Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6536/2021/1
Works approval holder	Genesis Minerals Limited
ACN	124 772 041
Registered business address	'Alluvion' Level 19 58 Mounts Bay Road PERTH WA 6000
DWER file number	DER2018/001042-5
Duration	30/07/2021 to 29/07/2026
Date of issue	30/07/2021
Date of amendment	11/03/2024
Premises details	Ulysses Gold Project Legal description Mining Tenements: G40/4, G40/5, G40/6, L40/11, L40/12, L40/30, L40/34, M40/3, M40/107, M40/110, M40/137, M40/166, M40/174, M40/288, M40/289, M40/290, M40/291, M40/293, M40/340 As defined by the maps in Schedule 1

Prescribed premises category description (Schedule 1, ***Environmental Protection Regulations 1987***)	**Assessed production / throughput capacity**
Category 5: Processing or beneficiation of metallic or non-metallic ore	1,600,000 tonnes per annual period
Category 6: Mine dewatering	640,000 kL per annual period
Category 54: Sewage facility	112 m^3 per day
Category 89: Putrescible landfill site	5,000 tonnes per annual period

This amended works approval is granted to the works approval holder, subject to the attached conditions, on 11 March 2024, by:

Christine Pustkuchen
Digitally signed by Christine Pustkuchen
Date: 2024.03.11 10:06:46 +08'00'

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
30/07/2021	W6536/2021/1	Works approval granted.
9/06/2023	W6536/2021/1	Amendment to install additional dewatering infrastructure, increase dewatering throughput capacity and amend premises boundary.
11/03/2024	W6536/2021/1	Amended to include the construction and time limited operation of a class II Landfill, category 89, expand premises boundary, and administrative amendments to condition 1 and 8a.

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

Infrastructure and equipment

1. The works approval holder must:

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

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

(c) at the corresponding infrastructure location;

as set out in Table 1.

Table 1: Design and construction / installation requirements

Item	Infrastructure and/or equipment	Design and construction / installation requirements	Infrastructure location
1.	Ulysses Processing Plant	Must be comprised of the following infrastructure and equipment; • Run of Mine (ROM) pad; • Primary and secondary crusher with associated stockpile and reclaim areas; • Grinding circuit; • Carbon in leach (CIL) leach and absorption circuit; and • Elution and gold recovery circuit. Layout of processing plant to be in accordance with Figure 3 of Schedule 1. Water sprays to be installed on crusher tipping areas. Dust collector to be installed on crusher discharge conveyor.	As indicated in **Error! Reference source not found.**, Figure 2 and Figure 3 of Schedule 1.
2.	Raw water pond	Must be lined with a 2 mm thick HDPE liner	As indicated in 3 of Schedule 1.
3.	Dewatering pipelines	Must be installed with: • telemetry systems and pressure sensors along pipelines to allow the detection of leaks and failures; or • automatic cut-outs in the event of a pipe failure; or • secondary containment sufficient to contain any spill for a period equal to the time between daily inspections. Daily visual monitoring of dust generated during	As indicated in Figure , Figure , Figure and Figure of Schedule 1.

Item	Infrastructure and/or equipment	Design and construction / installation requirements	Infrastructure location
		construction to be undertaken Dust suppression using water carts to be applied across active work areas when visible dust is observed travelling beyond the active work area	
4	Tailings and return water pipelines	Must be installed above ground within earth-bunded corridors with scour pits or sumps. Must be fitted with isolation valves. Must be fitted with flow and leak detection sensors. Daily visual monitoring of dust generated during construction Dust suppression applied across active work areas using water carts when visible dust is observed travelling beyond the active work area.	As indicated in Figure 1 Figure and Figure of Schedule 1.
5	Surface water management system	Stormwater vee drains and culverts must be constructed to divert surface water flows from the processing plant area to the stormwater dam. Stormwater dam must be constructed with a compacted clay base.	Located to direct stormwater to the stormwater dam outlined in Figure 2 of Schedule 1.
6	Wastewater Treatment plant (WWTP)	Must be comprised of the following infrastructure and equipment: • Sludge tank; • Balance tank; • Activated sludge bioreactor; and • Treated effluent tank. Layout of the Activated Sludge Bioreactor WWTP is specified in Figure of Schedule 1. All sewage and storage treatment tanks, vessels, transfer pipelines and conveyance infrastructure must be impermeable and free of leaks or defects. Above ground infrastructure must be located on compacted in-situ soils. Stormwater must be prevented from entering the sewage treatment system and storage infrastructure. Must be able to treat up to 70m^3/day. Must be able to treat sewage to the following discharge limits: • Biochemical Oxygen Demand (BOD) <20 mg/L; • Total Suspended Solids (TSS) < 30mg/L; • Total Nitrogen < 60mg/L • Total Phosphorus < 10mg/L;	As indicated in **Error! Reference source not found.** and Figure of Schedule 1.

Item	Infrastructure and/or equipment	Design and construction / installation requirements	Infrastructure location
		• Total Dissolved Solids (TDS) < 1000 mg/L; • Residual chlorine between 0.2 – 2 mg/L; • pH range of 6.5 – 8.5; and • *Escherichia coli* (E. coli) < 1000 colony forming units (cfu)/100ml Must have a contingency storage capacity of up to two days of normal flow in the event discharge is suspended Flow meters must be installed to monitor volumes received at the inlet to the WWTP and discharged to the irrigation discharge area Alarm system must be installed to notify the operator of: • Pump faults; • High tank levels; and • Tank overflows. Chemicals must be stored separately within an above ground vessel/s located on a hardstand enclosed by bunds and in accordance with Australian Standard AS3780.	
7	Irrigation spray field	Above ground sprinklers must be installed over a 5ha area Sprinklers to be constructed so no ponding or pooling of treated wastewater should occur 2 m vertical separation distance must be maintained between the irrigated ground surface and groundwater levels Fence with safety signage must be installed to deter access	As indicated in Figure of Schedule 1.
8	WWTP and Reverse Osmosis (RO) brine pipelines	Must be installed to be impermeable and free of leaks or defects Bunding surrounding pipework must be constructed using compacted in-situ soils	As indicated in Figure 13 and Figure of Schedule 1.
9.	King Waste Rock Landform Landfill facility	Landfill to be located within the King Waste Rock landform as shown within Figure1, Schedule 1. Fence to be erected around landfill to limit wind-blown waste. A sign to be placed at the entrance of the landfill indicating the waste to be accepted. Trenches size to be 50m (length) x 5 (width) x 5m (depth). Windrows to be constructed around the perimeter of	Figure 1 and Figure 18 of Schedule 1

Item	Infrastructure and/or equipment	Design and construction / installation requirements	Infrastructure location
		each trench. Dust suppression measures with water carts to be undertaken where necessary to manage dust emissions	

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

Table 2: Infrastructure requirements – groundwater monitoring bores

Infrastructure	Design, construction, and installation requirements	Monitoring well location(s)	Timeframe
Groundwater monitoring bores MB01-06	<u>Well design and construction:</u> Designed and constructed in accordance with *ASTM D5092/D5092M-16: Standard practice for design and installation of groundwater monitoring bores*. Well screens must target the part, or parts, of the aquifer most likely to be affected by contamination[1]. Where temporary/seasonal perched features are present, wells must be nested, and the perched features individually screened.	As depicted in Figure of Schedule 1.	Must be constructed, developed (purged), and determined to be operational by no later than 30 calendar days prior to the deposition of tailings into the TSF.
	<u>Logging of borehole:</u> Soil samples must be collected and logged during the installation of the monitoring wells. A record of the geology encountered during drilling must be described and classified in accordance with the Australian Standard Geotechnical Site Investigations AS1726. Any observations of staining / odours or other indications of contamination must be included in the bore log.		
	<u>Well construction log:</u> Well construction details must be documented within a well construction log to demonstrate compliance with *ASTM D5092/D5092M-16*. 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.		
	<u>Well development:</u> All installed monitoring wells must be developed after drilling to remove fine sand, silt, clay and any drilling mud residues from around the well screen to ensure the hydraulic functioning of the well. A detailed record should be kept of well development		

Infrastructure	Design, construction, and installation requirements	Monitoring well location(s)	Timeframe
	activities and included in the well construction log.		
	Installation survey: the vertical (top of casing) and horizontal position of each monitoring well must be surveyed and subsequently mapped by a suitably qualified surveyor.		
	Well network map: a well location map (using aerial image overlay) must be prepared and include the location of all monitoring wells in the monitoring network and their respective identification numbers.		

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

3. The works approval holder must, within 60 calendar days of the monitoring wells being constructed, submit to the CEO a well construction report evidencing compliance with the requirements of condition 0.

4. The works approval holder must undertake baseline ambient groundwater monitoring in accordance with Table 3 once the monitoring wells required by condition 0 have been constructed and prior to the deposition of tailings into the Tailings Storage Facility (TSF).

5. The works approval holder must adhere to the field quality assurance and quality control procedures specified in Schedule 2 for the monitoring required by condition 0.

6. All sample analysis must be undertaken by laboratories with current accreditation from the National Association of Testing Authorities (NATA) for the relevant parameters, unless otherwise specified, in Table 3.

Table 3: Determination of baseline ambient groundwater conditions

Monitoring Bore	Parameter	Unit	Frequency	Method
MB01-06 As located in Figure of Schedule 1	Standing Water Level (SWL)[1]	mbgl	One off sample	Spot sample, in accordance with AS/NZS 5667.11
	Electrical Conductivity (EC)[1]	µS/cm		
	pH[1]	pH units		
	Total Dissolved Solids (TDS)	mg/L		
	Weak Acid Dissociable (WAD) Cyanide			
	Total Metals (Al, As, Cd, Cr, Cu, Hg, Mn, Ni, Pb, Zn)			
	Sulfate, Nitrate, Nitrite			

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

Compliance reporting – infrastructure and equipment

7. The works approval holder must within 30 calendar days of an item of infrastructure or equipment required by condition 0 being constructed and/or installed:

(a) undertake an audit of their compliance with the requirements of condition 0; and

(b) prepare and submit to the CEO an Environmental Compliance Report on that compliance.

8. The Environmental Compliance Report required by condition 8, must include as a minimum the following:

(a) certification by a qualified, competent civil or structural engineer for infrastructure items 1, 2, 4, 5, 6, 7, 8 or component(s) thereof, as specified in condition 1, Table 1 have been constructed in accordance with the relevant requirements specified in condition 1;

(b) certification by a qualified, competent person that infrastructure items 3 and 9 or component(s) thereof, as specified in condition 1, Table 1 have been constructed in accordance with the relevant requirements specified in condition 1 and;

(c) as constructed plans and a detailed site plan for each item of infrastructure or component of infrastructure specified in condition 1; and

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

Critical Containment Infrastructure (CCI)

9. The works approval holder must:

(a) construct the critical containment infrastructure;

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

(c) at the corresponding infrastructure location(s) as set out in Table 4.

Table 4: Critical containment infrastructure design and construction requirements

	Infrastructure	Design and construction requirements	Infrastructure location
1.	Tailings Storage Facility (TSF) Cells 1 and 2	Constructed within Mining tenement M40/166 as depicted in Figure 4 of Schedule 1. Storage capacity of 16.23 Mt of tailings material. Constructed to provide a minimum 0.5 metre total freeboard (including an allowance for the 1:100 year AEP 72 hour period) above the normal operating pond. Cells 1 and 2 starter embankments, including cut-off trench and toe drains must be constructed as specified in Figures 5 and 8 of Schedule 1. The foundation base of the TSF must be constructed to achieve a maximum permeability of 1 x 10^{-8} m/s.	As indicated in **Error! Reference source not found.**, Figure 2 and Figure of Schedule 1.
4.	TSF Cells 1 and 2 Underdrainage	The underdrainage system must be comprised of the following infrastructure: • Underdrainage pipe network comprised of slotted composite panel drain, covered in	As indicated in Figure 4 and Figure of Schedule 1.

	Infrastructure	Design and construction requirements	Infrastructure location
	system	filter sand or fine aggregate and wrapped in a geotextile; • Pipe network to be stabilised with coarse aggregate or select rockfill; • Pipe network to connect to underdrainage HDPE discharge pipes, which are routed to the Return Water Pond; • The Return Water Pond must be lined with a 2mm thick HDPE liner and constructed to the dimensions of 80m long, 30m wide and 5m deep; Underdrainage system of Cells 1 and 2 must be constructed as specified in Figure 7 of Schedule 1. Underdrainage pipe network must be constructed as specified in Figure 9 of Schedule 1. Toe drains and the Return Water Pond must be constructed as specified in Figure 9 of Schedule 1.	
	TSF Cells 1 and 2 Decant system	Decant system to be constructed for each cell as specified in Figure 6 of Schedule 1.	As indicated in Figure 6 of Schedule 1.
	TSF Cells 1 and 2 Embankment and decant tower raises	Embankment raise stages 1 and 2 must be constructed as specified in Figure 11 and Figure 12 of Schedule 1. Decant tower raises must be constructed in accordance with Figure 6 of Schedule 1.	As indicated in Figure , Figure 6, Figure 11 and Figure 12 of Schedule 1.
	TSF Cells 1 and 2 Monitoring infrastructure	Series of three Vibrating Wire Piezometers with data loggers to be installed as specified in Figure of Schedule 1.	As specified in Figure of Schedule 1.

10. The works approval holder is authorised to:

(c) construct embankment raises for TSF Cells 1 and 2 to the construction height; and

(d) operate TSF Cells 1 and 2 until the end of Stage 2 to the operating height,

as specified in Table 5.

Table 5: Staged construction and operating heights for TSF Cells 1 and 2

Stages	TSF	Construction height (RL)	Operating height (RL)
Starter	Cell 1	415.0m	414.5m
	Cell 2	417.5m	417.0m
1	Cell 1	417.5m	417.0m
	Cell 2	420.0m	419.5m

2	Cell 1	420.0m	419.5m
	Cell 2	422.5m	422.0m

Compliance reporting – CCI

11. The works approval holder must within 30 calendar days of the Critical Containment Infrastructure identified by condition 9 being constructed:

(a) undertake an audit of their compliance with the requirements of condition 9; and

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

12. The Critical Containment Infrastructure Report required by condition 1111 must include as a minimum the following:

(a) certification by a qualified, competent civil or structural engineer that each item of critical containment infrastructure or component thereof, as specified in condition 9, has been built and installed in accordance with the requirements specified in condition 9;

(b) 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 9;

(c) photographic evidence of the installation of the infrastructure; and

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

Environmental commissioning phase

Environmental commissioning requirements and emission limits

13. The works approval holder may only commence environmental commissioning of an item of infrastructure listed in condition 14 once the Environmental Compliance Report has been submitted for that item of infrastructure in accordance with condition 7 of this works approval.

14. Any environmental commissioning activities undertaken for an item of infrastructure specified in Table 6 may only be carried out:

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

(b) for the corresponding authorised commissioning duration.

Table 6: Environmental commissioning requirements

Infrastructure	Commissioning requirements	Authorised commissioning duration
Ulysses Processing Plant and associated infrastructure	Bunds and sumps must be leak tested. Process control alarms for loss of containment must be tested.	For a period not exceeding 90 calendar days in aggregate.
Pipelines (tailings and return water) between Processing Plant and TSF and associated dams (raw water pond, stormwater	Pipelines must be hydrotested. All flow meters must be calibrated. All pressure meters must be calibrated.	

Infrastructure	Commissioning requirements	Authorised commissioning duration
dam and return water pond).	HDPE lined dams must be leak tested.	
WWTP and Irrigation sprayfield	No more than 70m^3/day of sewage may be processed. Sewage and RO brines must be blended prior to irrigation. No more than 42 m^3/day must be added to the effluent tank of the WWTP.	

15. During environmental commissioning, the works approval holder must ensure that the emission(s) specified in Table 7, are discharged only from the corresponding discharge point(s) and only at the corresponding discharge point location(s).

Table 7: Authorised discharge points during commissioning

Emission	Discharge point	Discharge point location
Blended effluent of WWTP sewage and RO brines	Irrigation spray field via effluent pipeline	As indicated in Figure of Schedule 1

Monitoring during environmental commissioning

16. The works approval holder must monitor emissions during environmental commissioning in accordance with Table 8.

17. The works approval holder must adhere to the field quality assurance and quality control procedures specified in Schedule 2 for the monitoring required by condition 18.

18. All sample analysis must be undertaken by laboratories with current accreditation from the National Association of Testing Authorities (NATA) for the relevant parameters, unless otherwise specified, in Table 8.

Table 8: Emissions and discharge monitoring during environmental commissioning

Monitoring location	Parameter	Frequency	Unit	Averaging Period
Irrigation Sprayfield discharge point	Volume of blended effluent[1]	Daily	m^3	Continuous
	pH[1]	Monthly	pH units	Spot Sample
	Free chlorine		mg/L	
	TSS			
	BOD			
	TP			

	TN			
	E. coli		cfu/100mL	

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

19. The works approval holder must record the results of all monitoring activity required by condition 15 and 18.

Environmental Commissioning Report

20. 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 6.

21. The works approval holder must ensure the Environmental Commissioning Report required by condition 20 of this works approval includes the following:

(a) a summary of the environmental commissioning activities undertaken, including timeframes and amount of wastewater processed;

(b) the results of the blended effluent monitoring conducted in accordance with condition 15;

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

(i) hydro-testing of pipelines;
(ii) calibration of flow meters and pressure transmitters;
(iii) leak testing;
(iv) commissioning of the process control systems and high level alarms; and
(v) a summary of performance validation of wastewater treatment;

(d) 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

22. The works approval holder may only commence time limited operations for an item of infrastructure identified in condition 25:

(a) where the item of infrastructure is not authorised to undertake environmental commissioning, the Environmental Compliance Report as required by condition 8 has been submitted by the works approval holder for that item of infrastructure; and

(b) where the item of infrastructure is authorised to undertake environmental commissioning under condition 14, the Environmental Commissioning Report for that item of infrastructure as required by condition 20 has been submitted by the works approval holder.

23. The works approval holder may only commence time limited operations for an item of critical containment infrastructure identified in condition 25 where the CEO has notified

the works approval holder that the Critical Containment Infrastructure Report for that item of infrastructure as required by condition 11 meets the requirements of that condition.

24. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 25 (as applicable):

(a) for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of conditions 22 and/or 23 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 24(a).

Time limited operations requirements and emission limits

25. During time limited operations, the works approval holder must ensure that the premises infrastructure and equipment listed in Table 9 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 9.

Table 9: Infrastructure and equipment operational requirements during time limited operations

	Site infrastructure and equipment	**Operational requirement**	**Infrastructure location**
1.	Ulysses Processing Plant and associated infrastructure	Daily inspection logs must be kept of the following: • Process solution, reagent, process water, product spills to ground and clean-up; • Reagent storage, bund integrity; • Ore, water and reagent input volumes; and • Discharge tailings volume and density Stormwater must be managed such that contaminated or potentially contaminated stormwater is captured to prevent release into the environment. Spills of environmentally hazardous materials including hydrocarbons, whether inside or outside an engineered containment system, must be immediately recovered, or removed and disposed of.	As indicated in Figure 2 and Figure 3 of Schedule 1.
2.	Dams including the raw water pond, stormwater dam and return water pond	Maintain an operational freeboard of 0.5 m from the top of embankment crest at all times.	As indicated in Figure 2 and Figure of Schedule 1.
3.	Ulysses Central Pit Danluce Pit	Maintain an operational freeboard of 5 m below ground surface at all times.	As indicated in Figure 15 of Schedule 1

	Site infrastructure and equipment	Operational requirement	Infrastructure location
	Orient Well Pit		
4.	Tailings, dewatering and return water pipelines	Pipelines containing tailings, dewater or return water are required to be maintained with either: • telemetry systems and pressure sensors along pipelines to allow the detection of leaks and failures; or • automatic cut-outs in the event of a pipe failure; or • secondary containment sufficient to contain any spill for a period equal to the time between daily inspections.	As indicated in Figure 1, Figure 2, Figure Figure 16 and 17 of Schedule 1.
5.	Tailings Storage Facility (TSF) Cells 1 and 2	A minimum 0.5 metre total freeboard (including and allowance for a 1% AEP 72-hour rain event) above the normal operating pond must be maintained within each TSF cell at all times. Tailings must be thickened to above 55% w/w solids prior to deposition to the TSF. The tailings beach must be managed via spigot placement to avoid ponding of supernatant water in areas other than the decant pond.	As indicated in Figure 4, Figure , Figure 11 and figure 12 of Schedule 1
6.	WWTP and associated infrastructure	Stormwater must be prevented from entering the sewage treatment system and storage infrastructure. Must be able to treat up to 70m^3/day. Sewage and RO brines must be blended prior to irrigation. No more that 42 m^3/day must be added to the effluent tank of the WWTP. Must be able to treat sewage to the following discharge limits: • Biochemical Oxygen Demand (BOD) <20 mg/L; • Total Suspended Solids (TSS) < 30mg/L; • Total Nitrogen < 60mg/L • Total Phosphorus < 10mg/L; • Total Dissolved Solids (TDS) < 1000 mg/L; • Residual chlorine between 0.2 – 2 mg/L; • pH range of 6.5 – 8.5; and	As indicated in Figure of Schedule 1.

	Site infrastructure and equipment	Operational requirement	Infrastructure location
		• *Escherichia coli* (E. coli) < 1000 colony forming units (cfu)/100ml. Chemicals must be stored separately within an above ground vessel/s located on a hardstand enclosed by bunds and in accordance with Australian Standard AS3780.	
7.	Irrigation spray field	No ponding or pooling of treated wastewater must occur. No more than 112 m^3/day of blended effluent must be irrigated. 2 m vertical separation distance must be maintained between the irrigated ground surface and groundwater levels. Fence with safety signage must be maintained to deter access.	As indicated in Figure of Schedule 1
8.	King Waste Rock Landform Landfill facility	Waste is to be covered with a dense, inert and incombustible material at least monthly. Wind-blown waste to be collected weekly and returned to the tipping area. Windrows around landfill trench to be maintained. Landfill boundary fencing to be maintained to ensure windblown waste in contained. Watercart to be available to apply water for dust suppression as required.	Figure 1 and Figure 18 of Schedule 1

26. During time limited operations, the works approval holder must conduct visual inspections of the infrastructure specified in Table 10.

Table 10: Inspections of infrastructure

	Infrastructure	Type of inspection	Frequency
1.	Tailings delivery pipelines	To confirm integrity	Twice daily
2.	Return water pipelines	To confirm integrity	Twice daily
3.	Dewatering pipelines	To confirm integrity	Daily
4.	TSF embankment	To confirm required freeboard capacity is available. To confirm integrity.	Daily
5.	Raw water pond, stormwater dam and	To confirm required freeboard capacity is available	Daily

	return water pond		
6.	TSF decant ponds	To confirm size and location	Daily
7.	King Waste Rock Landform Landfill	To confirm no windblown waste	Weekly

27. During time limited operations, the works approval holder must ensure that the emission(s) specified in Table 11, are discharged only from the corresponding discharge point(s) and only at the corresponding discharge point location(s).

Table 11: Authorised discharge points

Emission	Discharge point	Discharge point location
Blended effluent of WWTP sewage and RO brines	Irrigation spray field via effluent pipeline.	As indicated in Figure 13 of Schedule 1.
Tailings	TSF Cells 1 and 2 Spigots located on the upstream crest of the perimeter embankment	As indicated in Figure of Schedule 1.
Dewater from open pits and underground mines	Via water cart for site wide dust suppression	N/A – applied to avoid damage to native vegetation (such as from over spraying or runoff).
Dewater from open pits and underground mines	Danluce Pit Orient Well Pit Ulysses Central Pit	As indicated in Figure 15 of Schedule 1

Waste acceptance

28. The Works Approval Holder must only accept waste on to the landfill for burial if:

(a) it is of a type listed in Table 12;

(b) the quantity accepted is below any quantity limit listed in Table 12; and

(c) it meets any specification listed in Table 12

Table 12: Types of waste authorised to be accepted for disposal at the landfill

Waste type	Quantity limit (tonnes/per year)	specification
Clean Fill	5,000 tonnes per year for all waste types	None specified
Uncontaminated Fill		
Putrescible wastes		
Inert Waste Type 1		
Inert Waste Type 2		Tyres and plastics
Contaminated solid waste meeting the waste acceptance criteria for Class II landfills		

29. The Works Approval holder must ensure that wastes generated on the Premises are only subjected to the processes set out in Table 13 and in accordance with any process limits described in that table.

Table 13: Waste processing requirements

Waste type	Process(es)	Process requirements
Clean and Uncontaminated Fill Putrescible wastes Inert Waste Type 1 Inert Waste Type 2 Contaminated solid waste meeting waste acceptance criteria specified for Class II landfills[1]	Handling and disposal of waste by land filling.	(i) Disposal of waste by landfilling shall only take place within the King Waste Rock Landform as shown in Figure 1 and Figure 18; (ii) Waste is to be disposed of in a defined trench enclosed by earthen bunds; (iii) The tipping area is restricted to less than 30 meters in length and no higher than 2m.
Inert Waste Type 2 (Tyres only)	Handling and disposal of waste by landfilling.	(i) Tyres are only to be disposed of within the Admiral, Butterfly or King Waste Rock Landforms as shown in Figure 1 and Figure 18 (j) Tyres are to be buried in batches of 20 with a minimum of 1m separation between tyres and a 10m horizontal and 5m vertical buffer zone between batches

Note 1: as defined in Landfill Waste Classification and Waste Definitions 1996 (as amended 2019)

Monitoring during time limited operations

30. The works approval holder must monitor emissions during time limited operations in accordance with Table 14.

Table 14: Emissions and discharge monitoring during time limited operations

Monitoring location	Parameter	Frequency	Unit	Limit	Averaging Period
Irrigation spray field discharge point	Volume of blended effluent[1]	Daily	m^3	-	Continuous
	pH[1]	Quarterly	pH units		Spot Sample
	Free chlorine		mg/L		

	TSS				
	BOD				
	TP				
	TN				
	E. coli		cfu/100mL		
Ulysses Central Pit Danluce Pit Orient Well Pit	Cumulative volume of water discharged	Monthly[2] (when discharging)	kL	390,000 kL cumulative for all pits per annual period	Continuous
	Standing water level		m AHD	No higher than 425 m AHD for Danluce Pit	Spot Sample
	pH[2]		-	N/A	
	Electrical conductivity (EC)[3]		µS/cm	N/A	

Note 1: In-field non-NATA accredited analysis permitted.
Note 2: Monthly monitoring undertaken at least 15 days apart
Note 3: In-field not-NARA accredited analysis

31. The works approval holder must monitor the groundwater during time limited operations for concentrations of the identified parameters in accordance with Table 15.

Table 15: Monitoring of ambient groundwater concentrations during time limited operations

Monitoring Bore	Parameter	Unit	Limit	Frequency	Method
MB01-06 As located on Figure of Schedule 1	Standing Water Level (SWL)[1]	mbgl	4 mbgl	Quarterly[2]	Spot sample, in accordance with AS/NZS 5667.11
	Electrical Conductivity (EC)[1]	µS/cm	-		
	pH[1]	pH units	-		
	Weak Acid Dissociable (WAD) Cyanide	mg/L	0.5 mg/L		
	Total Dissolved Solids (TDS)		-		
	Total Metals (Al, As, Cd, Cr, Cu, Hg, Mn, Ni, Pb, Zn)				
	Sulfate, Nitrate, Nitrite				

Note 1: In-field non-NATA accredited analysis permitted.
Note 2: Quarterly monitoring is undertaken at least 45 calendar days apart.

32. The works approval holder must record the results of all monitoring activity required by conditions 30 and 31.

33. The works approval holder must undertake monitoring of the water balance for TSF Cells 1 and 2 each monthly period during time limited operations, and as a minimum record the following information:

(a) Site rainfall;

(b) Evaporation rate;

(c) Decant water, toe drainage and recover bore (if applicable) volumes;

(d) Volume of tailings deposited;

(e) Volume of water in tailings;

(f) Percentage (%) of solids in tailings; and

(g) Calculated seepage losses.

34. The works approval holder must adhere to the field quality assurance and quality control procedures specified in Schedule 2 for the monitoring required by conditions 30 and 31.

35. All sample analysis must be undertaken by laboratories with current accreditation from the National Association of Testing Authorities (NATA) for the relevant parameters, unless otherwise specified, in Table 14 and Table 15.

Compliance reporting

36. 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 30 calendar days before the expiration date of the works approval, whichever is the sooner.

37. The works approval holder must ensure the report required by condition 36 includes the following:

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

(b) a summary of emission and discharge monitoring and ambient groundwater monitoring results obtained during time limited operations under conditions 30 and 31;

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

(i) Product produced;

(ii) Tailings deposited;

(iii) Tailings density (solid vs water content);

(iv) TSF and all site dam and pond water balances;

(v) Quality and quantity of treated effluent discharged to the irrigation spray field; and

(vi) volumes of waste disposed of at the landfill.

(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.

Records and reporting (general)

38. 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.

39. 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 conditions 1, 2 and 9;

(b) any maintenance of infrastructure that is performed in the course of complying with conditions 1, 2 and 9;

(c) monitoring programmes undertaken in accordance with conditions 4, 16, 30 and 31;

(d) complaints received under condition 38.

40. The books specified under condition 39 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 16 have the meanings defined.

Table 16: Definitions

Term	Definition
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 *Water Quality Sampling – Guidance on sampling of groundwaters.*
annual period	a 12 month period commencing from 30 June until 1 July of the immediately following year.
books	has the same meaning given to that term under the EP Act.
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 info@dwer.wa.gov.au
condition	Means a condition to which this works approval is subject under s62 of the EP Act.
Class II landfill	Means an unlined landfill designed to accept the waste type as defined under the Landfill Definitions for burial.
critical containment infrastructure	means the items of infrastructure listed in condition T2.
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	means a report on any commissioning activities that have taken

Term	Definition
Commissioning Report	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).
Landfill definitions	Means the document titled 'Landfill Waste Classification and Waste Definitions 1996" published by the CEO of the Department of Water and Environmental Regulation as amended.
freeboard	means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point.
mbgl	Means metres below ground level
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.
putrescible waste	Has the same meaning given to that term in the Landfill definitions.
qualified, competent civil or structural engineer	means a person who: (a) holds a Bachelors degree recognised by Engineers Australia; and (b) has a minimum of 5 years of experience working in a supervisory role in civil or structural engineering; and (c) is employed by an independent third party external to the works approval holders business; or is otherwise approved in writing by the CEO to act in this capacity.
qualified, competent person	means a person who has been suitably accredited and has experience working as a: (a) mining or geotechnical engineer for the certification of the

Term	Definition
	landfill or any component thereof; or (b) a poly welder for the certification of the dewatering pipelines or any component thereof.
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	Tailings Storage Facility
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 by the yellow lines in the map below (Figure 1)

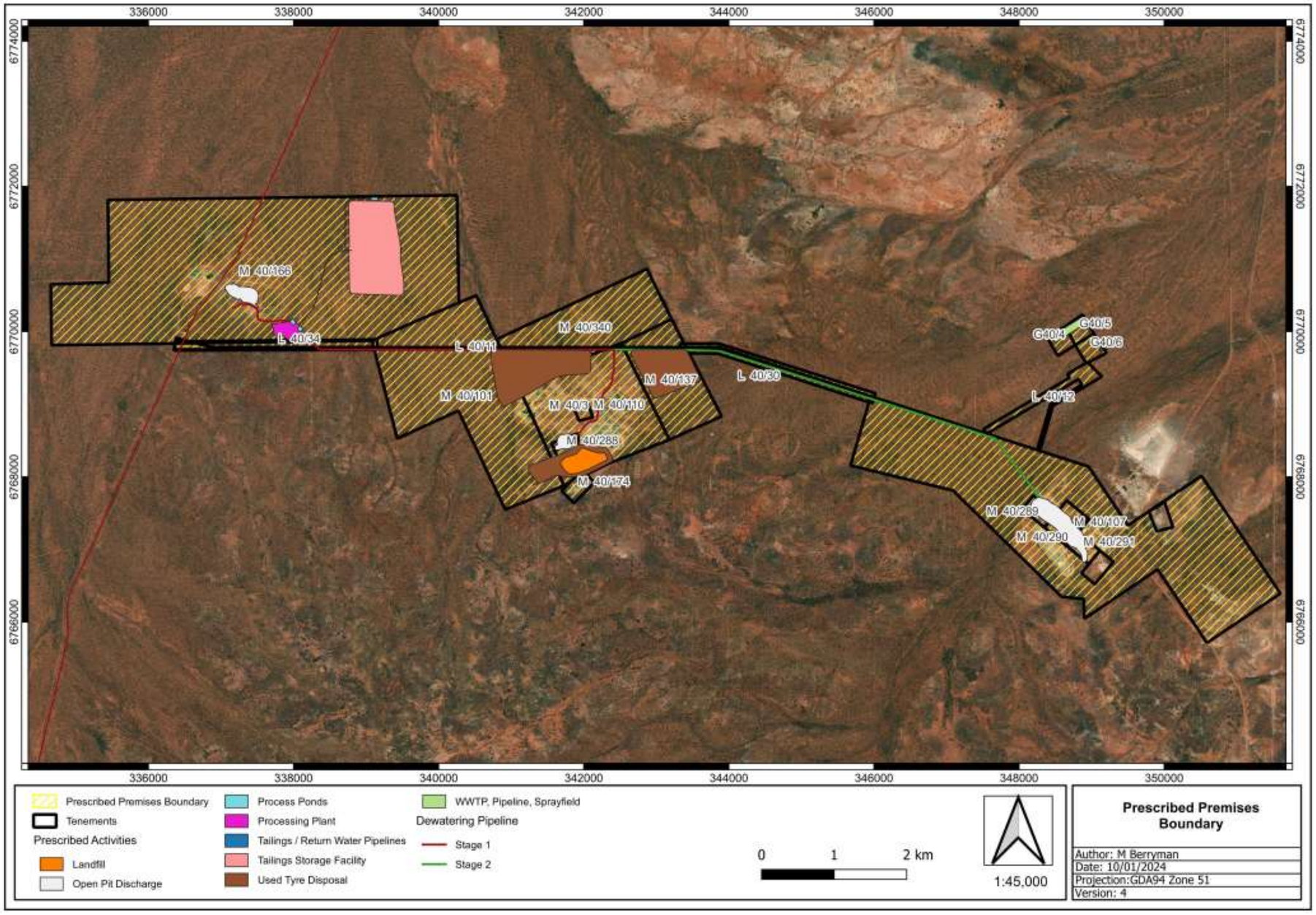


Figure 1: Map of the prescribed premises boundary

Processing Plant and TSF overview

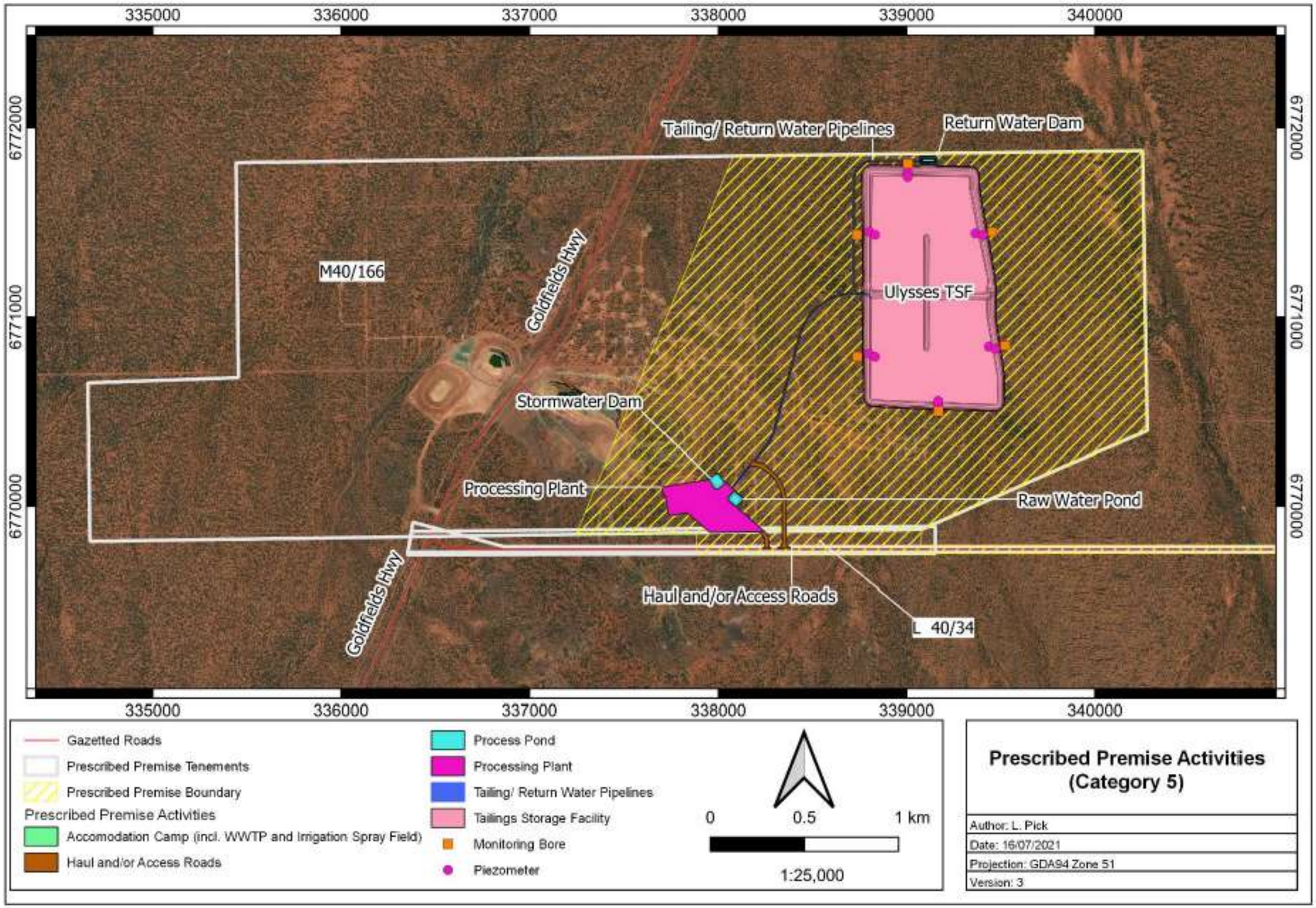


Figure 2: Overview of the Processing Plant and TSF location

Ulysses Processing Plant

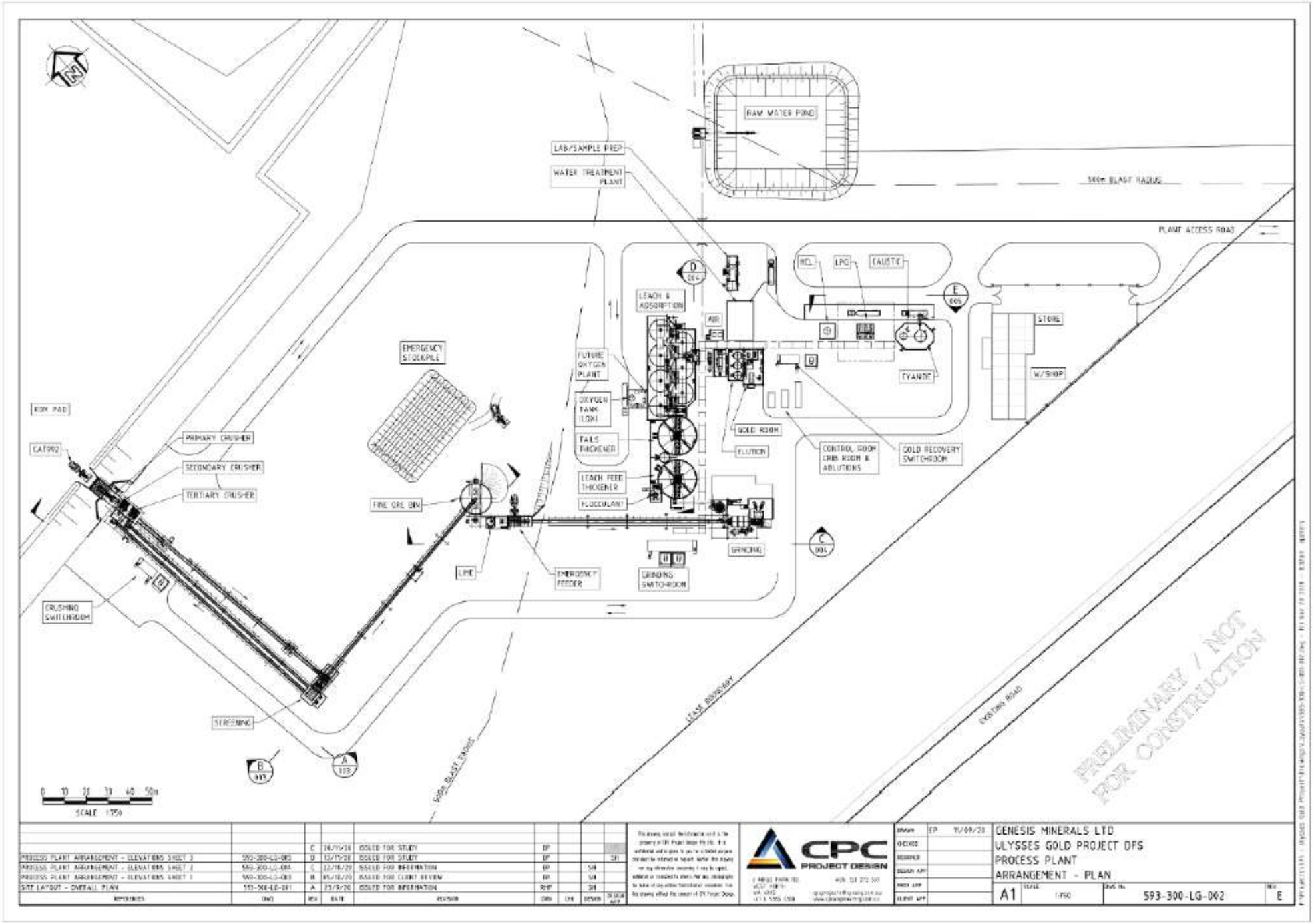


Figure 3: Processing Plant Layout

Ulysses Tailings Storage Facility (TSF)

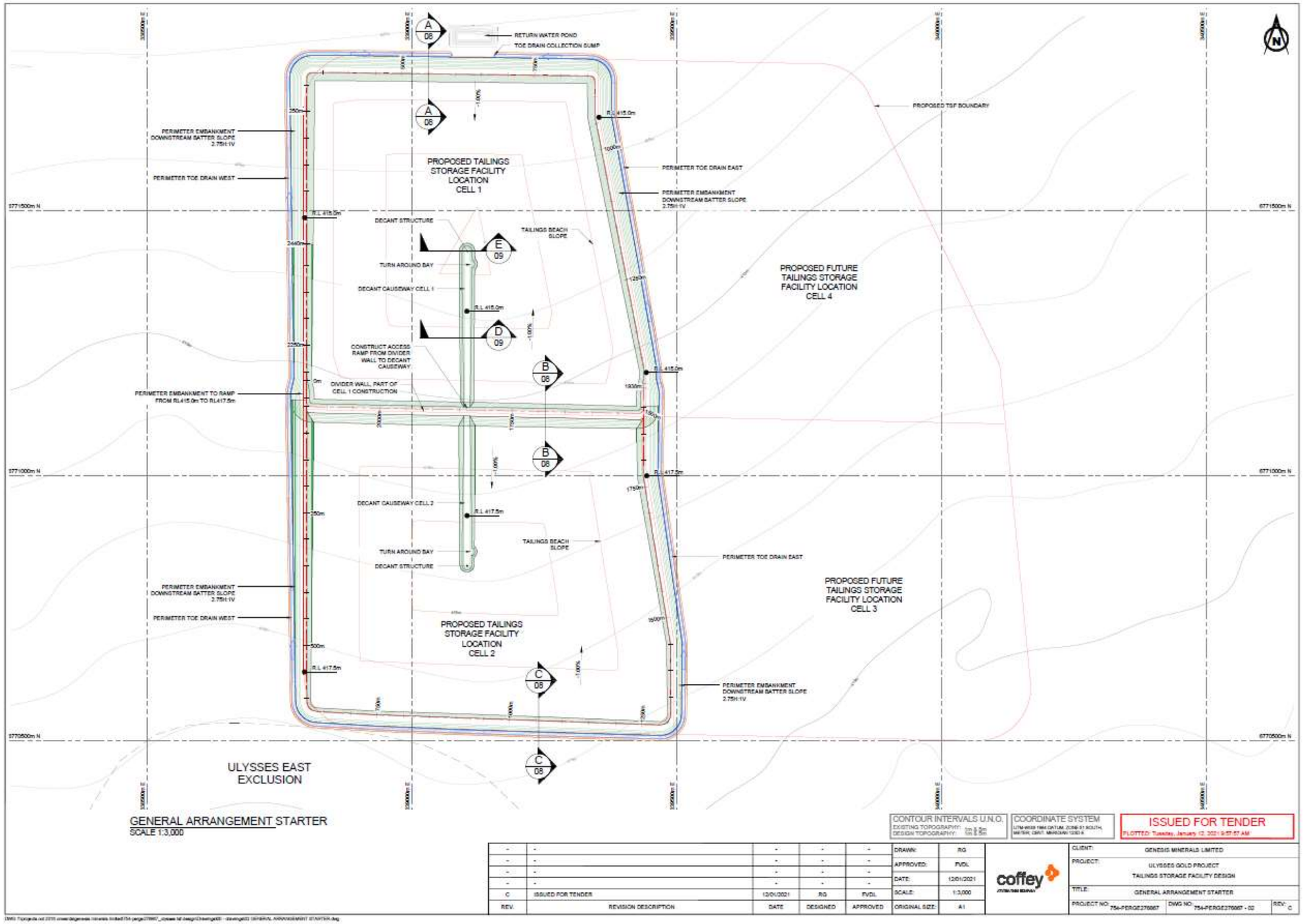


Figure 4: General TSF layout

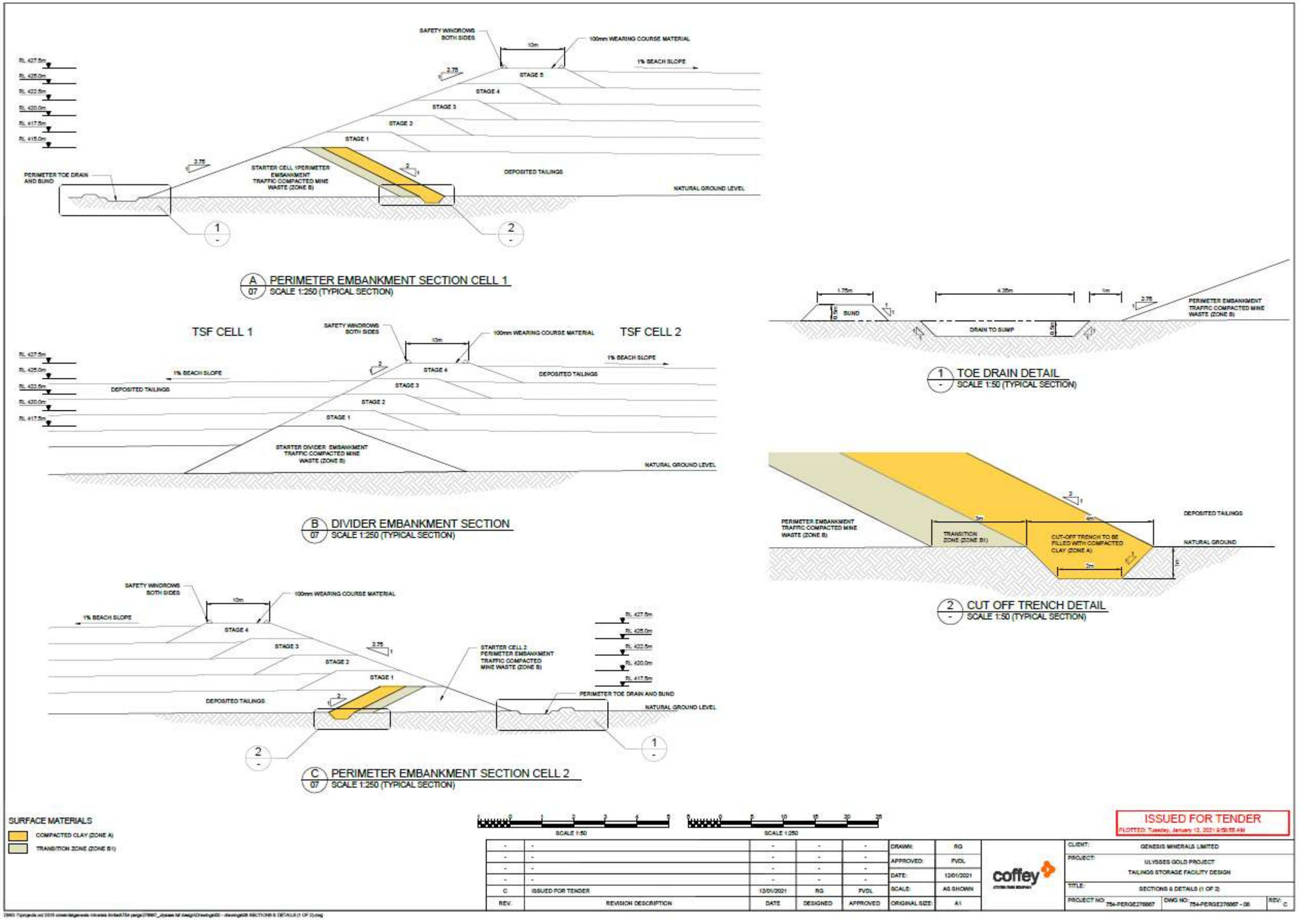


Figure 5: TSF perimeter embankment specifications

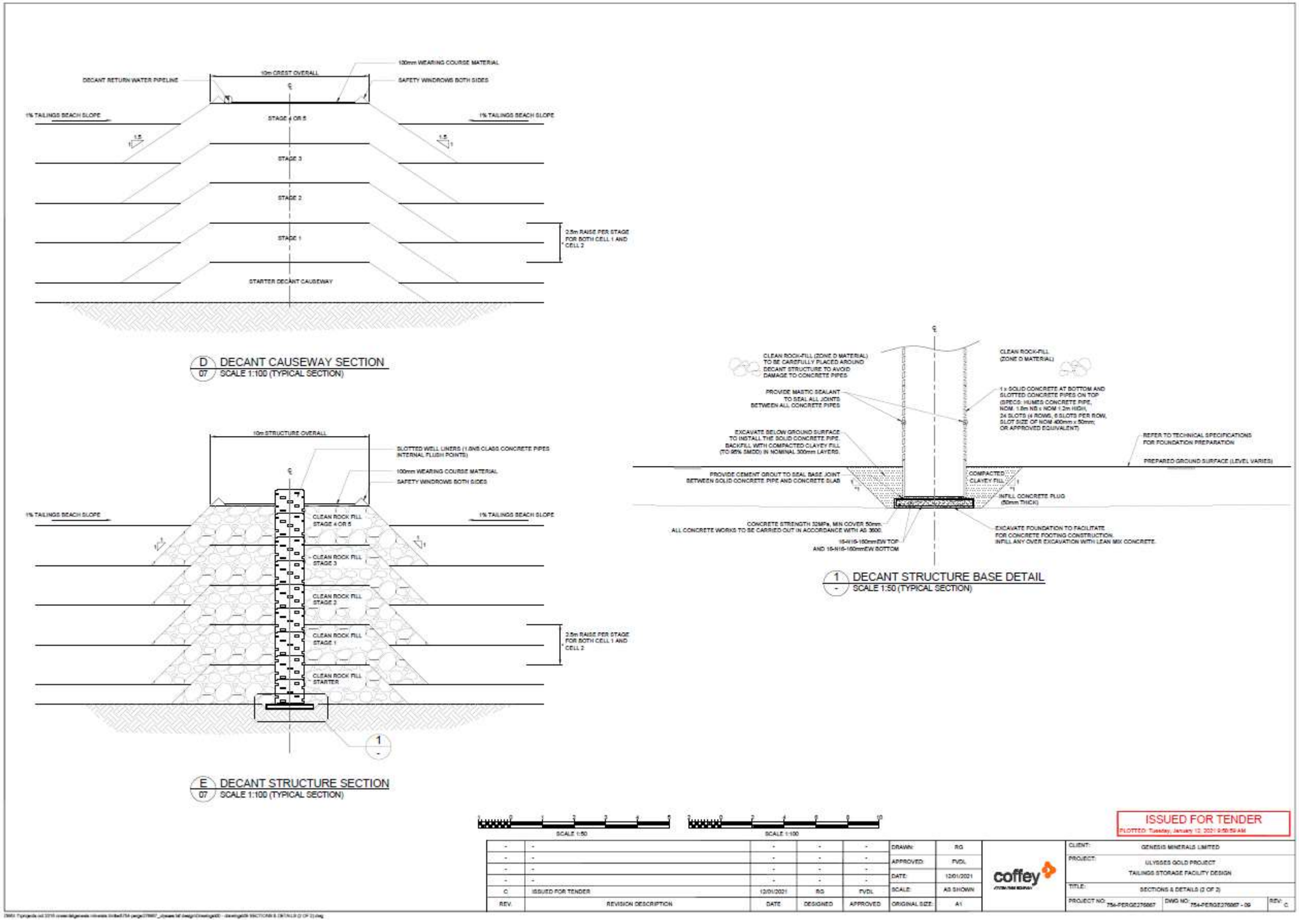


Figure 6: TSF decant system specifications

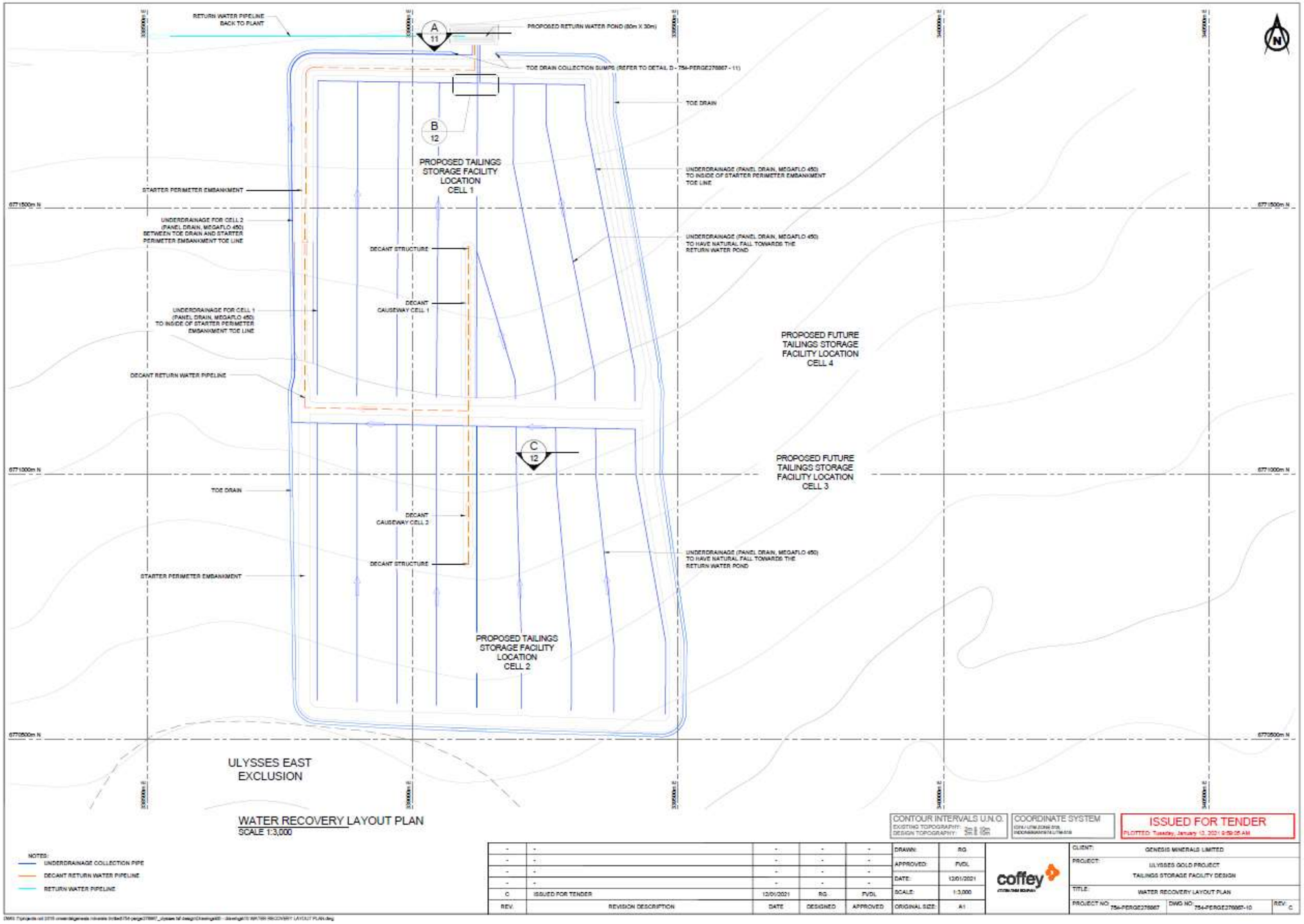
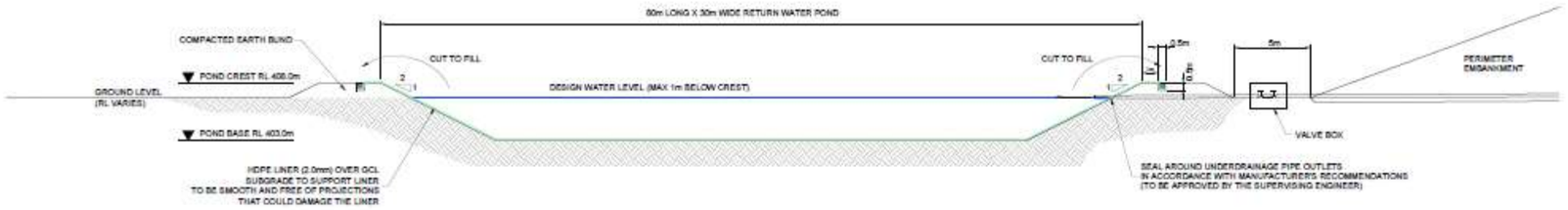
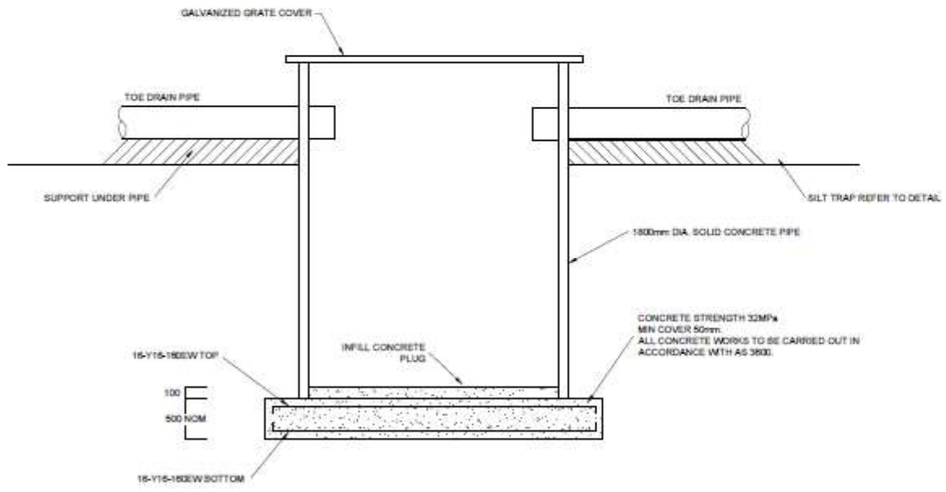


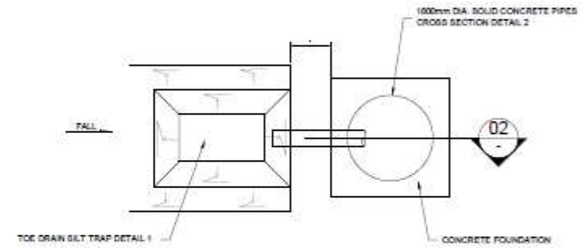
Figure 7: TSF under drainage specifications



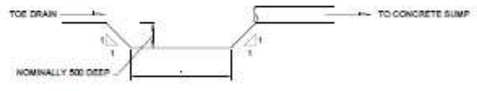
A 10 RETURN WATER POND SECTION
SCALE NTS (TYPICAL SECTION)



2 - TOE DRAIN COLLECTION SUMP DETAIL
SCALE NTS (TYPICAL SECTION)



D 10 DOWNSTREAM TOE DRAIN. COLLECTION SUMP AND SILT TRAP
SCALE NTS (TYPICAL SECTION)



1 - TOE DRAIN SILT TRAP
SCALE NTS (TYPICAL SECTION)

ISSUED FOR TENDER
PLOTTED: Tuesday, January 12, 2021 9:59:06 AM

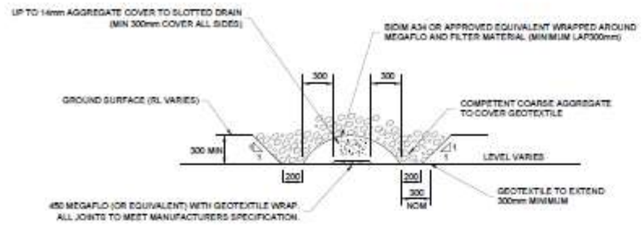
REV.	REVISION DESCRIPTION	DATE	DESIGNED	APPROVED
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
C	ISSUED FOR TENDER	12/01/2021	RG	FVDL

ORIGINAL SIZE:	A1
DRAWN:	RG
APPROVED:	FVDL
DATE:	12/01/2021
SCALE:	AS SHOWN

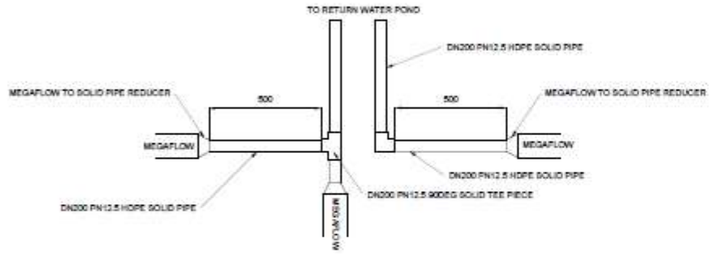
coffey

CLIENT:	GENESIS MINERALS LIMITED
PROJECT:	ULYSSES GOLD PROJECT TAILINGS STORAGE FACILITY DESIGN
TITLE:	DRAINAGE DETAILS
PROJECT NO: 754-PERGE276987	DWG NO: 754-PERGE276987 - 11
REV: C	

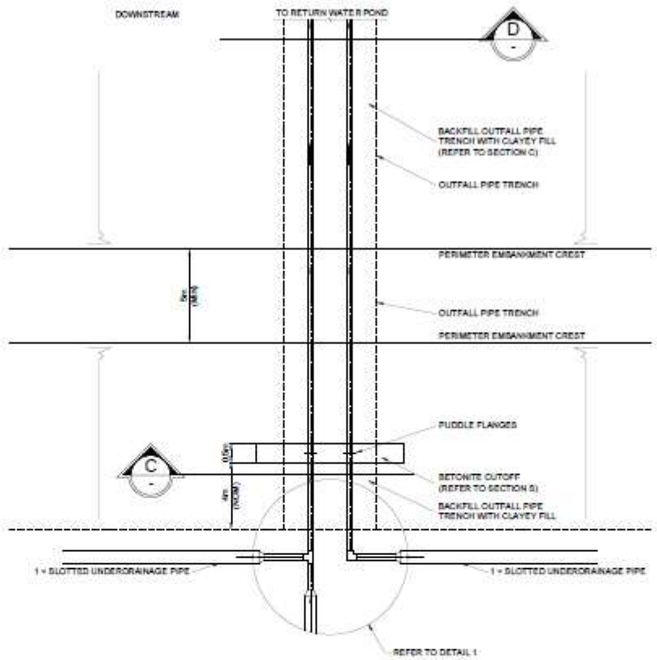
Figure 8: TSF drainage collection specifications



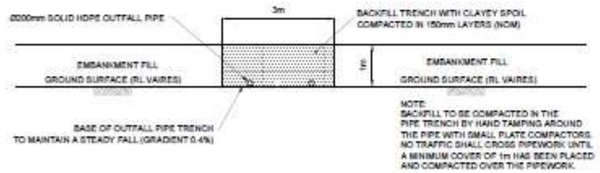
C / 12 UNDERDRAINAGE (FINGER DRAIN)
SCALE NTS



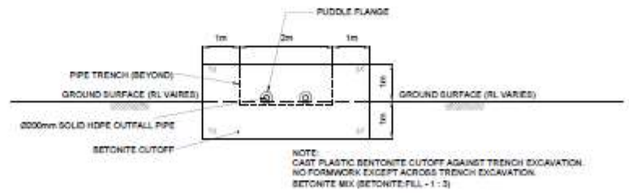
1 / - MEGAFLOW TO SOLID PIPE CONNECTION
SCALE NTS



B / 10 UNDERDRAINAGE OUTFALL PIPE
SCALE NTS (TYPICAL SECTION)



D / - OUTLET PIPE TRENCH
SCALE NTS



C / - BENTONITE CUTOFF (FOR UNDERDRAINAGE OUTFALL PIPE)
SCALE NTS

ISSUED FOR TENDER
PLOTTED: Tuesday, January 12, 2021 9:59:13 AM

REV.	REVISION DESCRIPTION	DATE	DESIGNED	APPROVED	ORIGINAL SIZE:	A1
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-	-	-	-	-	APPROVED:	FVDL
-	-	-	-	-	DATE:	12/01/2021
-	-	-	-	-	SCALE:	AS SHOWN
C	ISSUED FOR TENDER	12/01/2021	RG	FVDL		

coffey

CLIENT: GENESIS MINERALS LIMITED
PROJECT: ULYSSES GOLD PROJECT
TAILINGS STORAGE FACILITY DESIGN
TITLE: UNDERDRAINAGE DETAILS
PROJECT NO: 754-PERGE276967
DWG NO: 754-PERGE276967 - 12
REV: C

Figure 9: TSF under drainage pipework specifications

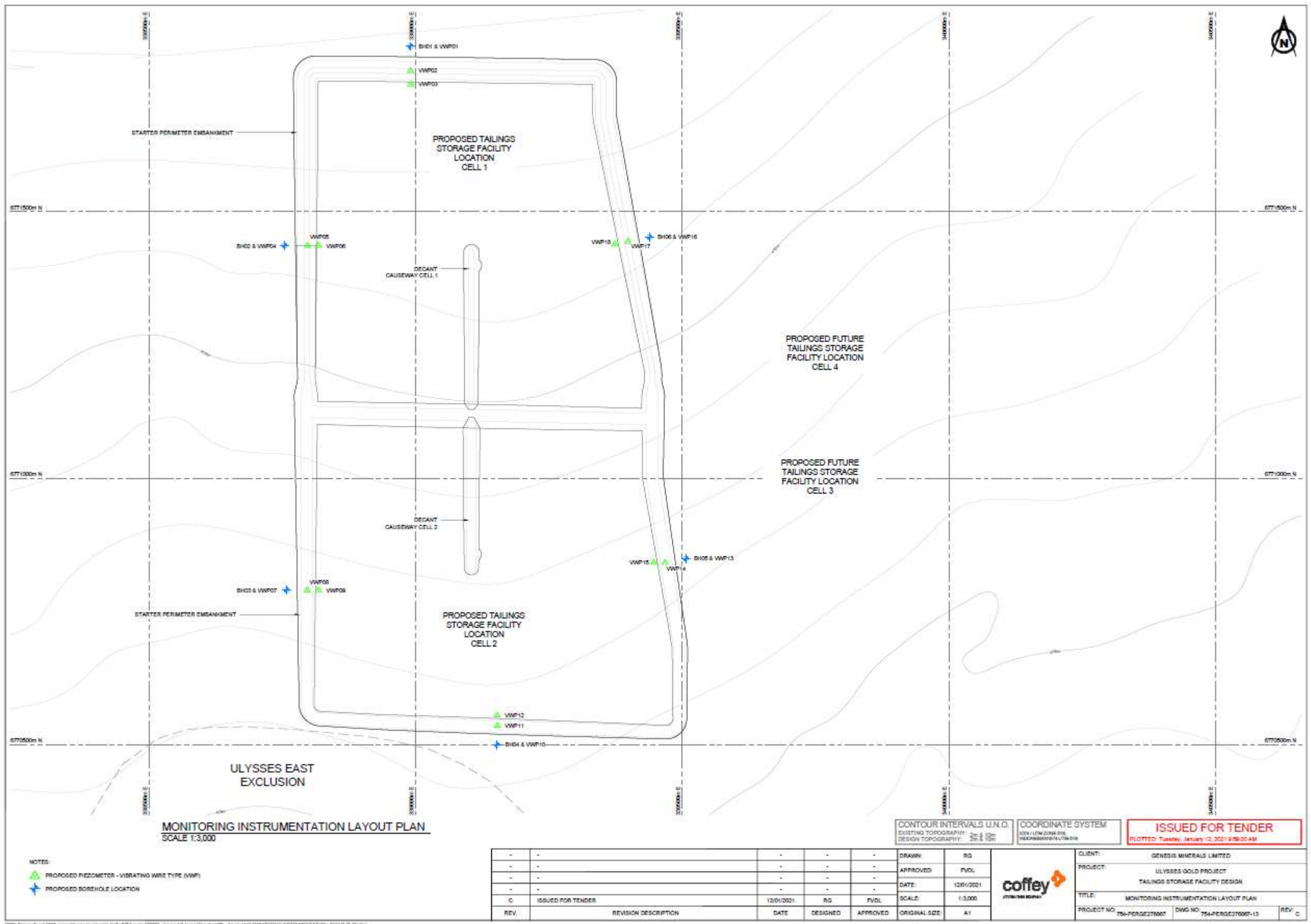

Figure 10: TSF Monitoring network

Ulysses TSF Embankment Raises Cells 1 and 2

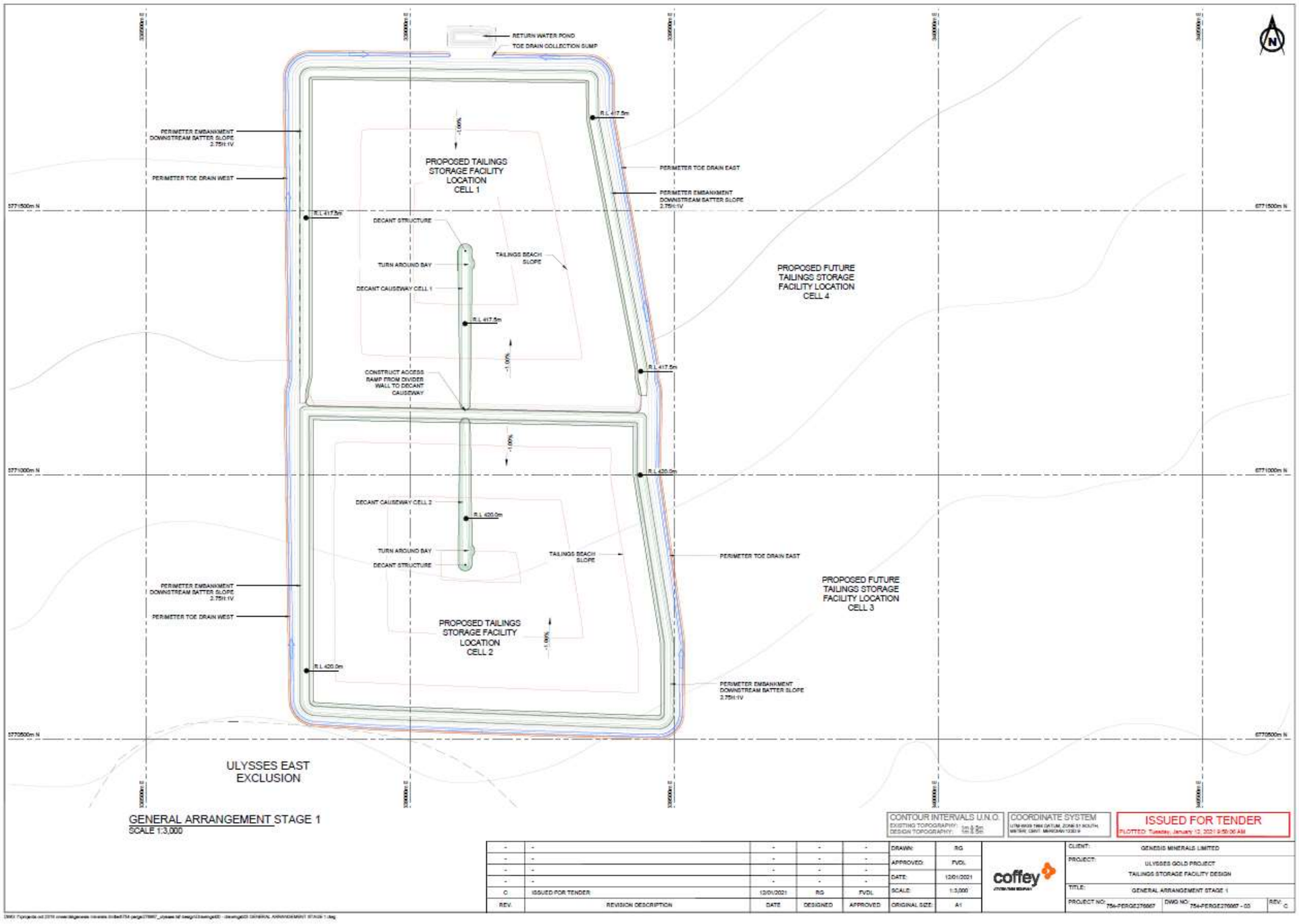

Figure 11: Cells 1 and 2 TSF Stage 1 embankment raise

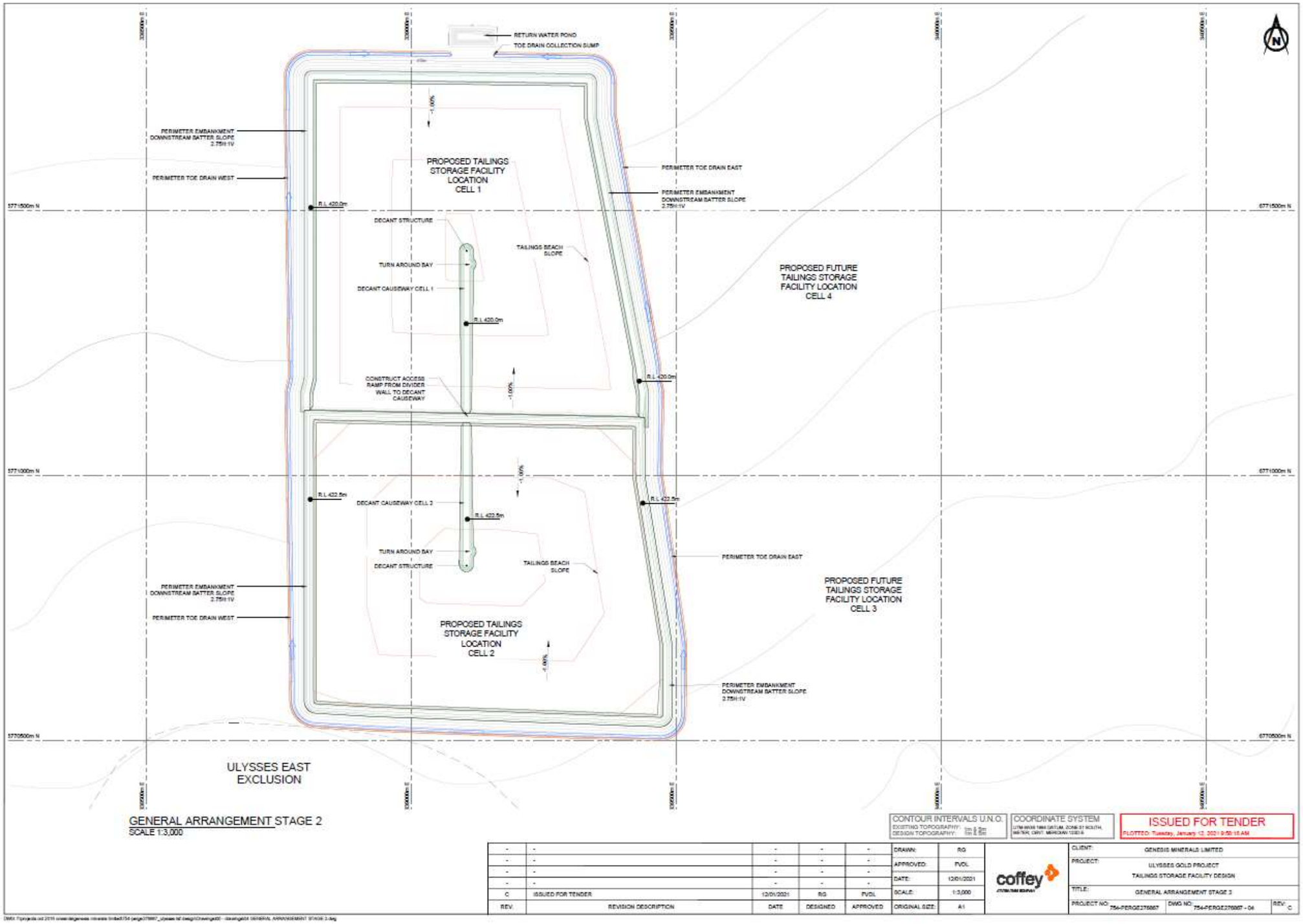

Figure 12: Cells 1 and 2 TSF Stage 2 embankment raise

WWTP and Irrigation sprayfield overview

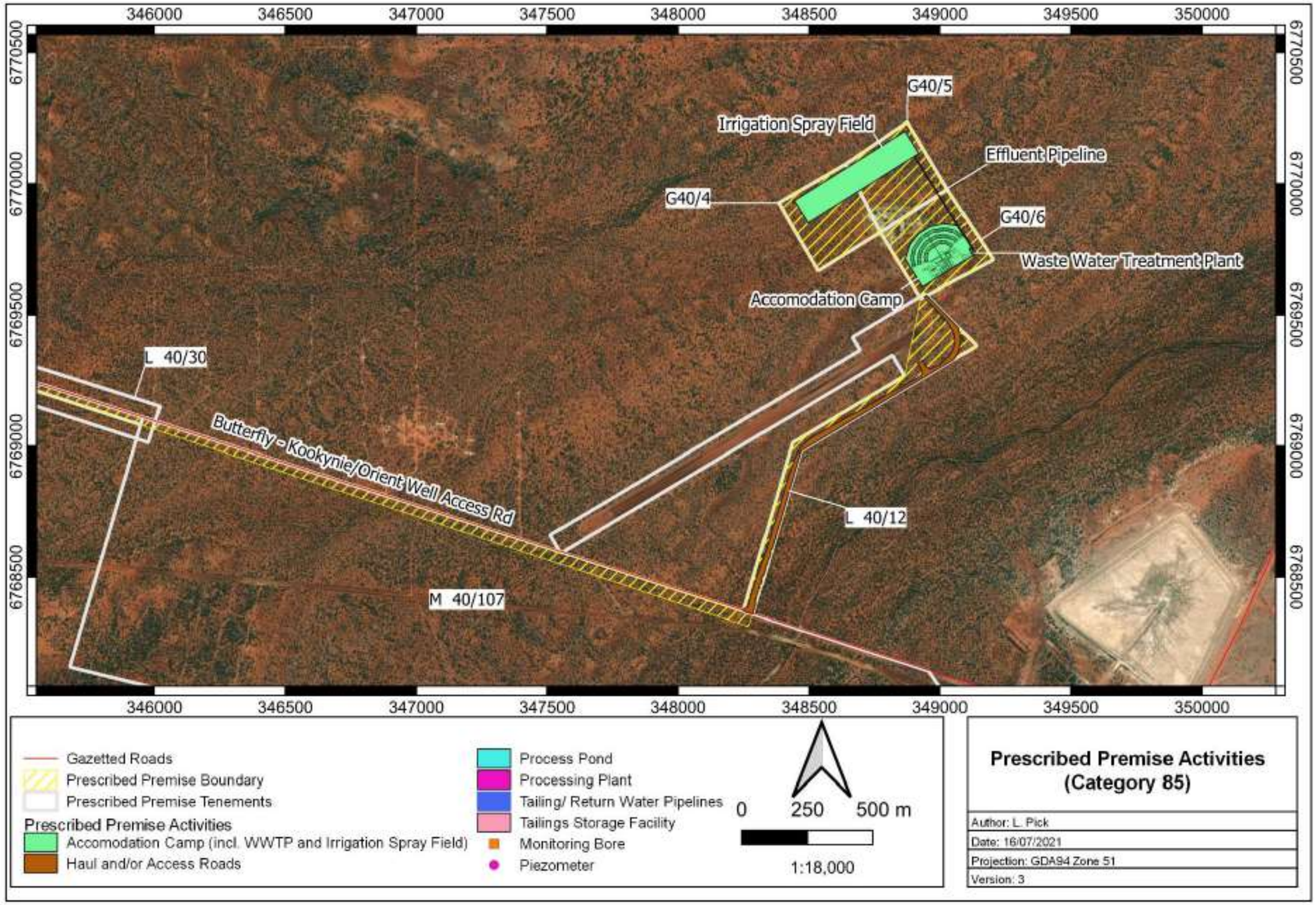

Figure 13: Overview of the WWTP and Irrigation sprayfield location

WWTP Specifications

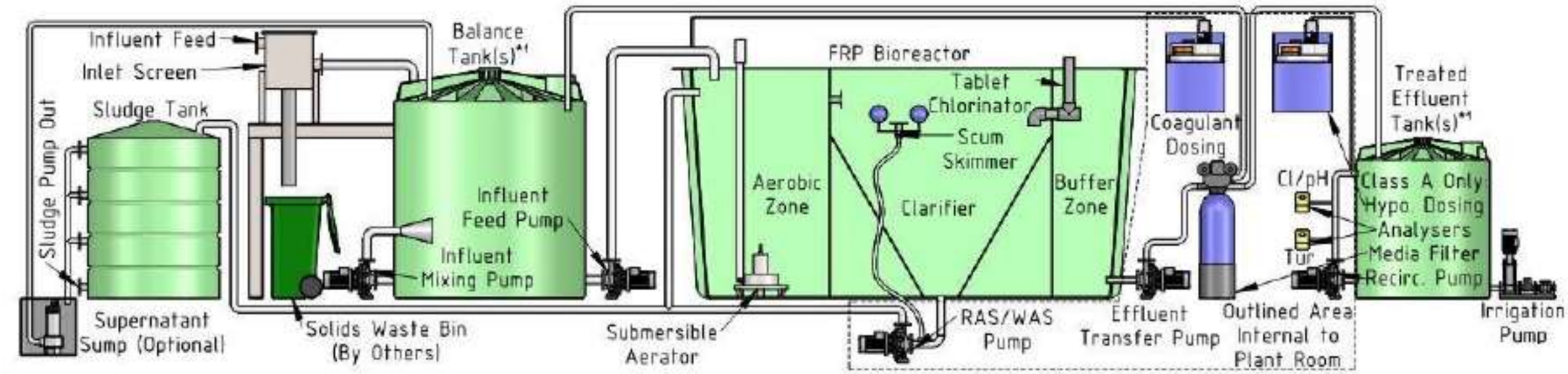

Figure 14: WWTP Components

Ulysses Gold Project pit locations

Figure 15: Locations of the 8 open pits within the Ulysses Gold Project.

Ulysses Gold Project Stage 1 and 2 of Dewatering Infrastructure

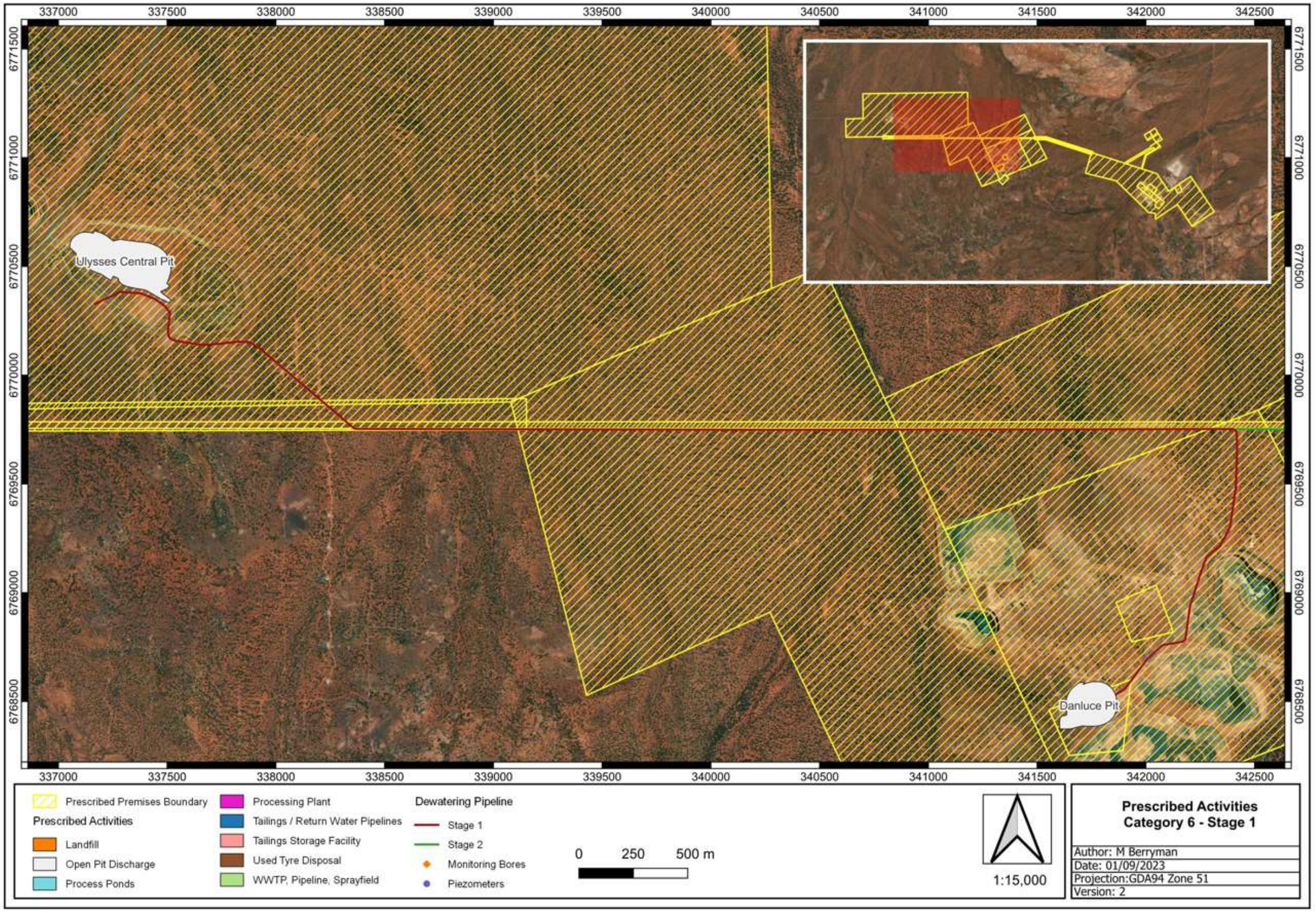

Figure 16: Dewatering infrastructure layout - Stage 1

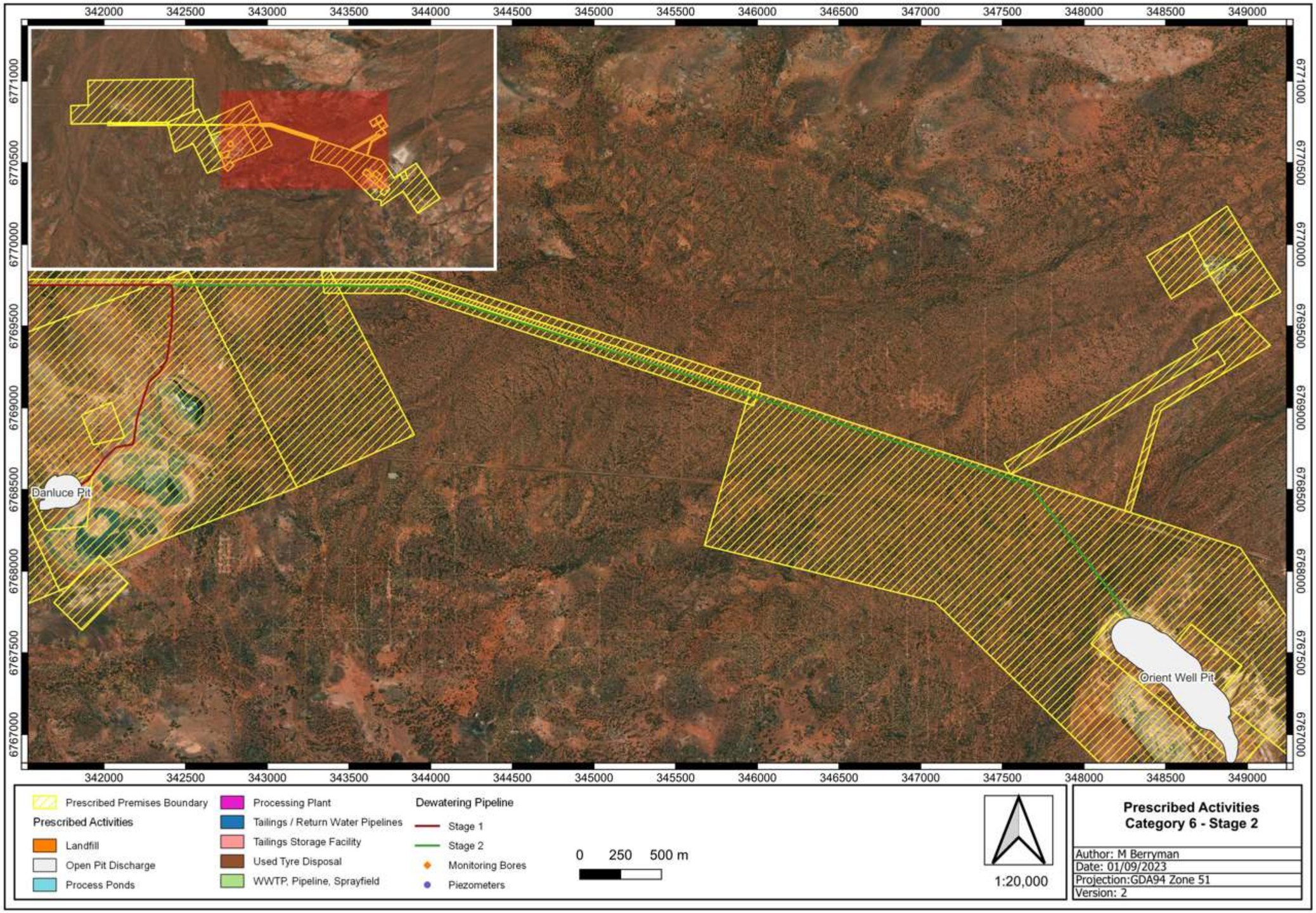

Figure 17: Dewatering infrastructure layout - Stage 2

Ulysses Gold Project disposal of waste locations

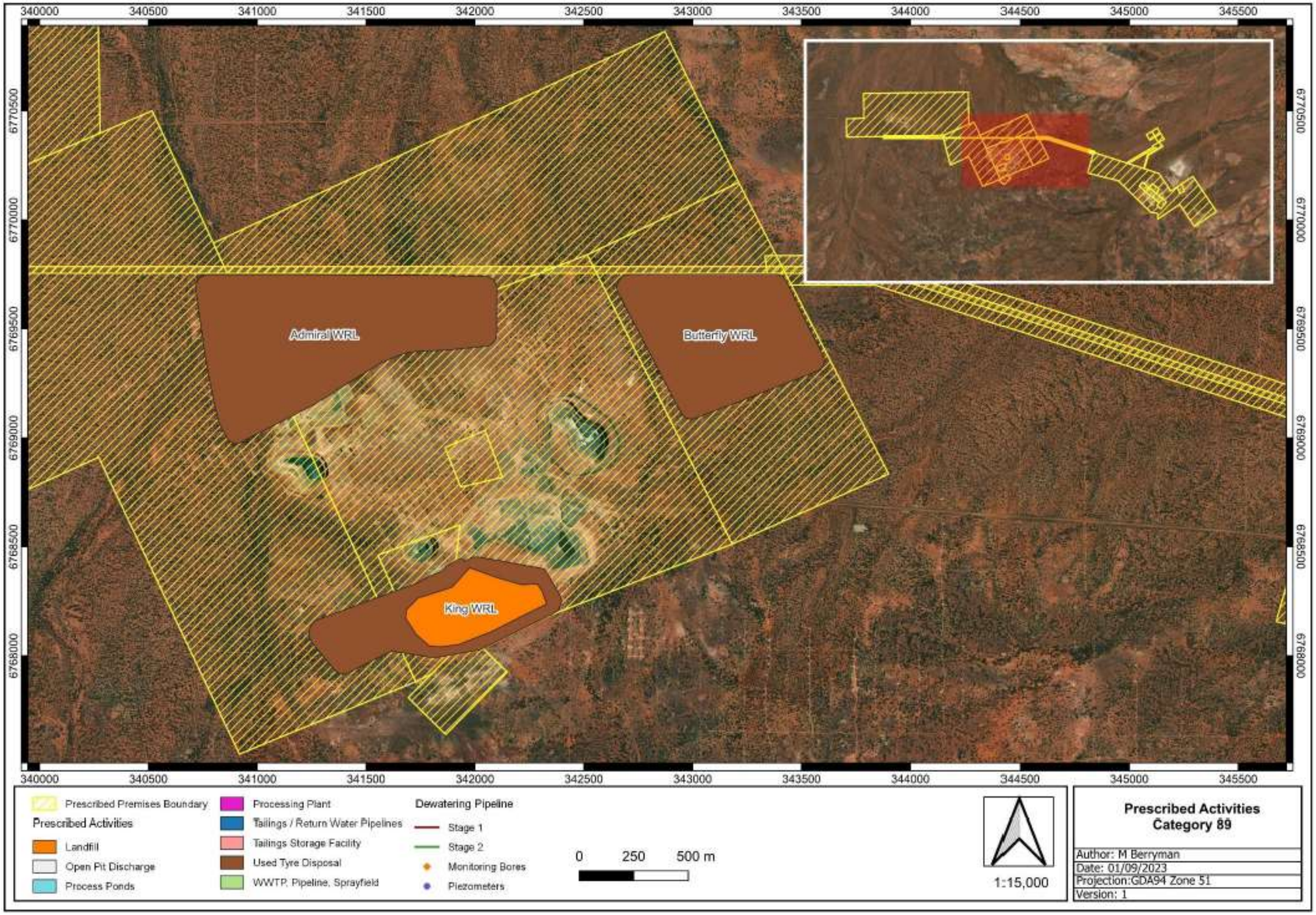

Figure 18: Location of King Waste Rock Landform landfill and tyres disposal locations.

Schedule 2: Monitoring

Quality assurance and quality control requirements

The Works Approval holder must adhere to the following field quality assurance and quality control procedures, as specified in Schedule B2 of the Assessment of Site Contamination NEPM, and must include as a minimum:

(a) decontamination procedures for the cleaning of tools and sampling equipment before sampling and between samples;

(b) field instrument calibration for instruments used on site;

(c) blind replicate samples and rinsate blanks must be collected in the field and sent to the primary laboratory to determine the precision of the field sampling and laboratory analytical program;

(d) completed field monitoring sheets / sampling logs for each sample collected, showing:

- (i) time of collection;
- (ii) location of collection;
- (iii) initials of sampler;
- (iv) sampling method;
- (v) field analysis results;
- (vi) duplicate type / location (if relevant); and
- (vii) site observations and weather conditions, and

(e) chain-of-custody documentation must be completed which details the following information:

- (i) site identification;
- (ii) the sampler;
- (iii) nature of the sample;
- (iv) collection time and date;
- (v) analyses to be performed;
- (vi) sample preservation method;
- (vii) departure time from site;
- (viii) dispatch courier(s); and
- (ix) arrival time at the laboratory.