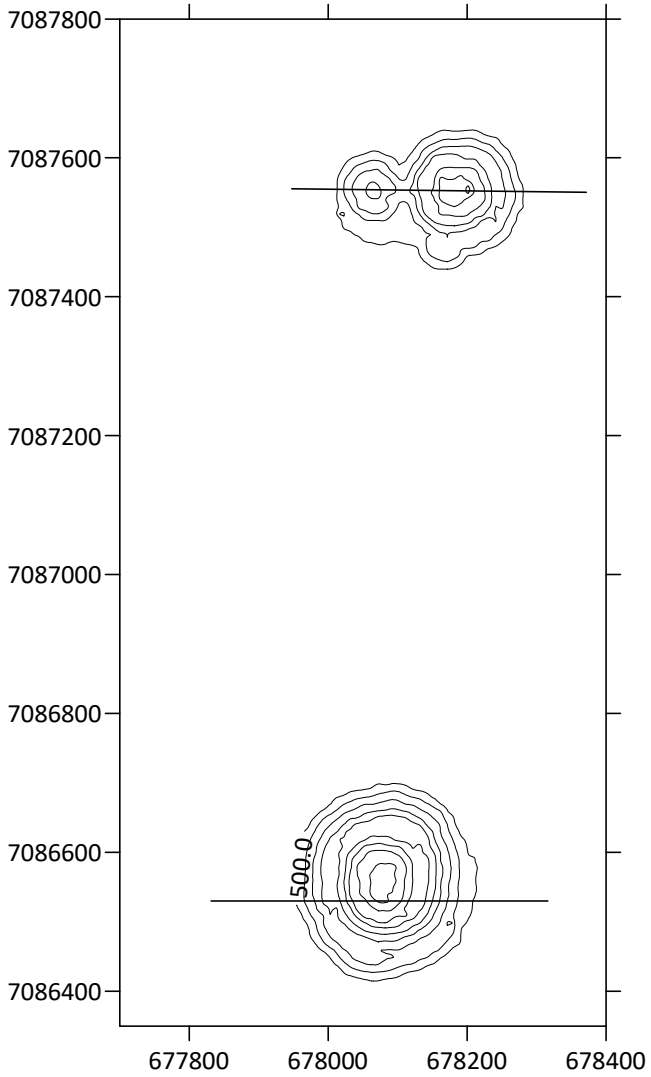
SOLUTION

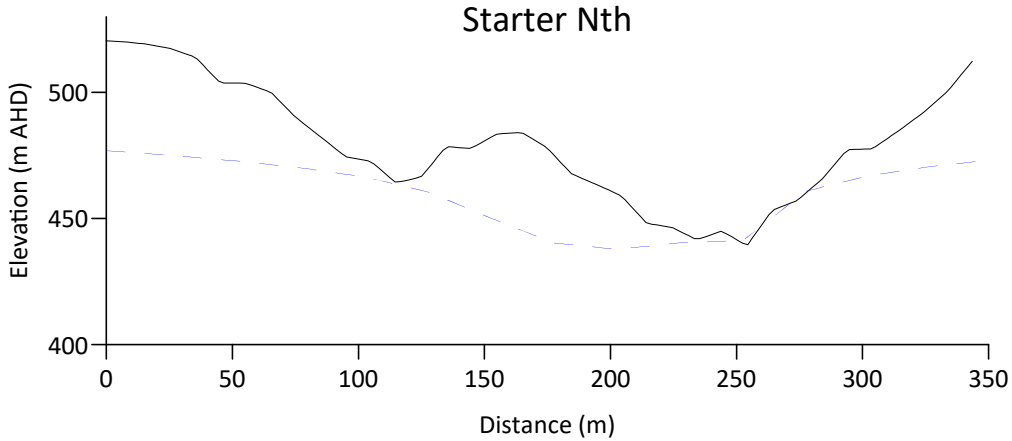
Aquifer Model: Unconfined
Solution Method: Neuman

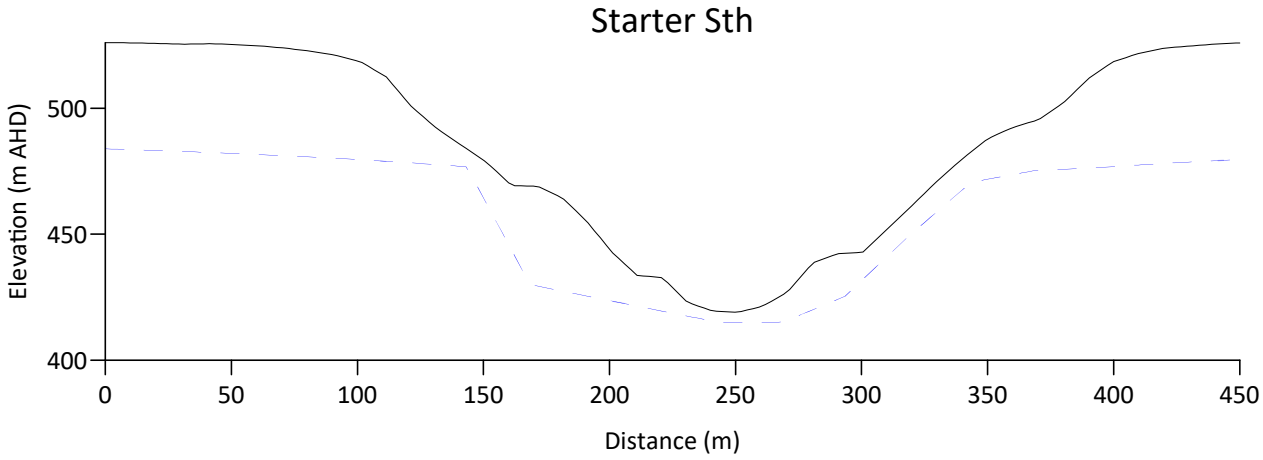
T = 11.93 m^2/day
S = 6.409E-7
Sy = 0.0003744
Kz/Kr = 27.09

APPENDIX III

Dewatering Profiles



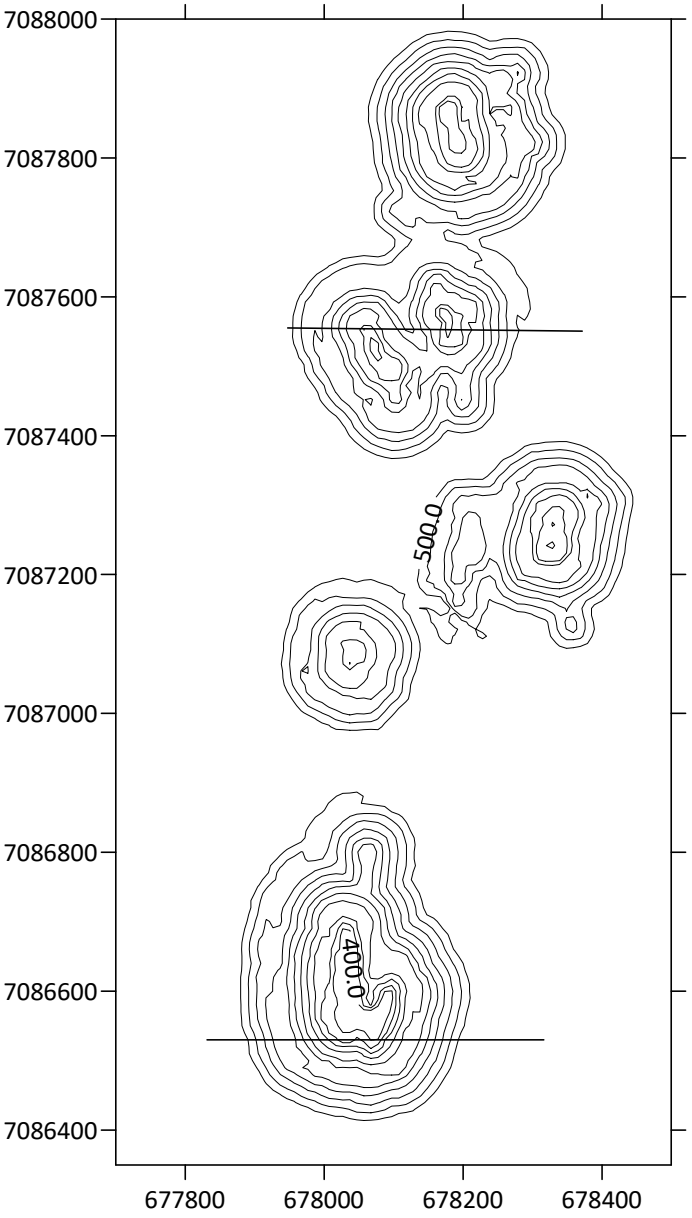


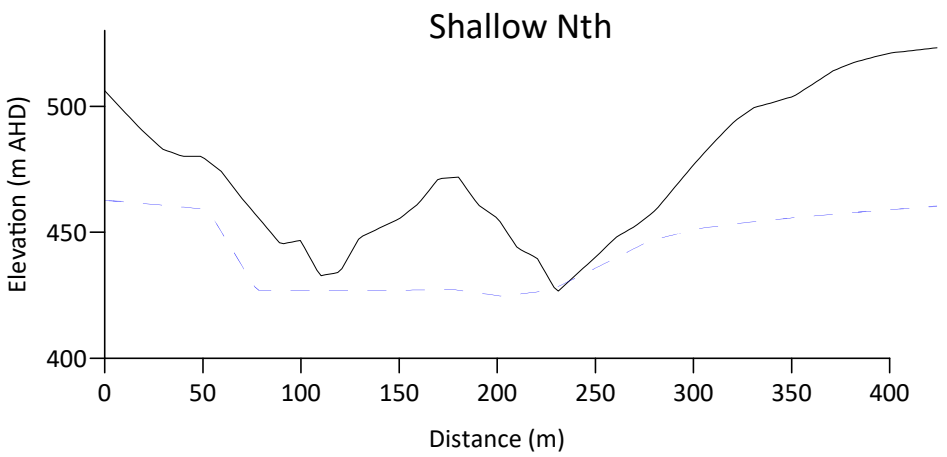


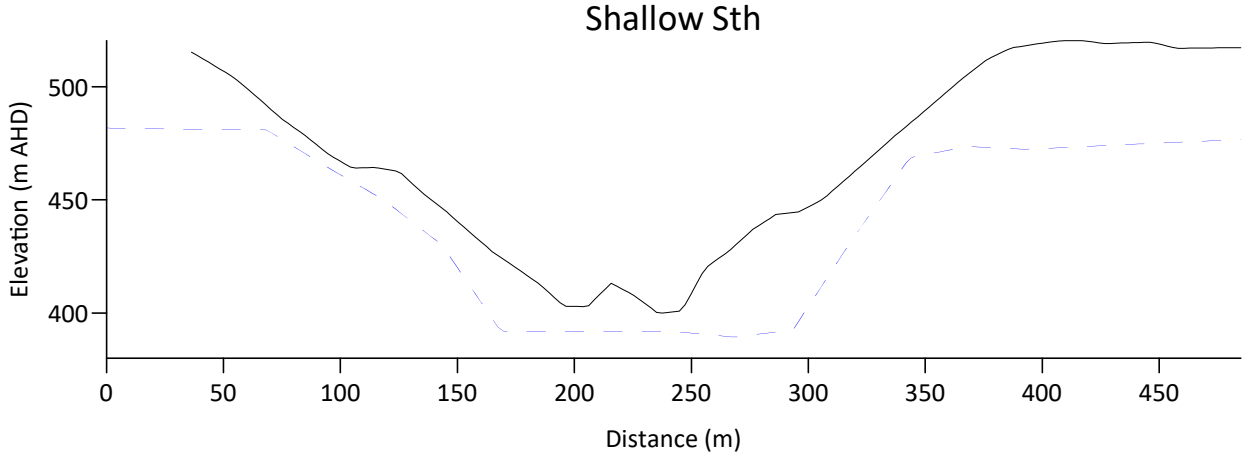
413-1/Surfer/Starter Pit profiles.srf

Client:	Meeka Metals Ltd
Project:	Dewatering Assessment
Date:	December 2023
Dwg No:	413-1/23/1-App IIIa

TURNBERRY PIT DEWATERING PROFILES
END OF STARTER PHASE



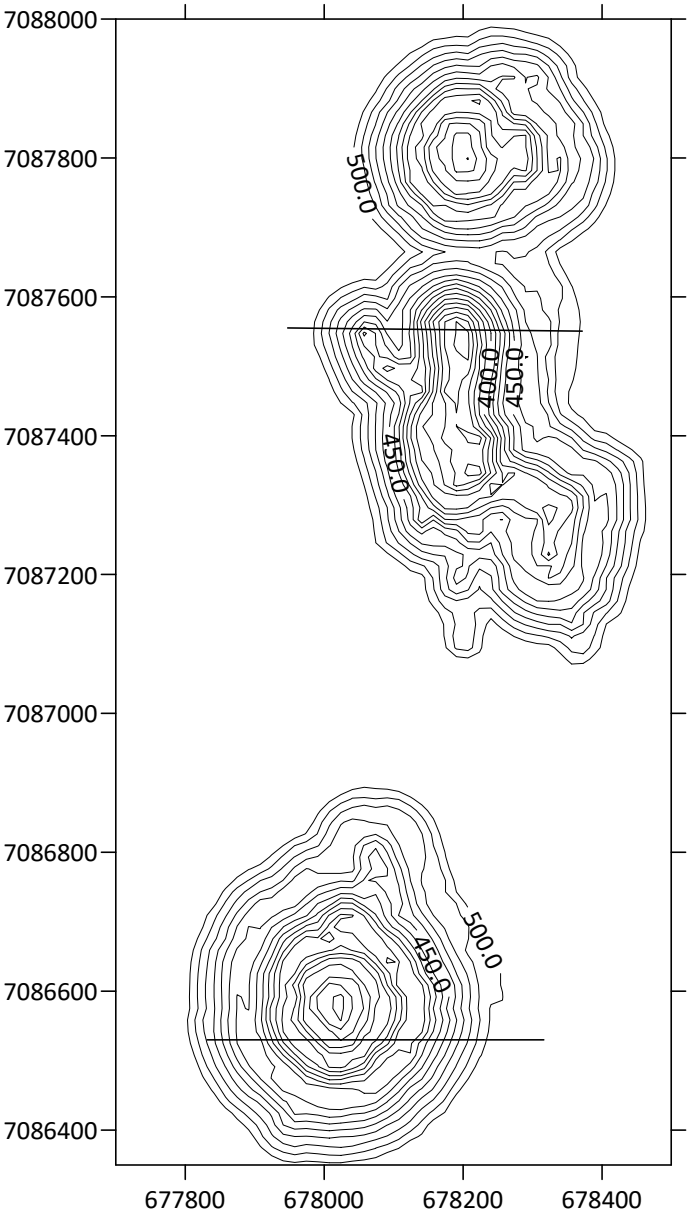


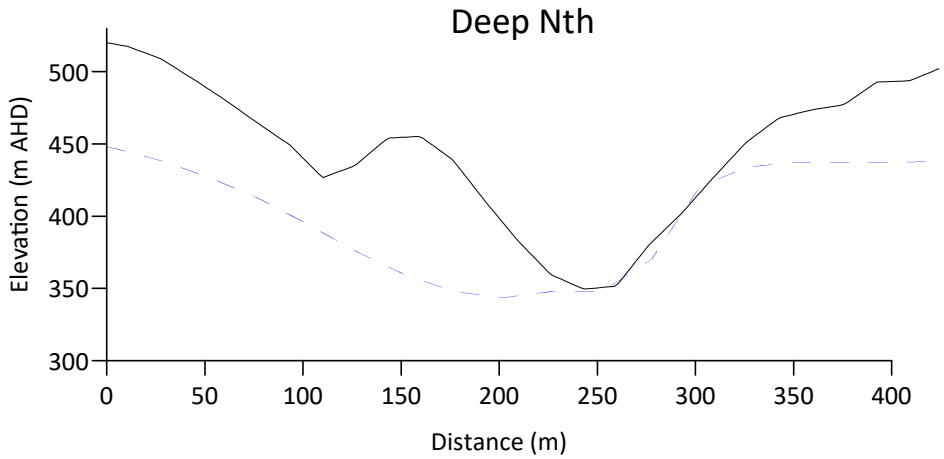


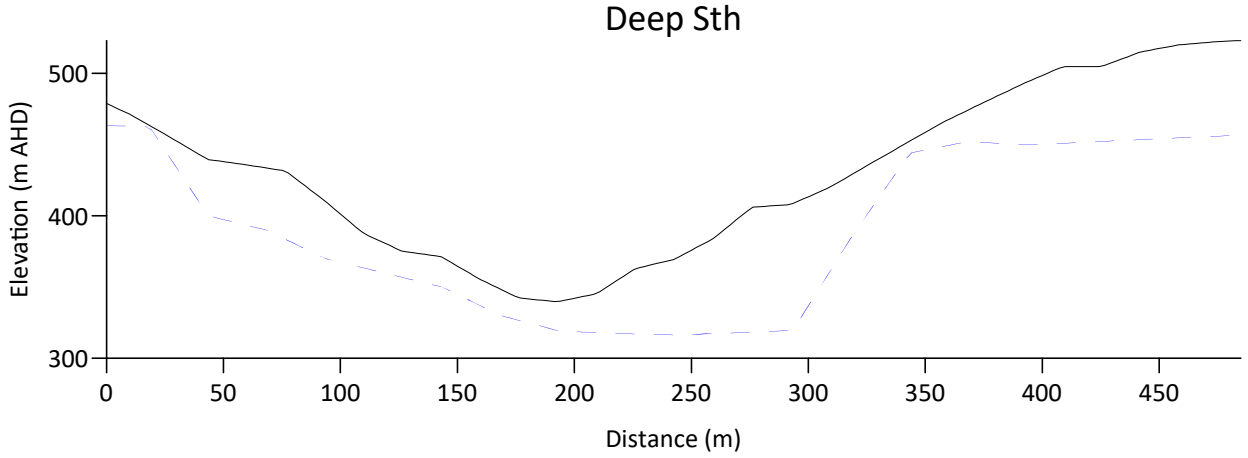
413-1/Surfer/Shallow Pit profiles.srf

Client:	Meeka Metals Ltd
Project:	Dewatering Assessment
Date:	December 2023
Dwg No:	413-1/23/1-App IIIb

TURNBERRY PIT DEWATERING PROFILES
END OF SHALLOW PHASE







413-1/Surfer/Deep Pit profiles.srf

Client:	Meeka Metals Ltd
Project:	Dewatering Assessment
Date:	December 2023
Dwg No:	413-1/23/1-App IIIc

TURNBERRY PIT DEWATERING PROFILES
END OF DEEP PHASE