Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6693/2022/1
Works approval holder	Gascoyne Resources Limited
ACN	139 522 900
Registered business address	Level 1, 41/47 Colin Street WEST PERTH 6872 WA
DWER file number	DER2022/000185
Duration	31/08/2022 to 30/08/2027
Date of issue	31/08/2022
Premises details	Dalgaranga Gold Project M59/749 DAGGAR HILLS 6638 WA As defined by the premises maps attached to the issued works approval

Prescribed premises category description (Schedule 1, ***Environmental Protection Regulations 1987***)	**Assessed production / design capacity**
Category 5: Processing or beneficiation of metallic or non-metallic ore	3.0 million tonnes per annum (Mtpa)

This works approval is granted to the works approval holder, subject to the attached conditions, on 31 August 2022, by:

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

Works approval history

Date	Reference number	Summary of changes
31/08/2022	W6693/2022/1	Works approval granted.

Interpretation

In this works approval:

(a) the words 'including', 'includes' and 'include' in conditions mean "including but not limited to", and similar, as appropriate;

(b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;

(c) where tables are used in a condition, each row in a table constitutes a separate condition;

(d) any reference to an Australian or other standard, guideline, or code of practice in this works approval:

(i) if dated, refers to that particular version; and

(ii) if not dated, refers to the latest version and therefore may be subject to change over time;

(e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and

(f) unless specified otherwise, all definitions are in accordance with the EP Act.

NOTE: This works approval requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this works approval.

Works approval conditions

The works approval holder must ensure that the following conditions are complied with:

Construction phase

Critical containment infrastructure and equipment

1. The works approval holder must:

(a) construct and/or install all the critical containment infrastructure and/or equipment;

(b) in accordance with the corresponding design and construction / installation requirements; and

(c) at the corresponding infrastructure location,

(d) as set out in Table 1.

Table 1: Critical containment infrastructure design and construction / installation requirements

	Infrastructure	Design and construction / installation requirements	Infrastructure location
1.	Golden Wings Tailings Storage Facility (TSF) embankment raise	• construct the following embankments: – Stage 1 embankment to crest Reduced Level (RL) 436.0 metres (m); – Stage 2 embankment to crest RL 439.0 m; – Stage 3 embankment to crest RL 442.0 m; – Stage 4 embankment to crest RL 445.0 m; – Stage 5 embankment to crest RL 448.0 m; – Stage 6 embankment to crest RL 451.0 m; – Stage 7 embankment to crest RL 454.0 m; – Stage 8 embankment to crest RL 457.0 m; and – Stage 9 (final) embankment to crest RL 459.0 m • for all stages (Stages 1 to 9) of the TSF, a geotextile layer (approximately 1.5 m wide) will be placed under each tailings discharge spigot location to prevent erosion of the wall • downstream constructed wall will comprise of three zones: – Zone A will be constructed as an 8 m thick, compacted, clayey mine waste, low permeable barrier – Zone B will be constructed from general mine waste, where Zone B1 will act as a filter function between Zone A and B • constructed to provided total freeboard of a minimum of 0.5 m (minimum operational freeboard of 0.3 m and beach freeboard of 0.2 m) • designed to contain a 1 in 100-year annual exceedance probability (AEP) 72-hour rain event, while maintaining a total freeboard of a minimum of 0.5 m	Schedule 1: Figures 2, 3, 4, 5, 6, and 7

	Infrastructure	Design and construction / installation requirements	Infrastructure location
		• construction, layout, and general arrangement as specified in Figures 2, 3, 4, 5, 6, and 7 of Schedule 1	
2.	Base preparation	• seal, cap, and decommission the existing monitoring / production bores within the Golden Wings in-pit in accordance with the Department's guideline document, *Groundwater monitoring bores in development areas, 2018*, Perth, Western Australia. • constructed in situ clayey soil layer of 300-millimetre (mm) thickness will be ripped, moisture conditioned, and proof rolled over the entire basin area to produce a permeability of 1 x 10^{-8} metre per second (m/s) or less • compacted clayey soil layer of 300 mm thickness will be formed at the south-east corner where sandy and gravelly soils are located • the base will be compact to achieve a minimum 95% Standard Maximum Dry Density (AS 1289.5.1.1) • construction, layout, and general arrangement as specified in Figures 2, 3, and 4 of Schedule 1	Schedule 1: Figures 2, 3, 4, 5, 6, and 7
3.	Central decant tower and accessway	• construct the central decant tower and decant pump as specified in Figure 3 of Schedule 1 • the water recovery system has a minimum capacity of 200 m^3/hr • decant accessway will be constructed with a nominal 10 m wide design crest and side slopes of 1:1.75 (vertical (V): horizontal (H)) on both sides with nominal 0.5 m high windrows on both crest edges as specified in Figure 3 of Schedule 1	Schedule 1: Figures 2, 3, 5, and 6
4.	Spigots for tailings deposit	• multiple spigots will be located on the perimeter of the embankment crest • nominal 20 m intervals between spigots	Schedule 1: Figures 3 and 6
5.	Underdrainage system	• gravity-driven underdrainage pipe system comprised of two sets of pipes: – one around the inside perimeter of the dam; and – second to the east of the existing in pit TSF • constructed as specified in Figures 2 of Schedule 1	Schedule 1: Figure 2, 3, 4, and 6
6.	Cut-off trench	• 4 m wide cut-off trench will be constructed below Zone A with a nominal depth of 1 m below ground level (bgl) • constructed as per specified in Figures 2, 3, and 4 of Schedule 1	Schedule 1: Figures 2, 3, 4, and 6
7.	Toe drain and collection sump	• an external toe drain will be constructed for the south-west corner of the TSF • sump structure comprises standard slotted precast concrete well liners stacked vertically and surrounded by clean filter coarse aggregate / rockfill • constructed as per specified in Figures 2, 3, and 4 of Schedule 1	Schedule 1: Figures 2, 3, and 4

	Infrastructure	Design and construction / installation requirements	Infrastructure location
8.	Water reclamation	• construction of a temporary floating pontoon pump as per manufacturer's specifications	N/A
9.	Tailings discharge and return pipelines	• realignment of existing pipelines as presented Figure 1 of Schedule 1 • pipelines shall be fitted with flow meters and telemetry to record the volume of tailings discharged to the TSF and water recovered from the TSF • pipelines shall be fitted with pressure transmitters at each end with alarms • tailings pipelines shall be located within open bunded trenches with sufficient capacity to ensure liquors are captured within the trench for a period equal to the time between routine inspections (minimum once per 12-hour shift).	Schedule 1: Figure 1
10.	Vibrating wire piezometers (VWPs)	• eight VWPs to be installed within the TSF embankment • VWPs to be fitted with data loggers	Schedule 1: Figure 8

Construction of groundwater monitoring bores

2. The works approval holder must design, construct, and install groundwater monitoring bores in accordance with the requirements specified in Table 2.

Table 2: Groundwater monitoring bore construction requirements

Infrastructure	Design, construction, and installation	Monitoring bore location(s)	Timeframe
Groundwater monitoring bore(s): MB-IWL-01 MB-IWL-02 MB-IWL-03 MB-IWL-04 MB-IWL-05 MB-IWL-06 MB-IWL-07 MB-IWL-08 MB-IWL-09 MB-IWL-10	Bore design and construction: Designed and constructed in accordance with ASTM D5092/D5092M-16: Standard practice for design and installation of groundwater monitoring bores. Bore screens must target the part, or parts, of the aquifer most likely to be affected by contamination1. Where temporary/seasonal perched features are present, bores must be nested, and the perched features individually screened. Bore locations must be based on geophysical method and / or the use of geological information from previous geotechnical investigations and determined by a suitably qualified hydrogeologist.	Schedule 1: Figure 8	Must be constructed, developed (purged), and determined to be operational by no later than 60 calendar days prior to the commencement of time limited operations under condition 15
	Logging of borehole: Soil samples must be collected and logged during the installation of the monitoring bores. A record of the geology encountered during drilling must be described and classified in accordance with AS 1726:2017. Any observations of staining / odours or other indications of contamination must be included in the bore log.		

Infrastructure	Design, construction, and installation	Monitoring bore location(s)	Timeframe
	Bore construction log: Bore construction details must be documented within a bore construction log to demonstrate compliance with *ASTM D5092/D5092M-16: Standard practice for design and installation of groundwater monitoring bores.* The construction logs shall include elevations of the top of casing position to be used as the reference point for water-level measurements, and the elevations of the ground surface protective installations.		
	Bore development: All installed monitoring bores must be developed after drilling to remove fine sand, silt, clay, and any drilling mud residues from around the bore screen to ensure the hydraulic functioning of the bore. A detailed record should be kept of bore development activities and included in the bore construction log.		
	Installation survey: The vertical (top of casing) and horizontal position of each monitoring bore must be surveyed and subsequently mapped by a suitably qualified surveyor.		
	Bore network map: A bore location map (using aerial image overlay) must be prepared and include the location of all monitoring bores in the monitoring network and their respective identification numbers.		

Note[1]: refer to Section 8 of Schedule B2 of the Assessment of the Site Contamination NEPM for guidance on well screen depth and length

Compliance reporting (critical containment infrastructure)

3. The works approval holder must within 30 calendar days of the Critical Containment Infrastructure identified by condition 1 being constructed and/or installed:

(a) undertake an audit of their compliance with the requirements of condition 1; and

(b) prepare and submit to the CEO a Critical Containment Infrastructure Report on that compliance.

4. The Critical Containment Infrastructure Report required by condition 3 must include as a minimum the following:

(a) certification by a suitably qualified geotechnical engineer that each item of critical containment infrastructure or component(s) thereof, as specified in condition 1, has been built and installed in accordance with the requirements specified in condition 1;

(b) provide quality control results for the foundation base works in accordance with the requirements specified in condition 1;

(c) as constructed plans and a detailed site plan showing the location and dimensions for each item of critical containment infrastructure or component thereof, as specified in condition 1;

(d) photographic evidence of the installation of the infrastructure;

(e) be signed by a person authorised to represent the works approval holder and contains the printed name and position of that person; and

(f) groundwater monitoring data indicating the baseline ambient environmental conditions at the premises prior to and immediately following construction of the item(s) of infrastructure, as per condition 2, Table 2.

Compliance reporting (groundwater monitoring bores)

5. The works approval holder must, within 30 calendar days of the monitoring bores being constructed, submit to the CEO a bore construction report evidencing compliance with the requirements as per condition 2, Table 2.

Environmental commissioning phase

Environmental commissioning requirements and emission limits

6. The works approval holder may only commence environmental commissioning of an item of infrastructure listed in condition 7 once the Critical Containment Infrastructure Report has been submitted for that item of infrastructure in accordance with condition 3 of this works approval.

7. Any environmental commissioning activities undertaken for an item of infrastructure specified in Table 3 may only be carried out:

(a) in accordance with the corresponding commissioning requirements; and

(b) for the corresponding authorised commissioning duration.

Table 3: Environmental commissioning requirements

	Infrastructure	Commissioning requirements	Authorised commissioning duration
1.	Tailings discharge and decant water return pipelines	• visual inspection of pipelines to check for leaks or any other issues • all flow meters, telemetry, and pressure transmitters to be calibrated in accordance with manufacture's specifications • monitor and adjust tailings discharge spigots (as required) into the TSF to commence tailings beach formation • inspection of underdrainage system to ensure excess water is recovered • monitor and adjust tailings beach formation (as required) to ensure water flows toward the central decant	For a period not exceeding 90 calendar days in aggregate

Monitoring during environmental commissioning

8. The works approval holder must undertake groundwater monitoring in Table 4 according to the specifications outlined in the Table.

Table 4: Monitoring of ambient groundwater concentrations

Monitoring location	Parameters	Trigger	Limit	Unit	Frequency & Averaging period	Sampling method
Schedule 1: Figure 8 Groundwater monitoring bore(s): MB-IWL-01 MB-IWL-02 MB-IWL-03 MB-IWL-04 MB-IWL-05 MB-IWL-06 MB-IWL-07 MB-IWL-08 MB-IWL-09 MB-IWL-10	Standing water level (SWL)[1]	3.5	Not less than 2.5	mbgl	At least once prior to the commencement of commissioning, then monthly for the first 2 months, then quarterly thereafter	AS/NZ 5667.1 & AS/NZS 5667.11 By a NATA accredited laboratory
	pH[1]	-	-	pH unit		
	Total dissolved solids (TDS)	-	-	mg/L		
	Weak acid dissociable cyanide (WAD CN)	-	<0.5			
	Aluminium (Al)	-	-			
	Arsenic (As)	0.10	-			
	Antimony (Sb)	-	-			
	Cadmium (Cd)	0.01	-			
	Chromium (Cr) (V1)	-	-			
	Chromium (Cr) (Total)	0.10	-			
	Cobalt (Co)	0.05	-			
	Copper (Cu)	0.20	-			
	Iron (Fe)	-	-			
	Mercury (Hg)	0.002	-			
	Molybdenum (Mo)	0.01	-			
	Nickel (Ni)	0.20	-			
	Selenium (Se)	0.02	-			
	Thalium (Tl)	-	-			
	Zinc (Zn)	2	-			
	Bicarbonate (HCO_3)	-	-			
	Calcium (Ca)	-	-			
	Chloride (Cl)	-	-			
	Potassium (K)	-	-			
	Magnesium (Mg)	-	-			
	Sodium (Na)	-	-			
	Sulfate (SO4)	-	-			

Note[1]: In-field non-NATA accredited analysis permitted.

9. The works approval holder must record the results of all monitoring required by condition 8.

10. The works approval holder must, in the event of a parameter in condition 8 being equal to or less than the corresponding trigger value specified in that condition, undertake the management actions specified in Table 5 that correspond with the relevant parameter and corresponding monitoring location within the corresponding timeframe.

Table 5: Management actions

Monitoring location	Parameters	Management action	Timeframe
Schedule 1: Figure 8 Groundwater monitoring bore(s): MB-IWL-01 MB-IWL-02 MB-IWL-03 MB-IWL-04 MB-IWL-05 MB-IWL-06 MB-IWL-07 MB-IWL-08 MB-IWL-09 MB-IWL-10	SWL	• activate the relevant groundwater recovery bore(s) as depicted in Figure 8 of Schedule 1 • investigate the cause(s) as to why the groundwater level(s) at the Golden Wings TSF are increasing. • take relevant action(s) to minimise the likelihood of future increases in the groundwater level(s) at the Golden Wings TSF.	Management actions to commence within 30 days after becoming aware that the parameter in condition 8 is equal to or less than the corresponding trigger value. The management actions are to continue until the parameter in condition 8 is greater than the corresponding trigger value

Environmental Commissioning Report

11. The works approval holder must submit to the CEO an Environmental Commissioning Report within 30 calendar days of the completion date of environmental commissioning for each item of infrastructure specified in Table 3.

12. The works approval holder must ensure the Environmental Commissioning Report required by condition 11 of this works approval includes the following:

(a) a summary of the environmental commissioning activities undertaken, including timeframes and amount of tailings material discharged and return water recovered;

(b) the ambient concentrations monitoring results recorded in accordance with condition 8;

(c) a summary of the environmental performance of each item of infrastructure or equipment as constructed or installed (as applicable), which at minimum includes records detailing the:

(i) hydro-testing of pipelines; and
(ii) calibration of flow meters, telemetry, and pressure transmitters.

(d) a review of the works approval holder's performance and compliance against the conditions of this works approval; and

(e) where they have not been met, measures proposed to meet the manufacturer's design specifications and the conditions of this works approval, together with timeframes for implementing the proposed measures.

Time limited operations phase

Commencement and duration

13. The works approval holder may only commence time limited operations for an item of critical containment infrastructure identified in condition 1, where the CEO has notified the works approval holder that the Critical Containment Infrastructure Report for that item of infrastructure as required by condition 3 meets the requirements of that condition.

14. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 15 (as applicable):

(a) for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 3 for that item of infrastructure; or

(b) until such time as a licence for that item of infrastructure is granted in accordance with Part V of the *Environmental Protection Act 1986,* if one is granted before the end of the period specified in condition 14(a).

Time limited operations requirements and emission limits

15. During time limited operations, the works approval holder must ensure that the premises infrastructure and equipment listed in Table 6 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 6.

Table 6: Infrastructure and equipment requirements during time limited operations

	Infrastructure	Operational requirements	Infrastructure location
1.	Golden Wings TSF	• throughput of no more than 3.0 Mtpa • to be maintained as per the design and construction / installation requirements in condition 1 • freeboard able to store a 1:100 year 72-hour rainfall event while maintaining a minimum total freeboard of 0.5 m (minimum operational freeboard of 0.3 m and beach freeboard of 0.2 m) • daily visual inspection of freeboard to confirm capacity is available • weekly visual inspection of the integrity of the embankment and perimeter containment embankment, including integrity of geotextile layer • gas guns, kites and/or similar bird deterrent devices to be used to deter birds from interacting with the TSF decant pond	Schedule 1: Figure 1
2.	Central decant tower and accessway	• to be maintained as per the design and construction / installation requirements in condition 1 • daily visual inspection of the location and size of the decant pond	Schedule 1: Figures 2
3.	Spigots for tailings deposit	• maintain and operate spigots • daily visual inspections to check for integrity or any	Schedule 1: Figures 6

	Infrastructure	Operational requirements	Infrastructure location
		malfunction	
4.	Cut-off trench, toe drain, and collection sump	• daily visual inspections for integrity	Schedule 1: Figures 2 and 3
5.	Water reclamation	• maintain and operate temporary floating pontoon pump as per manufacturer's specifications, until central decant tower is in operation	N/A
6.	Tailings discharge and return pipelines	• to be maintained as per the design and construction / installation requirements in condition 1 • daily visual inspections when in operation to check the integrity of pipelines, V drains, and bunding • weekly inspection of flow meters, telemetry, and pressure transmitters	Schedule 1: Figure 1
7.	VWPs	• weekly inspections to ensure integrity of VWPs • monthly monitoring undertaken at least monthly via data loggers	Schedule 1: Figure 8

Emissions during time limited operations

16. The works approval holder must ensure that the emissions specified in Table 7 are discharged only from the corresponding discharge point and only at the corresponding discharge point location.

Table 7: Authorised discharge points

Emission	Discharge point	Discharge point location
Tailings	Golden Wings TSF	As shown in Figure 1 of Schedule 1

Monitoring during time limited operations

17. The works approval holder must monitor groundwater during time limited operations in accordance with Table 8.

Table 8: Groundwater monitoring during time limited operations

Monitoring location	Parameters	Trigger	Limit	Unit	Frequency & Averaging period	Sampling method
Schedule 1: Figure 8 Groundwater monitoring bore(s): MB-IWL-01 MB-IWL-02	Standing water level (SWL)[1]	3.5	Not less than 2.5	mbgl	Quarterly & Spot sample	AS/NZ 5667.1 & AS/NZS 5667.11 By a NATA accredited laboratory
	pH[1]	-	-	pH unit		
	Total dissolved solids (TDS)	-	-	mg/L		
	Weak acid dissociable cyanide (WAD CN)	-	<0.5			
	Aluminium (Al)	-	-			

Monitoring location	Parameters	Trigger	Limit	Unit	Frequency & Averaging period	Sampling method
MB-IWL-03 MB-IWL-04 MB-IWL-05 MB-IWL-06 MB-IWL-07 MB-IWL-08 MB-IWL-09 MB-IWL-10	Arsenic (As)	0.10	-			
	Antimony (Sb)	-	-			
	Cadmium (Cd)	0.01	-			
	Chromium (Cr) (V1)	-	-			
	Chromium (Cr) (Total)	0.10	-			
	Cobalt (Co)	0.05	-			
	Copper (Cu)	0.20	-			
	Iron (Fe)	-	-			
	Mercury (Hg)	0.002	-			
	Molybdenum (Mo)	0.01	-			
	Nickel (Ni)	0.20	-			
	Selenium (Se)	0.02	-			
	Thalium (Tl)	-	-			
	Zinc (Zn)	2	-			
	Bicarbonate (HCO_3)	-	-			
	Calcium (Ca)	-	-			
	Chloride (Cl)	-	-			
	Potassium (K)	-	-			
	Magnesium (Mg)	-	-			
	Sodium (Na)	-	-			
	Sulfate (SO4)	-	-			

Note[1]: In-field non-NATA accredited analysis permitted.

18. The works approval holder must undertake the decant water monitoring in Table 9 according to the specifications in that table and not exceed the corresponding limit in that table.

Table 9: Decant water monitoring

Monitoring point and reference location	Parameter	Unit	Averaging period	Frequency	Method
Decant (supernatant) pond of Golden Wings TSF Schedule 1: Figure 1	Weak acid dissociable cyanide (WAD CN)	mg/L	Spot sample	Monthly	AS/NZ 5667.1 AS/NZS 5667.4
	pH[1]	pH units			

19. The works approval holder must record the results of all monitoring required by condition 17 and 18.

20. The works approval holder must, in the event of a parameter in condition 17 being equal to or less than the corresponding trigger value specified in that condition, undertake the management actions specified in Table 5 that correspond with the relevant parameter and corresponding monitoring location within the corresponding timeframe.

21. The works approval holder must undertake monitoring of the water balance for the TSF each monthly period, and (as a minimum) record the following information:

(a) site rainfall;

(b) evaporation rate;

(c) decant water recovery volumes;

(d) volume of tailings deposited;

(e) volume of water reused for the Processing Plant; and

(f) estimate of seepage losses.

Compliance reporting

22. The works approval holder must submit to the CEO a report on the time limited operations within 30 calendar days of the completion date of time limited operations or 90 calendar days before the expiration date of the works approval, whichever is the sooner.

23. The works approval holder must ensure the report required by condition 22 includes the following:

(a) a summary of the time limited operations, including timeframes and amount of the gold processed;

(b) a summary of ambient groundwater monitoring results obtained during time limited operations under condition 17 and decant water monitoring under condition 18.

(c) a summary of the environmental performance of all infrastructure as constructed or installed (as applicable), which includes records detailing the:

(i) Golden Wings TSF;
(ii) Temporary pontoon pump, central decant tower and accessway;
(iii) Spigots for tailings deposit;
(iv) Cut-off trench and toe drain;
(v) Tailings discharge and return pipelines; and
(vi) VWPs.

(d) a review of performance and compliance against the conditions of the works approval and the Environmental Commissioning Report; and

(e) where the manufacturer's design specifications and the conditions of this works approval have not been met, what measures will the works approval holder take to meet them, and what timeframes will be required to implement those measures.

Notification

24. The works approval holder must immediately after becoming aware of any breach of any limit specified in the works approval, notify the CEO in writing of that non-compliance and include in that notification the following information:

(a) which condition was not complied with and a copy of the corresponding data and previous trigger level data (if applicable);

(b) the time and date when the non-compliance occurred;

(c) if any environmental impact has occurred as a result of the non-compliance and if so what that impact is and where the impact occurred;

(d) the details and result of any investigation undertaken into the cause of the non-compliance;

(e) what action(s) has been taken and the date on which it was taken to prevent the non-compliance occurring again; and

(f) what action(s) will be taken and the date by which it will be taken to prevent the non-compliance, including monitoring undertaken to ensure compliance is met and there is and no environmental impact.

Records and reporting (general)

25. The works approval holder must record the following information in relation to complaints received by the works approval holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the premises:

(a) the name and contact details of the complainant, (if provided);

(b) the time and date of the complaint;

(c) the complete details of the complaint and any other concerns or other issues raised; and

(d) the complete details and dates of any action taken by the works approval holder to investigate or respond to any complaint.

26. The works approval holder must maintain accurate and auditable books including the following records, information, reports, and data required by this works approval:

(a) the works conducted in accordance with condition 1;

(b) any maintenance of infrastructure that is performed in the course of complying with condition 15;

(c) monitoring undertaken in accordance with conditions 8, 17, 18, and 21 ; and

(d) complaints received under condition 25.

27. The books specified under condition 26 must:

(a) be legible;

(b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;

(c) be retained by the works approval holder for the duration of the works approval; and

(d) be available to be produced to an inspector or the CEO as required.

Definitions

In this works approval, the terms in Table 10 have the meanings defined.

Table 10: Definitions

Term	Definition
ACN	means Australian Company Number
AEP	means annual exceedance probability. The probability that a given rainfall total accumulated over a given duration will be exceeded in any one year.
annual period	a 12-month period commencing from 1 November until 31 October of the immediately following year.
ANZG	means Australian and New Zealand guidelines. The Australian and New Zealand guidelines for fresh and marine water quality (ANZG 2018).
AS 1726:2017	Means Australian Standard AS 1726:2017. *Geotechnical site investigations*.
AS/NZS 3580.1.1	means Australian Standard AS/NZS 3580.1.1:2016 *Methods for sampling and analysis of ambient air Guide to siting air monitoring equipment.*
AS/NZS 3580.14	means AS/NZS 3580.14:2014 *Methods for sampling and analysis of ambient air Meteorological monitoring for ambient air quality monitoring applications.*
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 *Water quality – sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples.*
AS/NZS 5667.4	means the Australian Standard AS/NZS 5667.4 *Water Quality – Sampling – Guidance on sampling from lakes, natural and manmade*
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 *Water quality – sampling – guidance on sampling groundwater.*
books	has the same meaning given to that term under the EP Act.

Term	Definition
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department administering the *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 or: info@dwer.wa.gov.au
critical containment infrastructure	means the items of infrastructure listed in condition 1.
Critical Containment Infrastructure Report	means a report to satisfy the CEO that works of critical containment infrastructure have been constructed in accordance with the works approval.
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V Division 3 of the EP Act.
discharge	has the same meaning given to that term under the EP Act.
emission	has the same meaning given to that term under the EP Act.
environmental commissioning	means the sequence of activities to be undertaken to test equipment integrity and operation, or to determine the environmental performance, of equipment and infrastructure to establish or test a steady state operation and confirm design specifications.
Environmental Commissioning Report	means a report on any commissioning activities that have taken place and a demonstration that they have concluded, with focus on emissions and discharges, waste containment, and other environmental factors.
Environmental Compliance Report	means a report to satisfy the CEO that the conditioned infrastructure and/or equipment has been constructed and/or installed in accordance with the works approval.
EP Act	*Environmental Protection Act 1986* (WA).
EP Regulations	*Environmental Protection Regulations 1987* (WA).
m	means metre(s)
mbgl	means metre(s) below ground level
mg/L	means milligrams per litre

Term	Definition
mm	means millimetre(s)
monthly period	means a one-month period commencing from the first day of a month until the last day of the same month.
m/s	means metre(s) per second
Mt	means million tonnes
Mtpa	means million tonnes per annum
NATA	means the National Association of Testing Authorities, Australia.
NATA accredited	means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis.
premises	the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map (Figure 1) in Schedule 1 to this works approval.
prescribed premises	has the same meaning given to that term under the EP Act.
quarterly period	Means the four inclusive periods from 1 January to 31 March, 1 April to 30 June, 1 July to 30 September, and 1 October to 31 December.
RL	means Reduced Level
suitably qualified geotechnical engineer	means a person who: (a) holds a Bachelor of Engineering recognised by the Institute of Engineers; and (b) has a minimum of five years of experience working in the area of geotechnical engineering or is otherwise approved by the CEO to act in this capacity.
suitably qualified hydrogeologist	means a person who holds a tertiary qualification specialising in environmental science or equivalent and has a minimum of five years of experience working in area of hydrogeology, including investigation and assessment of groundwater resources, or who is otherwise approved by the CEO to act in this capacity.
suitably qualified person	means a person who holds a tertiary academic qualification in engineering and has a minimum of 3 years of experience in their area of expertise.
SWL	means Standing Water Level
TDS	Means Total Dissolvable Solids

Term	Definition
time limited operations	refers to the operation of the infrastructure and equipment identified under this works approval that is authorised for that purpose, subject to the relevant conditions.
TSF	means tailings storage facility
V:H	means vertical to horizontal ratio
VWP(s)	means vibrating wire piezometer(s)
WAD CN	means weak acid dissociable cyanide
waste	has the same meaning given to that term under the EP Act.
works approval	refers to this document, which evidences the grant of the works approval by the CEO under section 54 of the EP Act, subject to the conditions.
works approval holder	refers to the occupier of the premises being the person to whom this works approval has been granted, as specified at the front of this works approval.

END OF CONDITIONS

Schedule 1: Maps

Premises map

The boundary of the prescribed premises is shown in the map below (Figure 1).

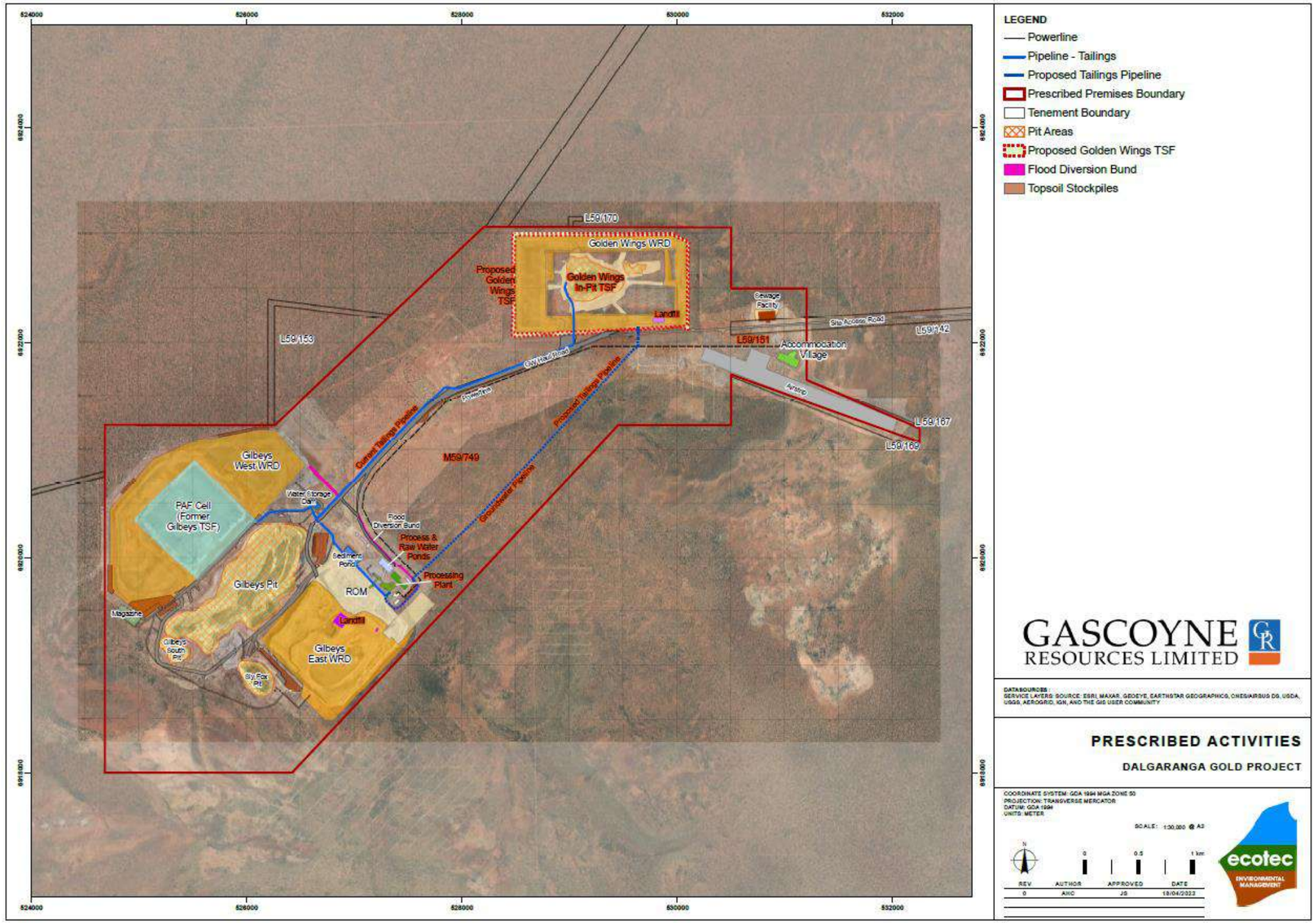


Figure 1: Map of the boundary of the prescribed premises

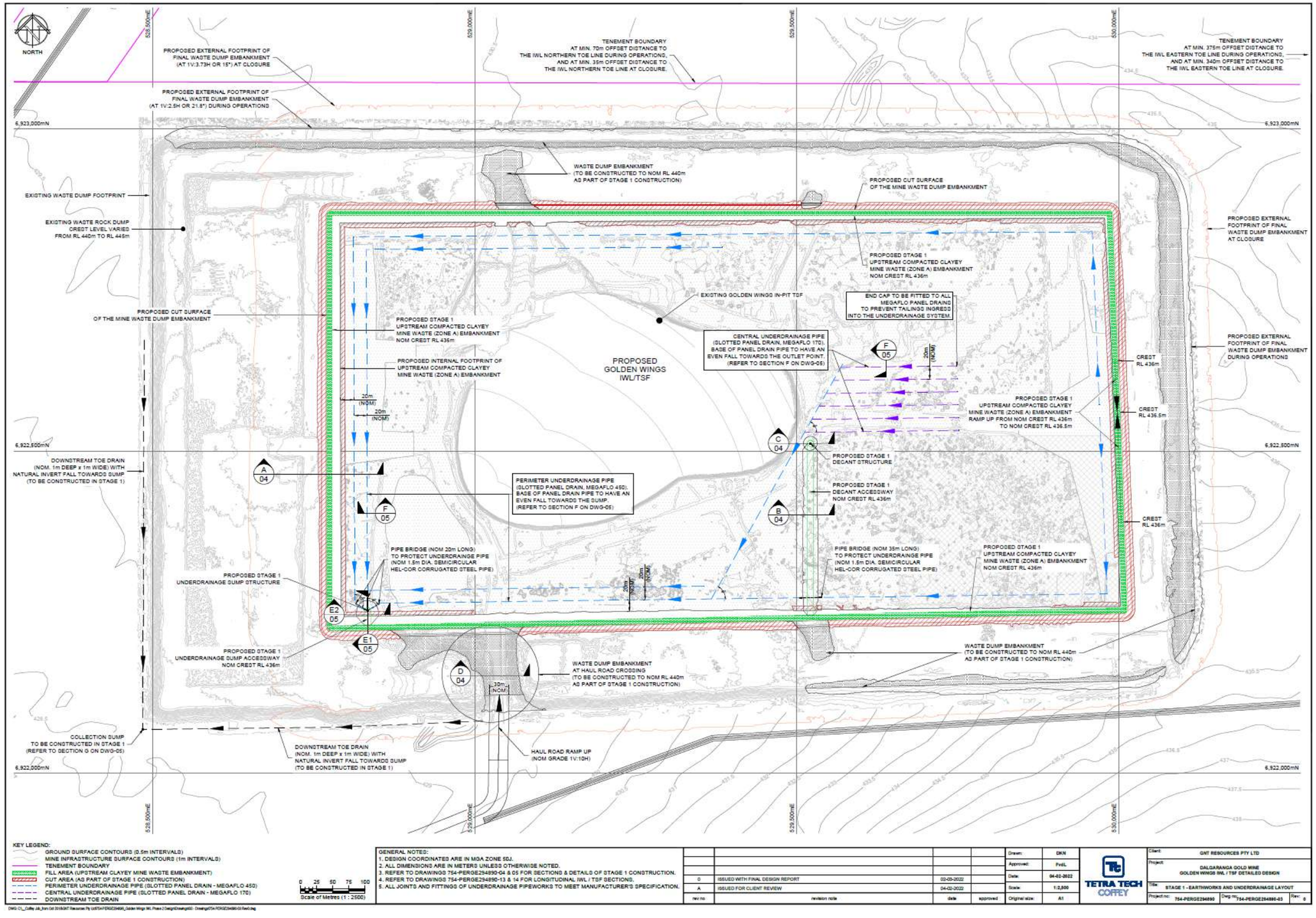


Figure 2: Golden Wings TSF design - Stage 1 and underdrainage system

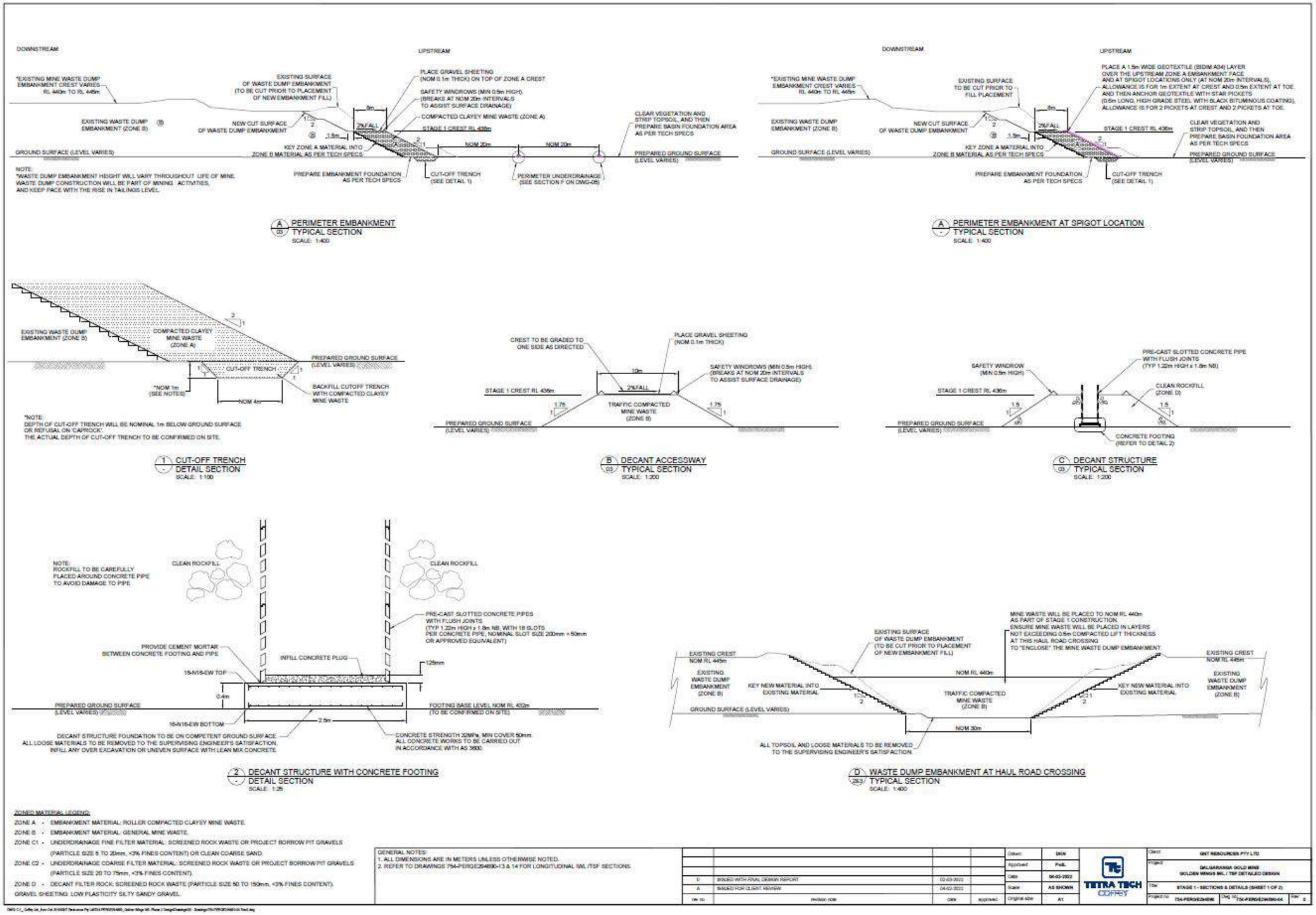


Figure 3: Golden Wings TSF design - Stage 1

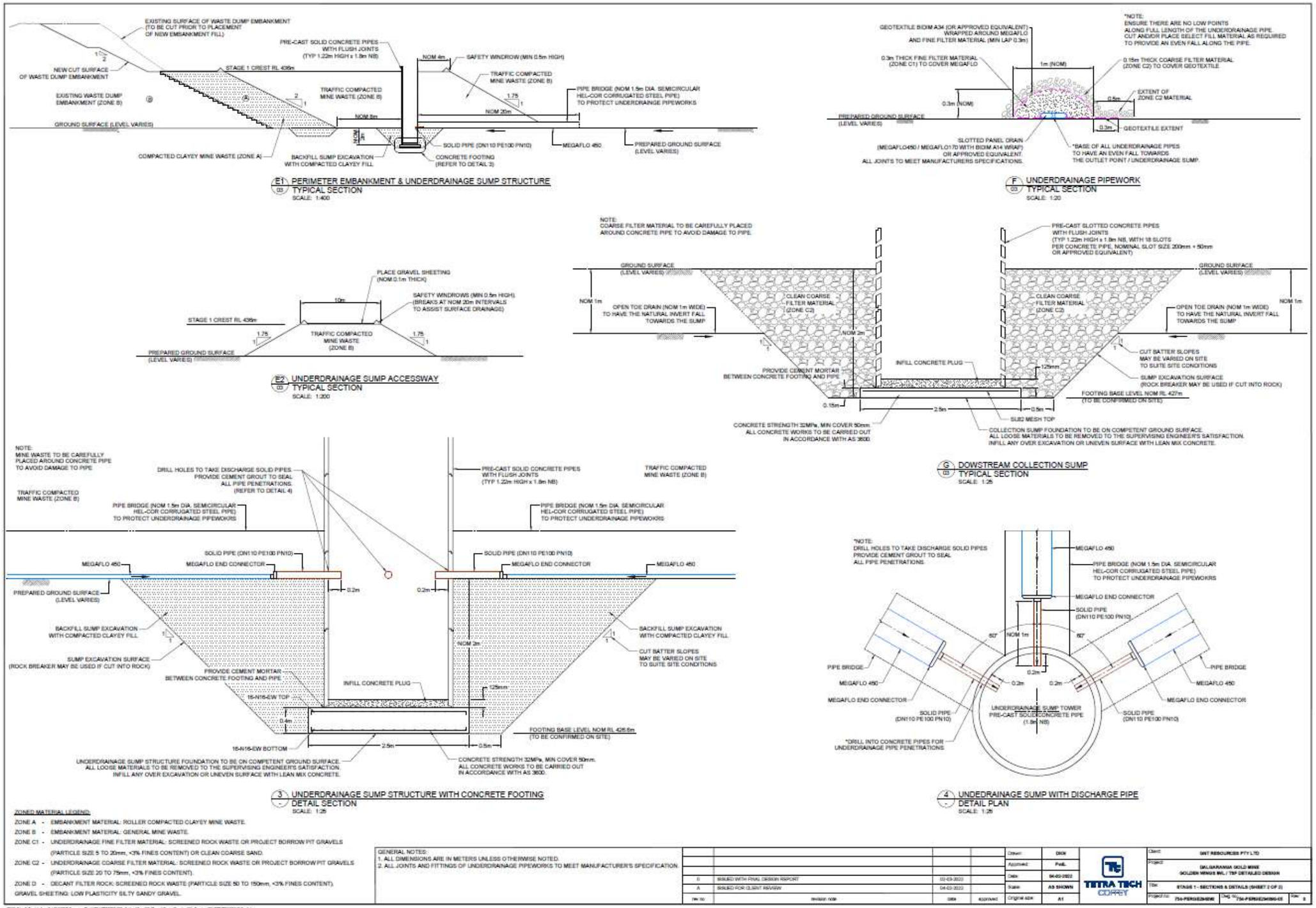


Figure 4: Golden Wings TSF design - Stage 1

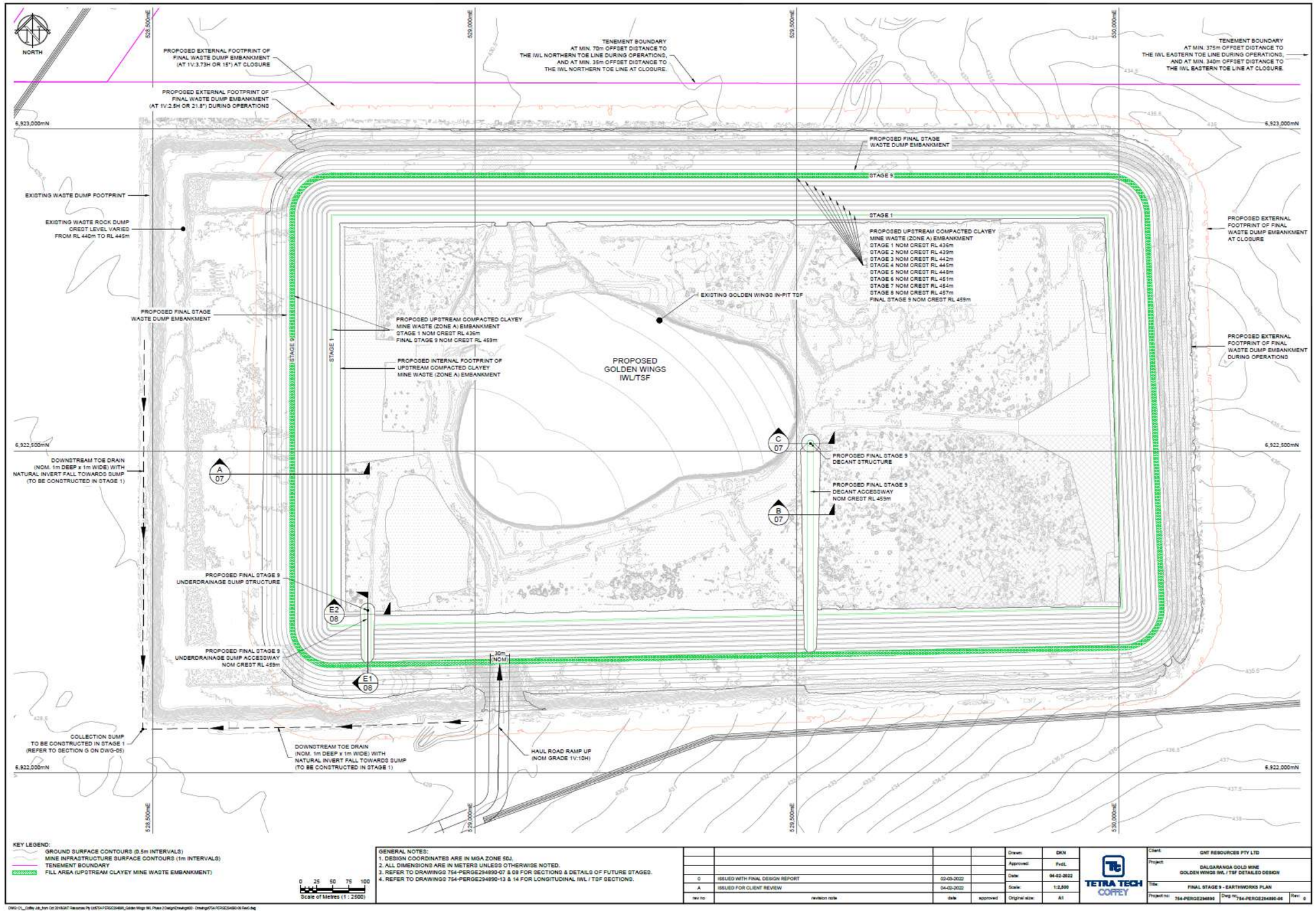


Figure 5: Golden Wings TSF design – final Stage 9

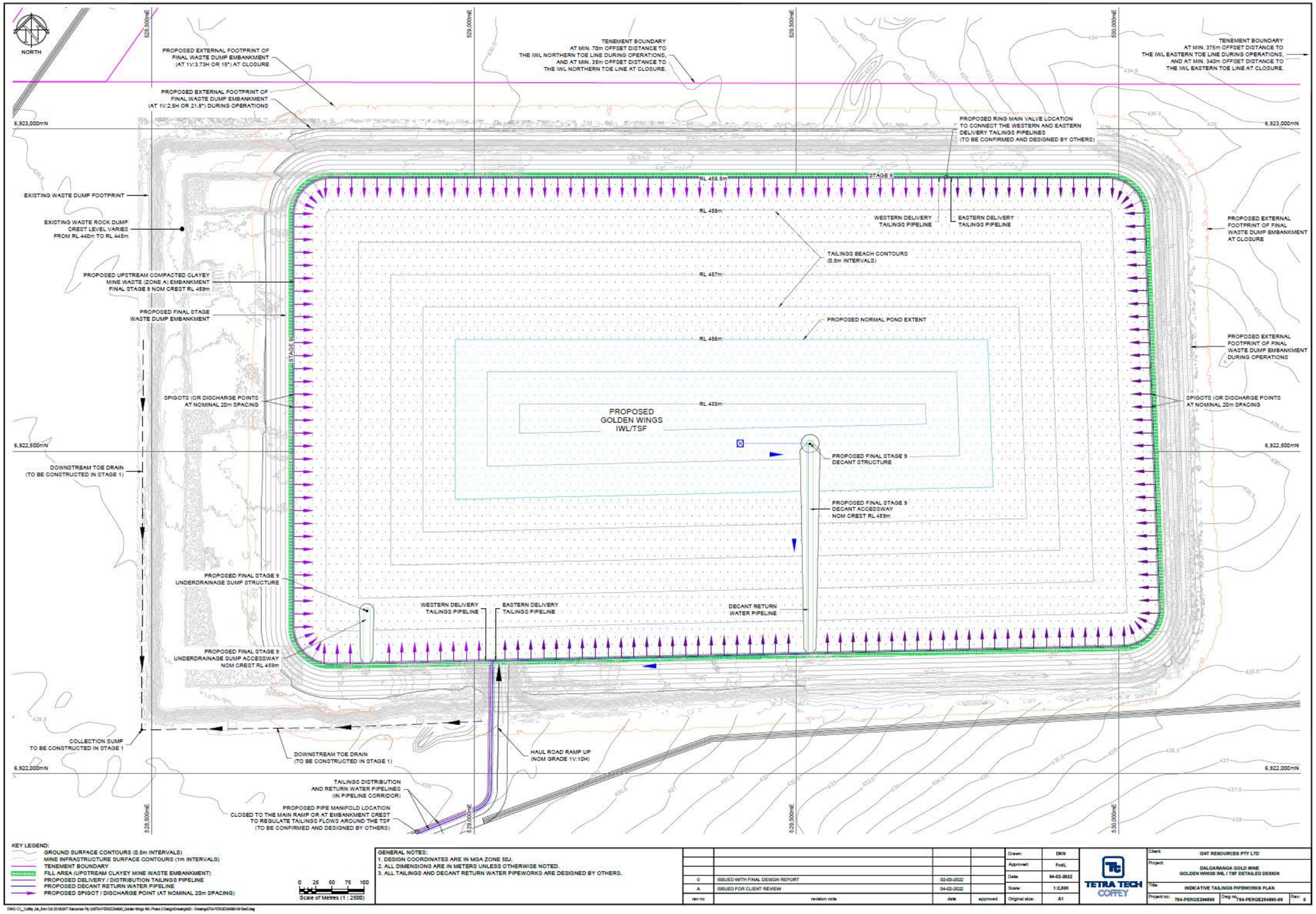
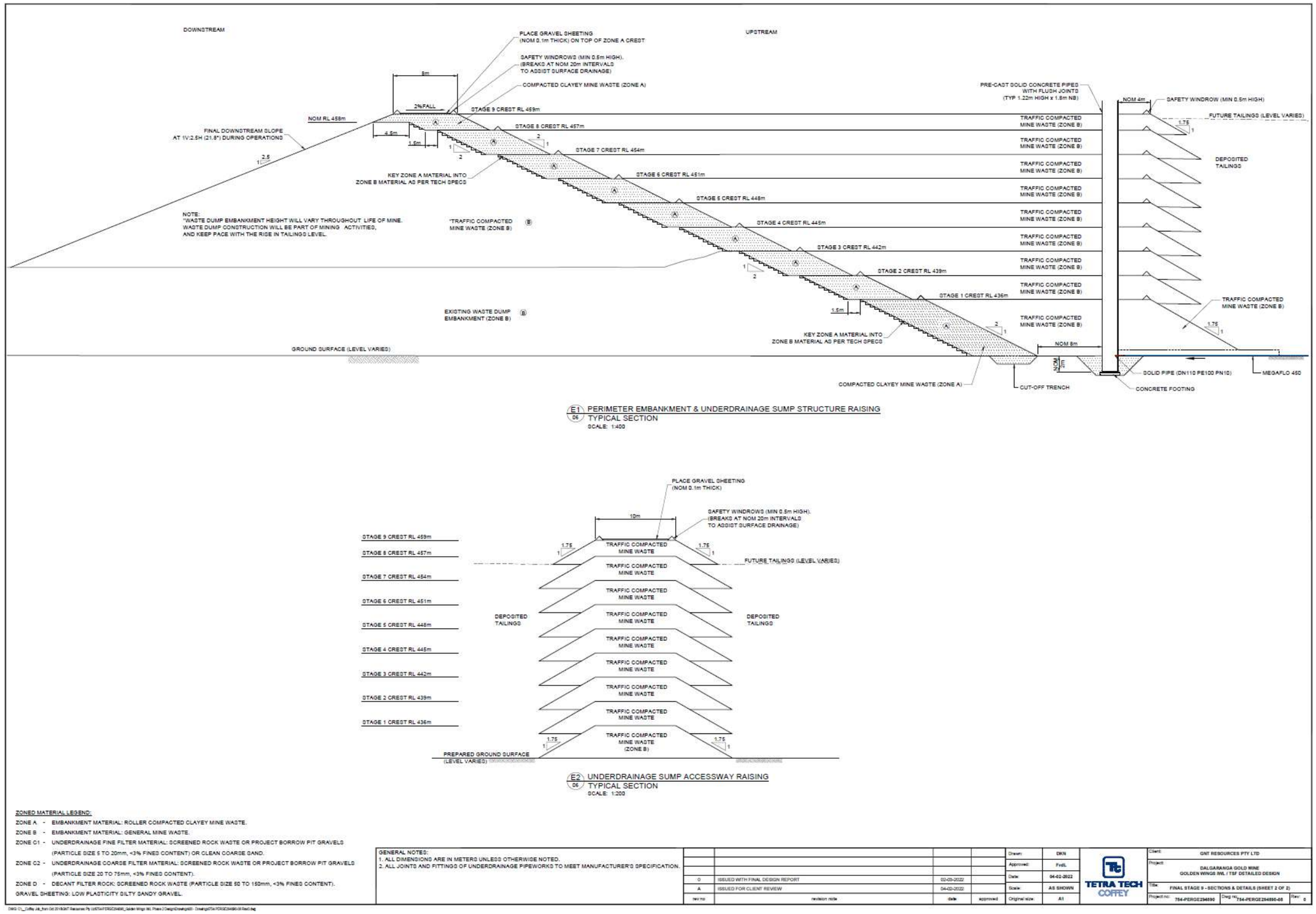


Figure 6: Golden Wings TSF design – spigot locations and indicative pipework



E1 06 PERIMETER EMBANKMENT & UNDERDRAINAGE SUMP STRUCTURE RAISING
TYPICAL SECTION
SCALE: 1:400

E2 06 UNDERDRAINAGE SUMP ACCESSWAY RAISING
TYPICAL SECTION
SCALE: 1:200

ZONED MATERIAL LEGEND:

ZONE A - EMBANKMENT MATERIAL: ROLLER COMPACTED CLAYEY MINE WASTE.
ZONE B - EMBANKMENT MATERIAL: GENERAL MINE WASTE.
ZONE C1 - UNDERDRAINAGE FINE FILTER MATERIAL: SCREENED ROCK WASTE OR PROJECT BORROW PIT GRAVELS (PARTICLE SIZE 5 TO 20mm, <3% FINES CONTENT) OR CLEAN COARSE SAND.
ZONE C2 - UNDERDRAINAGE COARSE FILTER MATERIAL: SCREENED ROCK WASTE OR PROJECT BORROW PIT GRAVELS (PARTICLE SIZE 20 TO 75mm, <3% FINES CONTENT).
ZONE D - DECANT FILTER ROCK: SCREENED ROCK WASTE (PARTICLE SIZE 50 TO 150mm, <3% FINES CONTENT).
GRAVEL SHEETING: LOW PLASTICITY SILTY SANDY GRAVEL.

GENERAL NOTES:
1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWIGE NOTED.
2. ALL JOINTS AND FITTINGS OF UNDERDRAINAGE PIPEWORKS TO MEET MANUFACTURER'S SPECIFICATION.

rev no	revision note	date	approved
0	ISSUED WITH FINAL DESIGN REPORT	02-03-2022	
A	ISSUED FOR CLIENT REVIEW	04-02-2022	

Drawn: DKN
Approved: FndL
Date: 04-02-2022
Scale: AS SHOWN
Original size: A1

TETRA TECH COFFEY

Client: GNT RESOURCES PTY LTD
Project: DALGARANGA GOLD MINE
GOLDEN WINGS IWL / TSF DETAILED DESIGN
Title: FINAL STAGE 9 - SECTIONS & DETAILS (SHEET 2 OF 2)
Project no: 754-PERGE294690 Dwg no 754-PERGE294690-03 Rev: 0

Figure 7: Golden Wings TSF design – embankment raises

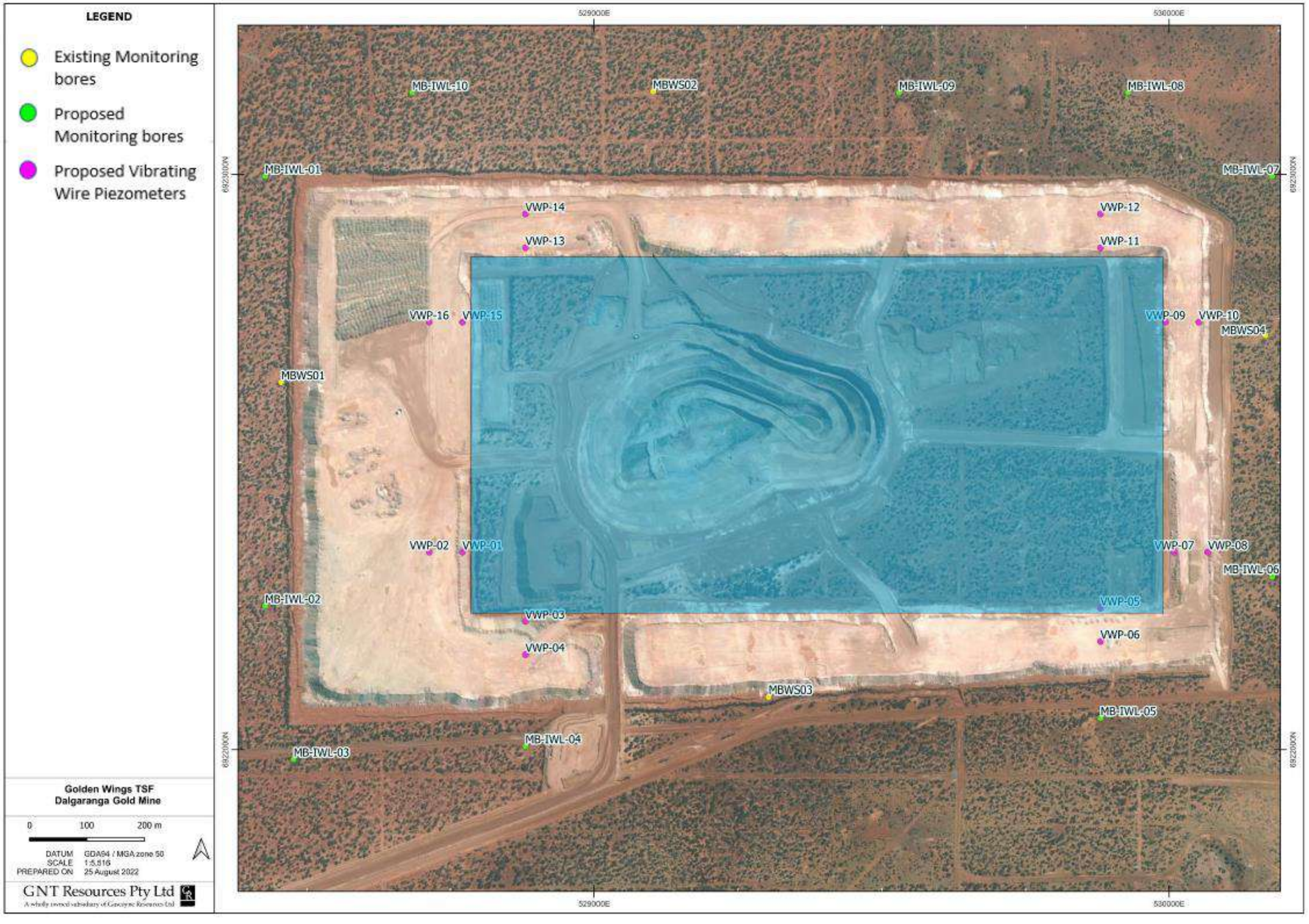


Figure 8: Existing and proposed groundwater monitoring bore and VWP locations