



Works Approval Number W6209/2019/1

Works approval holder Hastings Technology Metals Limited
ACN 122 911 399
Registered business address 167 St Georges Terrace
Perth WA 6000

DWER file Number DER2019/000040

Duration 17/06/2020 to 16/06/2030

Date of issue 17/06/2020

Date of amendment 17 February 2025

Prescribed details Yangibana Rare Earths Project

Legal description - Part of Mining Tenements
G09/14, G09/18, G09/17, G09/20, G 09/26, L09/69,
L09/93 L09/95, M09/157, M09/158, M09/161, M
09/176, M09/162, M09/178
WEST LYONS RIVER WA 6705

Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations 1987</i>)	Assessed design capacity
Category 5: Process or beneficiation of metallic or non-metallic ore	1,100,000 tonnes per annual period
Category 6: Mine dewatering	60,000 tonnes per annual period
Category 64: Class II or III putrescible landfill site	3,487 tonnes per annual period

This amended works approval is granted to the Works Approval Holder, subject to the attached conditions, on 17 February 2025 by:

MANAGER, PROCESS INDUSTRIES

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Works approval history

Date	Reference	Summary of changes
17/06/2020	W6209/2019/1	Works approval granted
10/06/2022	W6209/2019/1	Works approval amended to: <ul style="list-style-type: none"> • Change location of Category 5 and 85 infrastructure; • Remove construction of Hydrometallurgical Plant and associated infrastructure (i.e. acid bake kiln); • Remove time limited operation of TSFs; and • Remove Category 52 and 73 from works approval.
7/11/2023	W6209/2019/1	Works approval amended to: <ul style="list-style-type: none"> • Include additional tenements M09/162, M09/178 and G09/26 (proposed landfill site) and M09/176 (to includes a portion of the expanded Run-of-Mine pad) to the prescribed premises boundary; and • Approve an additional location of for a landfill (Category 64), located within tenement G 09/26.
17/02/2025	W6209/2019/1	Works approval amended to: <ul style="list-style-type: none"> • Include addition tenements L09/69, L09/93 and L09/95 to prescribed premises boundary (to match the existing boundary for associated licence L9336/2022/1); • Removal of category 85; • Changes to design for: <ul style="list-style-type: none"> ○ Beneficiation TSF; and ○ Stormwater management infrastructure at processing plant; • Authorisation for commissioning phase for the category 5 and category 6; • Authorisation for time-limited operations phase for the Beneficiation TSF; and • Extend duration of the works approval.

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	Design and construction / installation requirement	Infrastructure location
1	Ore processing facility: <ul style="list-style-type: none"> • ROM pad • Beneficiation circuit • Chemical storage area 	<ol style="list-style-type: none"> (a) Equipment and chemicals located over bunded concrete slabs for the containment of spillage; (b) Tanks containing process slurries and/or liquors are located within concrete bunds sized to capture 110% of the volume of the largest tank; (c) Stormwater runoff directed to sedimentation pond designed for runoff from a 5-day, 85th percentile rainfall (rainfall event of 23.5mm) event without discharge; (d) Sprinkler system fitted to ROM infrastructure for dust suppression; (e) Plant stormwater infrastructure of diversion drains and sedimentation ponds to ensure uncontaminated stormwater is diverted away from the facility; (f) Process chemicals stored in tanks, IBCs or silos, with appropriate bunding; and (g) Pipeline transferring chemicals from storage areas to process plant will have spill management bunds and sumps, if outside of process plant's bunded area. 	<p>Bunded compounds as indicated by yellow shaded areas and proposed basins as indicated by purple shaded areas in Figure 3, Schedule 1.</p> <p>Sedimentation pond as shown in Figure 3. Schedule 1.</p>
2	Putrescible and inert landfill bunkers	<ol style="list-style-type: none"> (a) Putrescible waste landfill bunker and inert waste landfill bunker at each authorised landfill location as shown within the 'Premises Map' in Schedule 1; (b) Bunkers to be nominally 50 m long, 10 m wide and 2 m deep; (c) Bunkers are to incorporate an approximate 2 percent slope to the rear to retain stormwater collected within bunkers; and (d) Bunkers are to include perimeter stormwater diversion drainage. 	<p>Refer to indicative locations in 'Premises Map' Figure 1 in Schedule 1.</p>

Item	Infrastructure	Design and construction / installation requirement	Infrastructure location
3	Discharge of dewater from Fraser Pit and Bald Hill Pit	<ul style="list-style-type: none"> (a) Frasers Pit and Bald Hill Turkey Nests lined with HDPE; (b) Controlled overflow discharge pipe from each of the Frasers Pit and Bald Hill Turkey Nests to convey water to the nearest drainage line; (c) Dewatering pipelines to: <ul style="list-style-type: none"> (i) be constructed with HDPE; (ii) be designed to accommodate pressure of expected flow; (iii) include manual shut-off valves; (d) A spreader pipe from the discharge point to manage flow and reduce inundation downstream of the discharge point; and (e) Rock pitching at the discharge point to disperse kinetic energy and protect bed and banks adjacent to the discharge point. 	Authorised discharge locations as per 'Map of dewater discharge points', Figure 10 in Schedule 1.

Critical containment infrastructure

2. The works approval holder must:
- (a) construct the critical containment infrastructure;
 - (b) in accordance with the corresponding design and construction; and
 - (c) at the corresponding infrastructure location,
- as set out in Table 2 and Table 3

Table 2: Beneficiation TSF Critical containment infrastructure design and construction requirements

Item	Criteria	Design and construction requirements	Infrastructure location
1	General	<ul style="list-style-type: none"> (a) 86 hectare area with design for maximum volume of 6.5 Mm³ (approximately 9.745 Mt solids); and (b) Paddock style facility with perimeter discharge via spigots. 	TSF location as shown in Figure 7 and Map of TSF groundwater and piezometer monitoring locations, Figure 6 in Schedule 1.
	Starter embankment	<ul style="list-style-type: none"> (a) Maximum embankment height authorised to 335 m RL; and (b) Constructed as per the design specifications in Figure 11 and Figure 12 in Schedule 1. 	
	Stormwater and freeboard controls	<ul style="list-style-type: none"> (a) Stormwater storage capacity equivalent to a 1:5 wet season plus 1:100 AEP, 72 hour flood; (b) A spillway for a 1:100,000 AEP, critical flood plus 1:10 AEP wave run-up or PMF; (c) Level gauge boards and/or automated level sensors for monitoring water levels; and (d) Decant pumping system and decant (return water) pipeline to the ore processing facility. 	

Item	Criteria	Design and construction requirements	Infrastructure location
	Seepage controls	<p>(a) Liner of thickness up to 300 mm of clayey in-situ soils at the base of the pond impoundment area that are proof compacted during construction to achieve a hydraulic conductivity of $<1 \times 10^{-8}$ m/s.</p> <p>(b) Contingency measures incorporated into the as constructed TSF are to include:</p> <ul style="list-style-type: none"> (i) treatments of any identified preferential seepage paths between the TSF and downstream receptors using barrier systems such as cement grouting or cut-off walls; (ii) seepage interception systems such as trenches or recovery bores; and (iii) geosynthetic lining of collection drains within the final TSF landform to further reduce long term seepage rates. <p>(c) seepage sumps to be constructed with a low permeability material.</p>	
2	Tailings and return water pipelines	<p>(a) Pipelines are to be constructed of HDPE;</p> <p>(b) With the exception of pipeline sections that traverse a waterway, pipelines are to be installed in banded corridors that direct spillage to low point spillage containment ponds or into a TSF;</p> <p>(c) Pipeline corridor spillage containment points are to be designed for 12 hours of maximum flow from the largest pipe;</p> <p>(d) Sections of pipelines that traverse a waterway are to be double sleeved and installed on an elevated pipe bridge; and</p> <p>(e) Pipelines are to be fitted with a continuously monitored pressure alarm system that activate an alarm system and automated tail pumping system shutdown in the event of pressure drop detection.</p>	Pipeline routes as shown in Figure 7 in Schedule 1.
3	Stage 2 Embankment Raise	<p>(a) Maximum embankment height authorised to 338 m RL; and</p> <p>(b) Constructed as per design specifications shown in Figure 13 in Schedule 1.</p>	TSF location as shown in Figure 7.

Table 3: Hydromet TSF Critical containment infrastructure design and construction requirements

Criteria	Design and construction requirements	Infrastructure location
General	<p>(a) 36 hectare area with design for maximum volume 1.9 Mm³ (approximately 0.72 Mt solids); and</p> <p>(b) Paddock style facility with decant pond, decant tower and single point discharge.</p>	TSF location and TSF pipeline route and stormwater diversion shown in Figure 7 in Schedule 1.
Stormwater and freeboard controls	<p>(a) Stormwater storage capacity equivalent to a 1:5 wet season plus 1:100 AEP, 72 hour flood;</p> <p>(b) Additional freeboard equivalent to a 1:10 AEP wind run-up plus 0.3 m;</p> <p>(c) A spillway for a 1:100,000 AEP, critical flood plus 1:10 AEP wave</p>	

Criteria	Design and construction requirements	Infrastructure location
	run-up or PMF; and (d) Installation of level gauge boards and/or automated level sensors for monitoring water levels.	
Seepage controls	(a) Geocomposite lining system to achieve a hydraulic conductivity of 10^{-9} m/s or less comprising: (i) Minimum 300 mm thick compacted clay liner below a HDPE liner; (ii) Minimum 1.5 mm thickness HDPE liner; (iii) Installation to follow QA/QC procedures; (iv) Electrical leak location survey to be completed post installation; and (v) Any holes or defects identified in the leak location survey to be repaired. (b) Underdrainage collection in the valley of the TSF installed above HDPE liner.	

Compliance reporting – infrastructure and equipment

3. The works approval holder must within 60 calendar days of each item of infrastructure and/or equipment required 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 an Environmental Compliance Report on that compliance.
4. The Environmental Compliance Report required by condition 3, must include as a minimum the following:
 - (a) certification that the items of infrastructure or component(s) thereof, as specified in condition 1, have or have not been constructed and/or installed in accordance with the relevant requirements specified in condition 1;
 - (b) as constructed plans and a detailed site plan for each item of infrastructure or component of infrastructure specified in condition 1; and
 - (c) be signed by a person authorised to represent the Works Approval Holder and contains the printed name and position of that person.
5. Where an item of infrastructure has been certified as not being located or constructed, or does not comply with the corresponding requirements, the works approval holder must correct the non-compliant or defective works, prior to re-certifying, or provide to the CEO a description of, and explanation for, any departures from the requirements specified in condition 1 that do not require relocation or rectification and do not constitute a material defect along with the Environmental Compliance Report.

Compliance reporting – critical containment infrastructure

6. The works approval holder must within 60 calendar days of the critical containment infrastructure identified by condition 2 being constructed:
 - (a) undertake an audit of their compliance with the requirements of condition 2; and

- (b) prepare and submit to the CEO a Critical Containment Infrastructure Report on that compliance.
- 7.** The Critical Containment Infrastructure Report required by condition 6 must include as a minimum the following:
- (a) certification by the Tailings Design Engineer of Record or their delegate that each item of critical containment infrastructure or component thereof, as specified in condition 2 has been built and installed in accordance with the requirements specified in condition 2;
 - (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 2; and
 - (c) be signed by a person authorised to represent the Works Approval Holder and contains the printed name and position of that person within the company.
- 8.** Where an item of infrastructure has been certified as not being located or constructed, or does not comply with the corresponding requirements, the works approval holder must correct the non-compliant or defective works, prior to re-certifying, or provide to the CEO a description of, and explanation for, any departures from the requirements specified in condition 2 that do not require relocation or rectification and do not constitute a material defect along with the Critical Containment Infrastructure Report.

Commissioning phase

Commencement and duration

- 9.** The works approval holder may only commence environmental commissioning of an item of infrastructure identified in condition 11 once the Environmental Compliance Report has been submitted for that item of infrastructure in accordance with condition 3 of this works approval.
- 10.** The works approval holder may only commence environmental commissioning of an item of critical containment infrastructure identified in condition 11 where:
- (a) the CEO has notified the works approval holder that the Critical Containment Infrastructure Report for that item of infrastructure as required by condition 6 and condition 7 meets the requirements of those conditions; or
 - (b) at least 45 business days have passed after the Critical Containment Infrastructure Report for that item of infrastructure as required by condition 6 and condition 7 has been submitted to the CEO; and
 - (c) if more than 12 months have passed between the construction of an item of infrastructure and the commencement of commissioning, the works approval holder must ensure that the constructed infrastructure has remained fit for purpose.
- 11.** The works approval holder must ensure that any environmental commissioning activities undertaken for an item of infrastructure specified in Table 4 are only conducted:
- (a) in accordance with the corresponding commissioning requirements; and
 - (b) for the corresponding authorised commissioning duration.
- of Table 4.

Table 4: Environmental commissioning requirements

	Infrastructure	Commissioning requirements	Authorised commissioning duration
1.	Ore processing facility	a) ROM pad dust to be managed using water carts and sprinklers; b) Spills contained within the concrete bunded area to be recycled back into process system; c) Uncontaminated stormwater to be diverted away from the facility; and d) Uncontaminated stormwater to be collected in sedimentation ponds.	365 days
2.	Beneficiation TSF	a) Maintain freeboard to limit specified in Table 2; b) Daily inspections of freeboard; c) Daily inspection to record any visible seepage (e.g. through embankment or loss of containment); d) Daily inspection of delivery and return pipelines to ensure integrity; e) Daily inspection of seepage collection sumps to ensure: <ul style="list-style-type: none"> (i) adequate capacity; and (ii) operation of the mobile pumping equipment; and f) Operate decant pond as small as possible and centrally located.	24 months
3.	Mine dewater	a) Mine dewater prioritised to be used for dust suppression or re-use at processing facility; and b) Any surplus mine dewater used for dust suppression must be applied in a manner that does not impact vegetation.	270 days

12. The works approval holder must complete and record daily observations of fauna accessing the TSF during the TSF commissioning and time limited operations period. Observations must be recorded by personnel trained in identifying wildlife species.

Compliance reporting

13. The works approval holder must submit to the CEO an Environmental Commissioning Report within 30 calendar days of the completion date of the environmental commissioning for each item of infrastructure specified in Table 4.
14. The works approval holder must ensure the Environmental Commissioning Report required by condition 13 of this works approval includes the following:
- (a) a summary of the environmental commissioning activities undertaken, including timeframes and amount of ore processed and tailings deposited;
 - (b) a summary of the environmental performance of each item of infrastructure or equipment as constructed or installed (as applicable);
 - (c) a review of the works approval holder's performance and compliance against the conditions of the works approval;
 - (d) where requirements 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;
and

- (e) records of daily observations of fauna accessing the TSFs as required by condition 12.

Time limited operations phase

Commencement and duration

- 15. The works approval holder may only commence time limited operations for an item of infrastructure identified in condition 17:
 - (a) where the item of infrastructure is authorised to undertake environmental commissioning under condition 11, the Environmental Commissioning Report for that item of infrastructure as required by condition 13 has been submitted by the works approval holder.
- 16. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 17:
 - (a) for a period not exceeding 180 calendar days from the day the Works Approval Holder meets the requirements of condition 15 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 16(a).

Time limited operations requirements and emission limits

- 17. During time limited operations, the works approval holder must ensure that the premises infrastructure and equipment listed in Table 5 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirements set out in Table 5.

Table 5: Infrastructure and equipment requirements during time limited operations

	Site infrastructure and equipment	Operational requirements	Infrastructure location
1.	Ore processing facility	a) ROM pad dust to be managed using water carts and sprinklers; b) Spills contained within the concrete bunded area to be recycled back into process system; c) Uncontaminated stormwater to be diverted away from the facility; and d) Uncontaminated stormwater to be collected in sedimentation ponds.	As shown in Figure 2.
2.	Beneficiation TSF	a) Maintain freeboard to limit specified in Table 2; b) Daily inspections of freeboard; c) Daily inspection to record any visible seepage (e.g. through embankment or loss of containment); d) Daily inspection of delivery and return pipelines to ensure integrity; e) Daily inspection of seepage collection sumps to ensure: (i) adequate capacity; and (ii) operation of the mobile pumping equipment; f) Operate decant pond as small as possible and as centrally located; and g) Maximum total deposition into facility is 10 Mt of tailings;	As shown in Figure 7.
3.	Dewatering pipeline and turkey's nest	a) mine dewater prioritised to be used for dust suppression or re-use at processing facility; and b) any surplus mine dewater used for dust suppression must be applied in a manner that does not impact vegetation.	As shown in Figure 10.

18. During time limited operations, the works approval holder must ensure that the emissions specified in Table 6 are discharged only from the corresponding discharge point and only at the corresponding discharge point location.

Table 6: Authorised discharged points

Emission	Discharge point	Discharge point location as shown in relevant map in Schedule 1
Fraser Pit dewater	Fraser's Pit turkeys nest discharge pipe	Map of dewater discharge points (as shown in Figure 10)
Bald Hill Pit dewater	Bald Hill turkeys nest discharge pipe	

Monitoring during time limited operations

19. During time limited operations, the works approval holder must undertake and record an individual monthly water balance for the Beneficiation TSF, considering:

- (a) the volume of tailings deposited to the TSF;
- (b) evaporation;
- (c) rainfall; and
- (d) tailings decant return

to derive a seepage loss volume.

20. The works approval holder must monitor groundwater and surface water quality during time limited operations for concentrations of the identified parameters in accordance with Table 11 and Table 12 in Schedule 3; and ensure that all

laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured, unless indicated otherwise in the relevant table.

21. During time limited operation, the works approval holder must monitor discharges:
- (a) at the corresponding monitoring location;
 - (b) for the corresponding parameters;
 - (c) in the corresponding unit; and
 - (d) at no less than the corresponding frequency
- as set out in Table 7.

Table 7: Monitoring of emissions and discharges during time limited operation

Monitoring point reference	Monitoring location	Parameter	Unit	Frequency	Method
Beneficiation TSF decant pond	From TSF decant causeway (as shown in Figure 11)	Molybdenum	mg/L	Monthly during time limited operation of Beneficiation TSF Starter embankment.	AS/NZS 5667.1
		Soluble fluoride			
		<u>REEs</u> Yttrium Lanthanum Cerium Praseodymium Neodymium Samarium Gadolinium Dysprosium			

22. During time limited operations, the works approval holder must collect 10 individual representative tailings samples, including pore water, to determine the likely behaviour of elements under a range of leaching conditions, including but not limited to:
- (a) testing using the LEAF test Method 1313 pH-dependent leaching test (US EPA, 2017); and
 - (b) testing for contaminants listed Table 8.

Table 8: Tailings characterisation parameters

Stream	Parameters	Unit
Tailings leachate	Aluminium, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Caesium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Manganese, Mercury, Molybdenum, Nickel, Niobium, Rubidium, Selenium, Silver, Strontium, Tantalum, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Zinc, Calcium, Potassium, Magnesium and Sodium	mg/L
	Yttrium, Lanthanum, Cerium, Praseodymium, Neodymium, Samarium, Gadolinium and Dysprosium	
	Total dissolved solids	
	pH	pH units

23. The works approval holder must complete a whole of site GoldSim water balance using data obtained during TSF time limited operations to confirm assumptions of

the preliminary water balance (as described in the Application document¹).

- 24.** The works approval holder must conduct a desktop assessment of potential impacts to fauna from exposure to both TSFs which must:
- (a) be completed by an ecologist or an equivalent qualified professional with experience in assessing wildlife ecotoxicological impacts from mine waste storages;
 - (b) take into consideration fauna observation monitoring conducted during commissioning and time-limited operations as required by condition 12;
 - (c) propose additional controls, such as a fauna management plan, if the desktop assessment indicates that there are potential impacts to fauna from the operation of either TSF; and
 - (d) prepare a report outlining the assessment undertaken and any controls proposed to manage fauna exposure (if relevant).

Compliance reporting

- 25.** 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.
- 26.** The works approval holder must ensure the report required by condition 25 includes the following:
- (a) a summary of the time limited operations, including timeframes and amount of ore processed
 - (b) a summary of the monitoring results obtained during the time limited operations under conditions 19, 20, 21 and 22;
 - (c) The water balance required by condition 23;
 - (d) The fauna assessment report required by condition 24;
 - (e) records of daily observations of fauna accessing the TSFs as required by condition 12;
 - (f) a review of performance and compliance against the conditions of the works approval; and
 - (g) where the manufacturers design specifications and the conditions of this works approval have not been met, the measures the works approval holder will take to meet them, and the timeframes required to implement those measures.

Records and reporting (general)

- 27.** 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;

¹ Hastings Technology Metals Limited 2019, *Yangibana Rare Earths Project, TSF Design Development – Preliminary Design Report*, doc no: YGB-31-100-ENG-CIV-REP-0001.

- (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
- 28.** 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 and 2 of this works approval;
 - (b) any maintenance of infrastructure that is performed in the course of complying with the conditions of this works approval;
 - (c) monitoring programmes undertaken in accordance with conditions, 12, 19, 20, 21 and 22 of this works approval; and
 - (d) complaints received under condition 27 of this works approval.
- 29.** The books specified under condition 28 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 9 have the meanings defined.

Table 9: Definitions

Term	Definition
AEP	Annual Exceedance Probability
AS 4323.1	means Australian Standard AS 4323.1 <i>Stationary source emissions: selection of sampling positions</i> .
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 <i>Water Quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples</i> .
AS/NZS 5667.6	means the Australian Standard AS/NZS 5667.6 <i>Water Quality – Sampling – Guidance on the sampling of rivers and streams</i> .
AS/NZS 5667.10	means the Australian Standard AS/NZS 5667.10 <i>Water Quality – Sampling – Guidance on the sampling of waste waters</i> .
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 <i>Water quality - sampling - guidance on sampling groundwater</i> .
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 <i>Environmental Protection Act 1986</i> Locked Bag 10 Joondalup DC WA 6919 info@dwer.wa.gov.au
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> 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.
critical containment infrastructure	means the infrastructure critical to operations as listed in Table 2 and Table 3.
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.
DER (2014)	Means the DER (2014) <i>Assessment and Management of Contaminated Sites</i> , Department of Environment Regulation, Perth, December 2014.
Environmental Compliance Report	means a report to satisfy the CEO that works have been constructed in accordance with the works approval.
EP Act	means the <i>Environmental Protection Act 1986</i> (WA).
EP Regulations	means the <i>Environmental Protection Regulations 1987</i> (WA).
HDPE	High density polyethylene
IBC	Intermediate bulk container
NATA	National Association of Testing Authorities, Australia

Term	Definition
premises	refers to the premises to which this Works Approval applies, as specified at the front of this Works Approval and as shown on the map in Schedule 1 to this Works Approval.
prescribed premises	has the same meaning given to that term under the EP Act.
PMF	Probable Maximum Flood
REEs	Rare earth elements
Tailings Design Engineer	means a person who: (a) holds a relevant tertiary academic qualification; and (b) has a minimum of five years of experience working in the area / field of design engineering and certification of TSFs
time limited operations	refers to the limited operation of the primary activities described in Schedule 2 of this works approval, at locations shown in Schedule 1 of this works approval, subject to the conditions, whilst a licence application is being assessed.
TSF	Tailings Storage Facility
waste	has the same meaning given to that term under the EP Act.
works	refers to the works described in Schedule 2, at the locations shown in Schedule 1 of this Works Approval to be carried out at the premises, subject to the conditions.
works approval	refers to this document, which evidences the grant of the Works Approval by the CEO under s.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.

Schedule 1: Maps

Premises map

The Prescribed Premises boundary is shown in the map below in yellow.

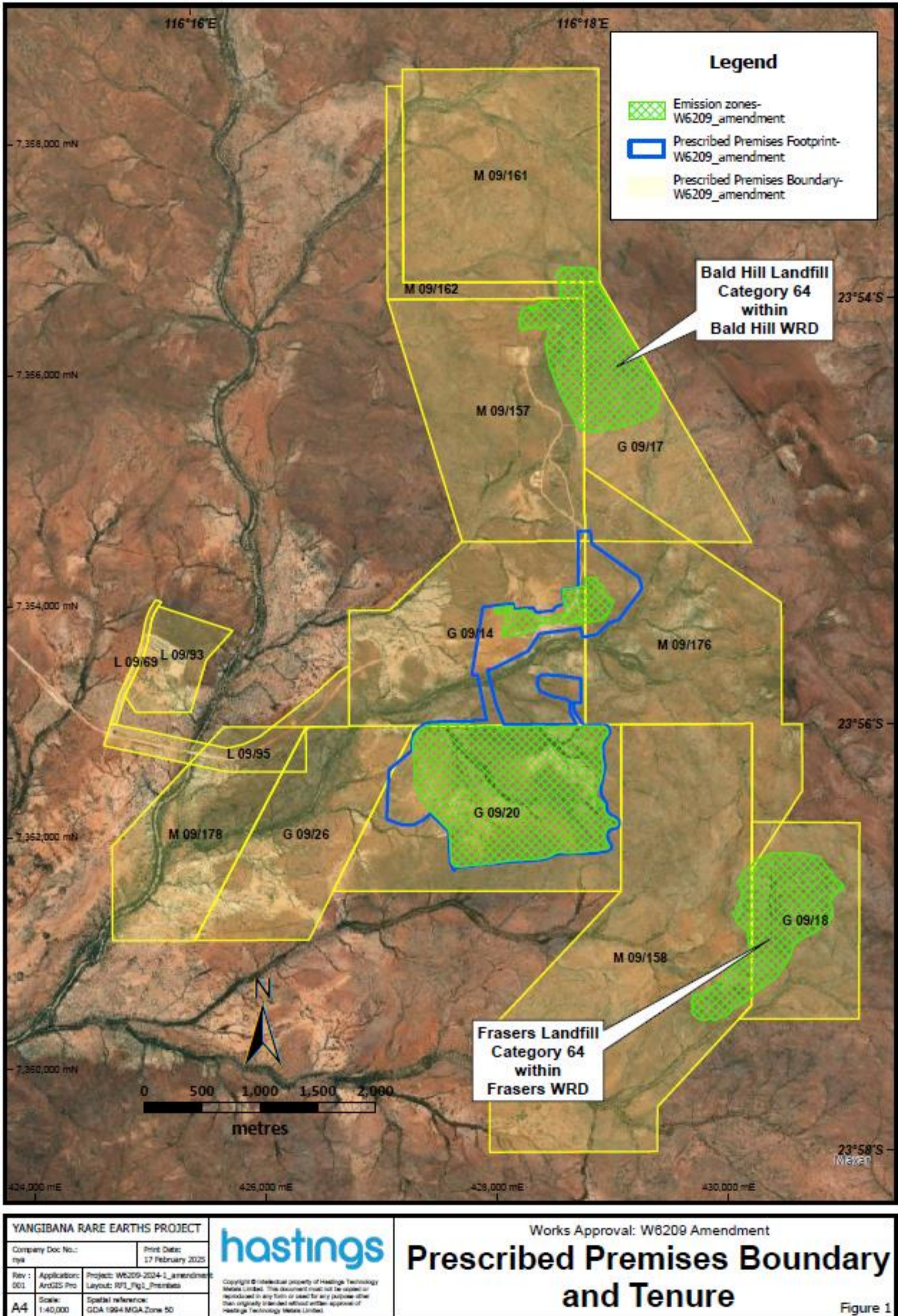


Figure 1: Prescribed premises boundary

Processing Plant Site Layout

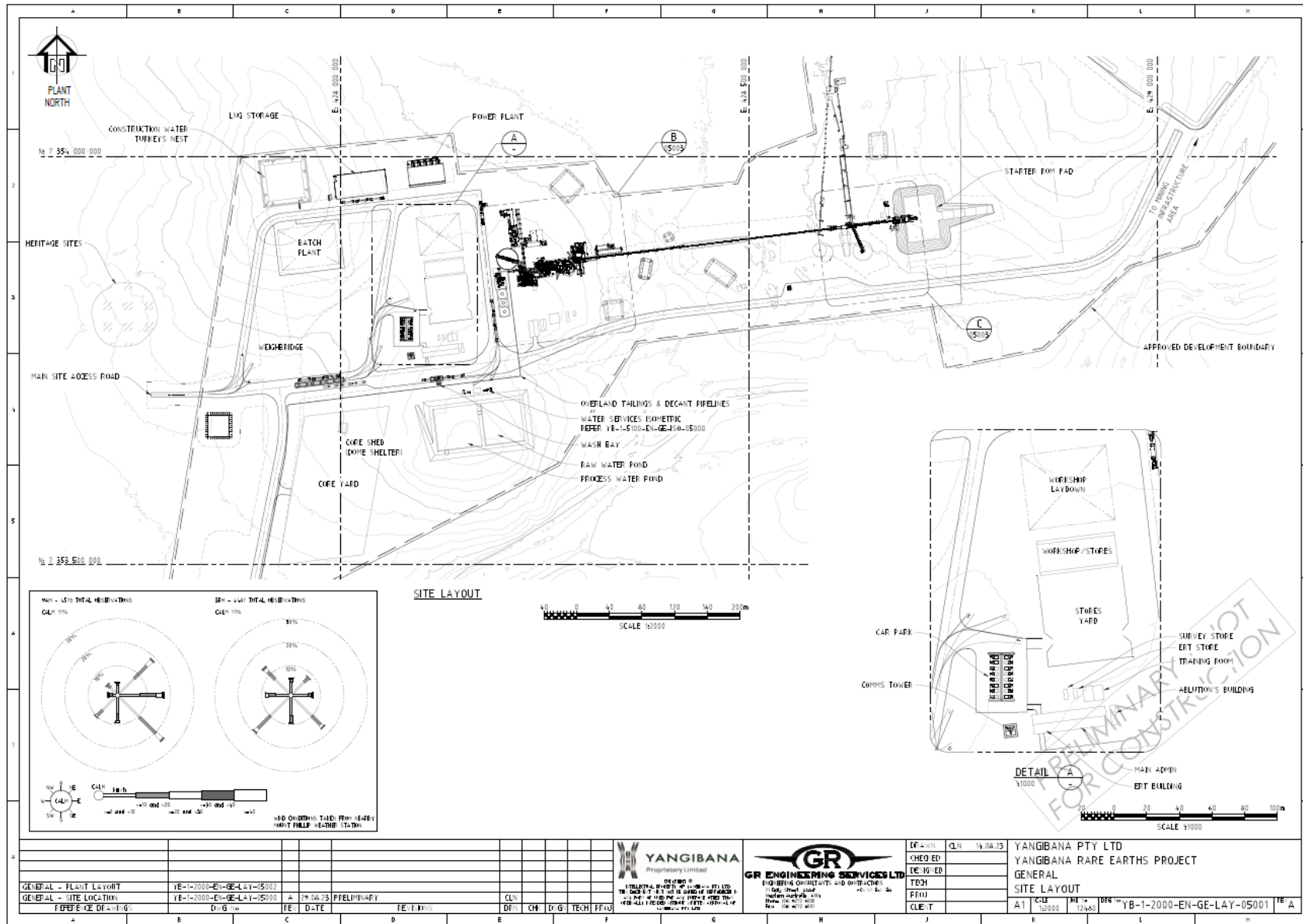


Figure 2: Processing plant site layout

W6209/2019/1 (Date of amendment: 17/02/2025)

Ore Processing Plant Stormwater Drainage Infrastructure Map

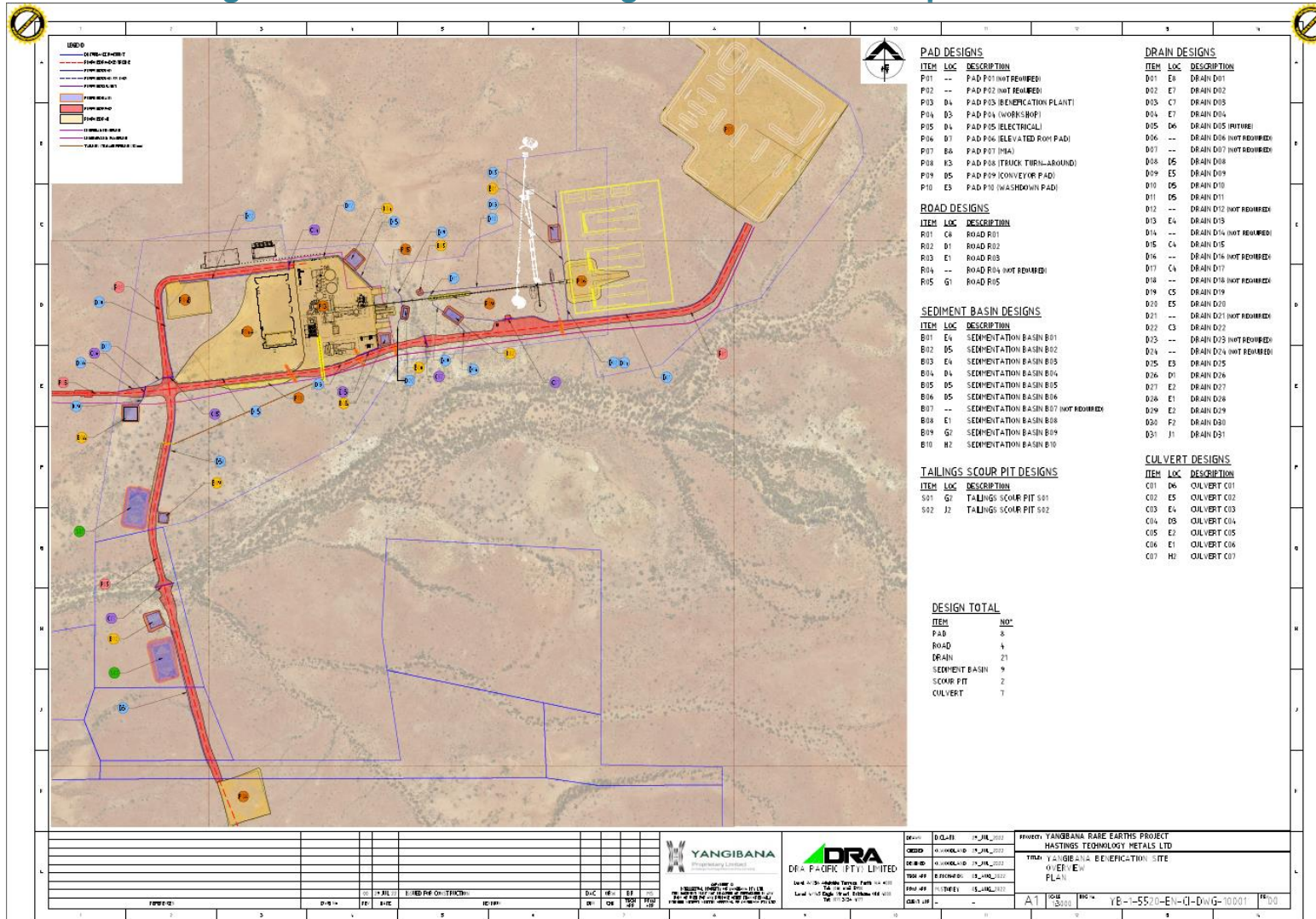


Figure 3: Processing plant surface water management

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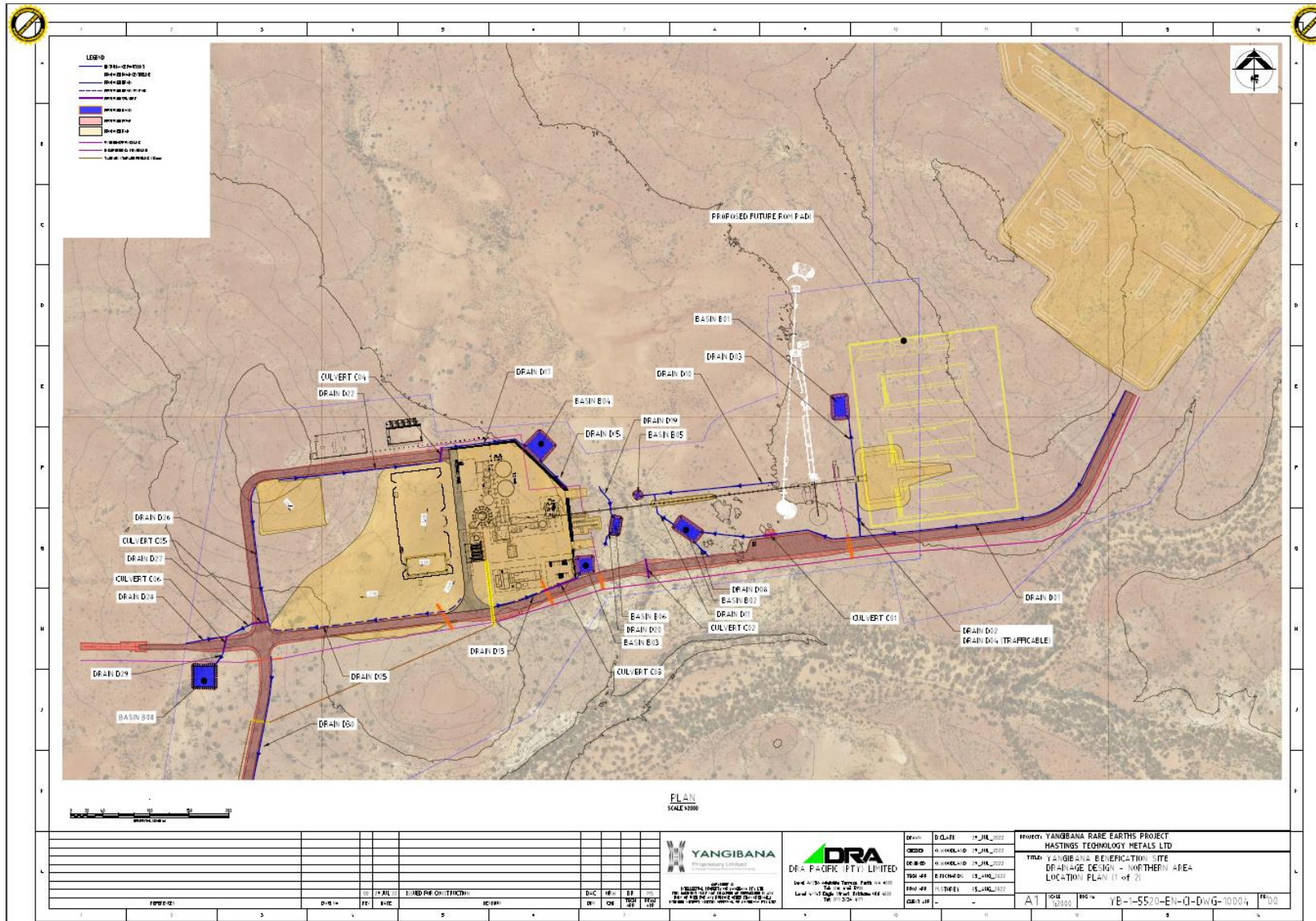


Figure 4: Stormwater drainage management (north)

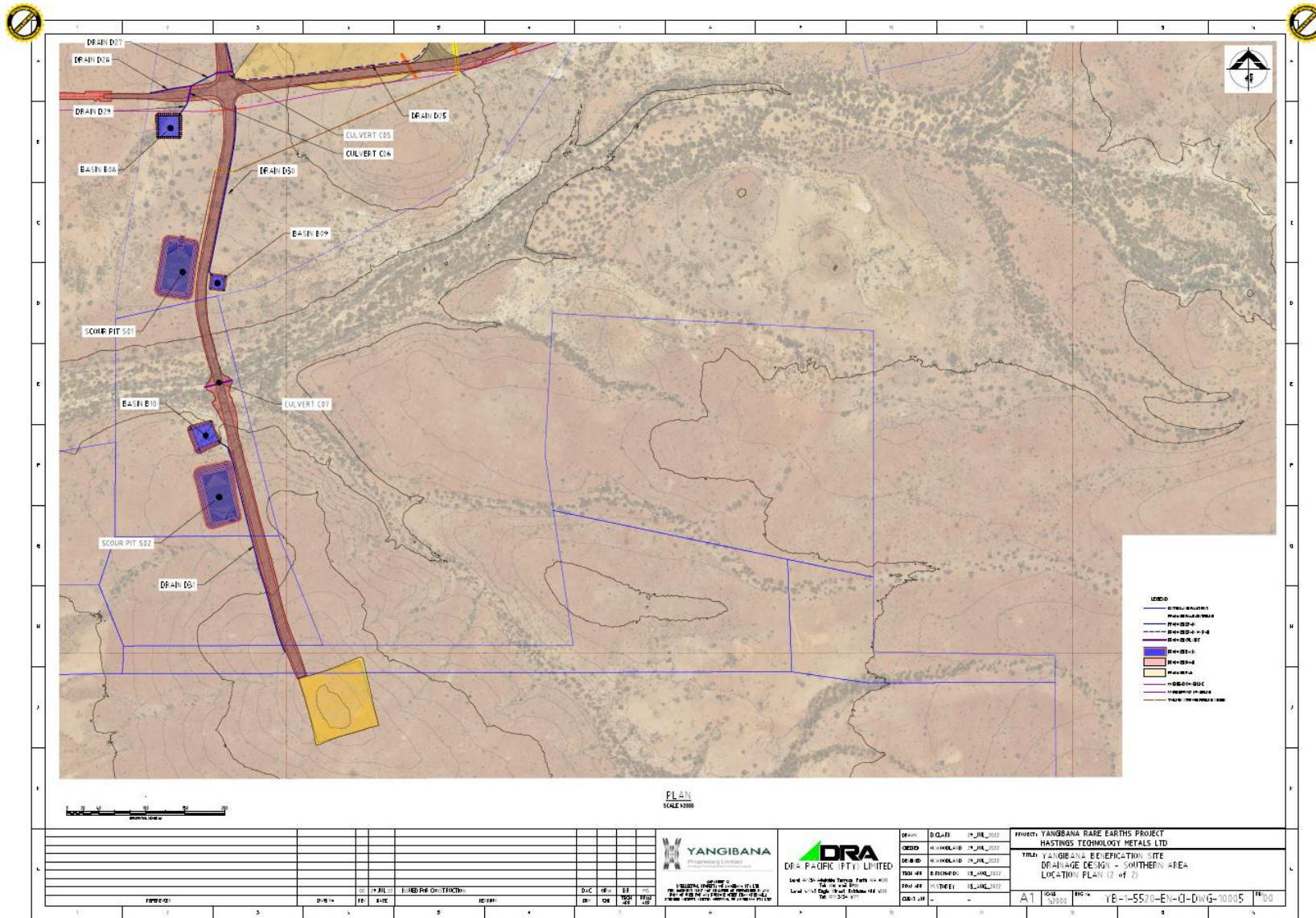


Figure 5: Stormwater drainage management (south)

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Map of TSF groundwater and piezometer monitoring locations

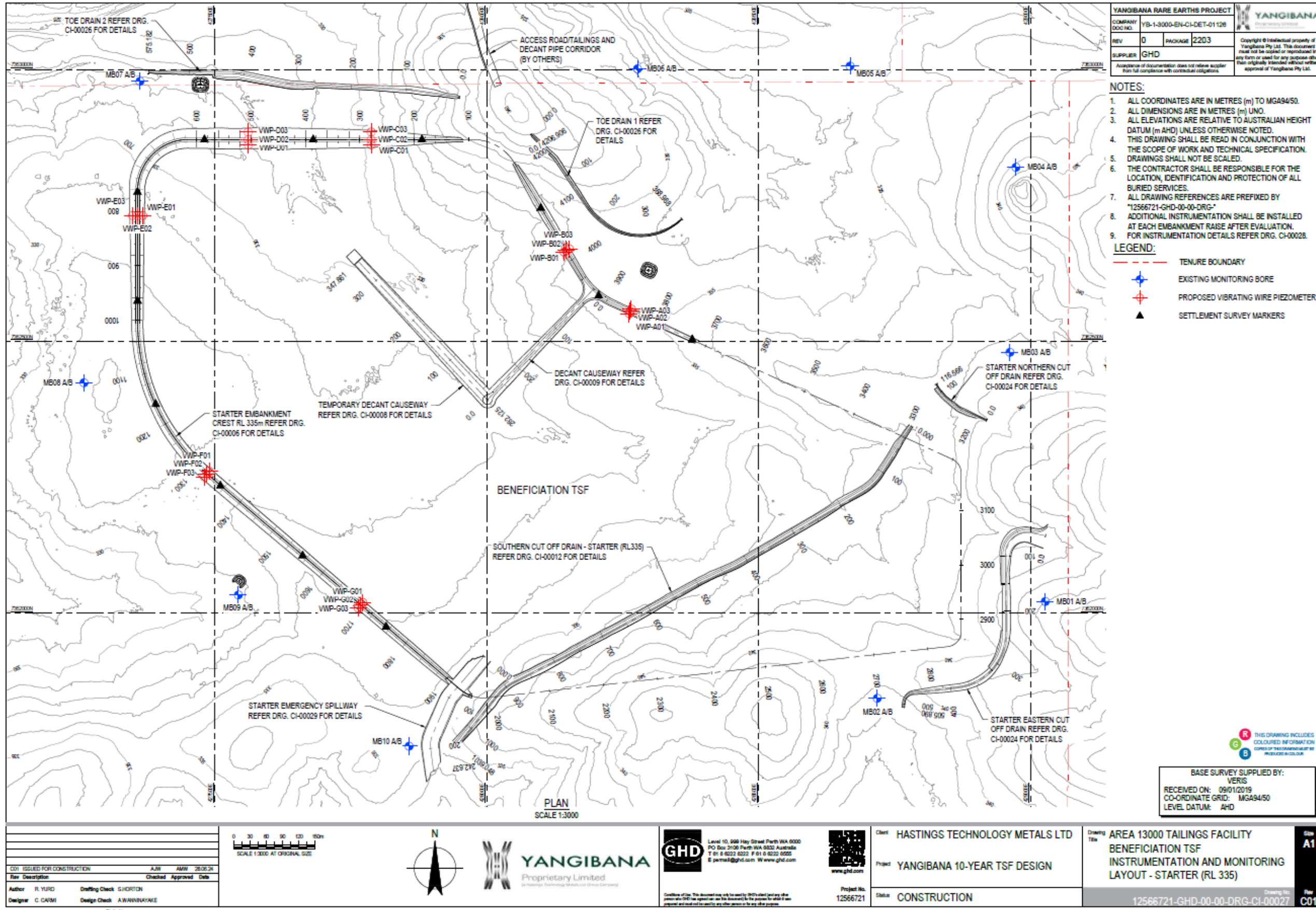


Figure 6: Location of groundwater monitoring bores and piezometers

TSF pipeline route and stormwater diversion map

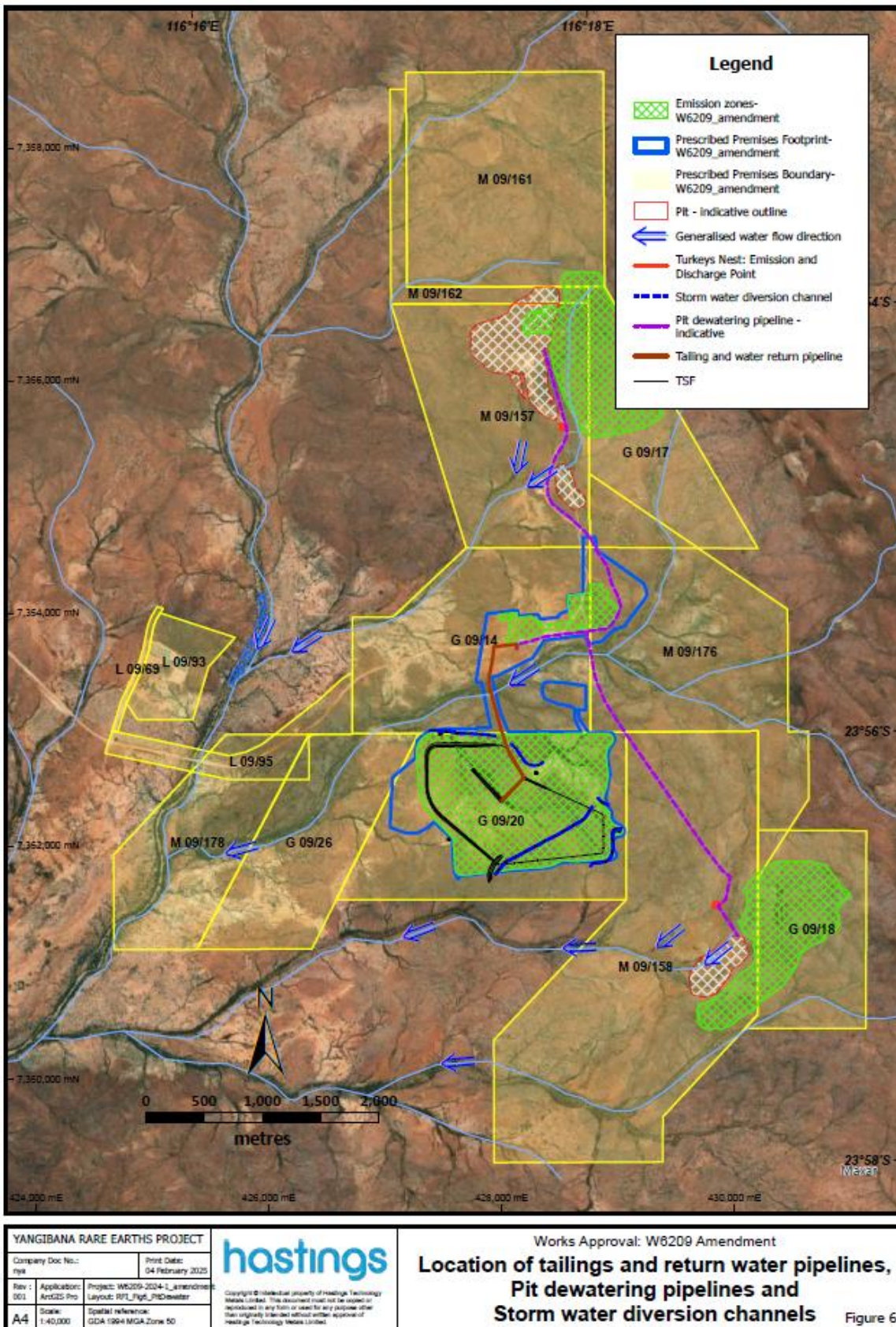


Figure 7: Location of tailings and return water pipelines

Map of surface water monitoring sites

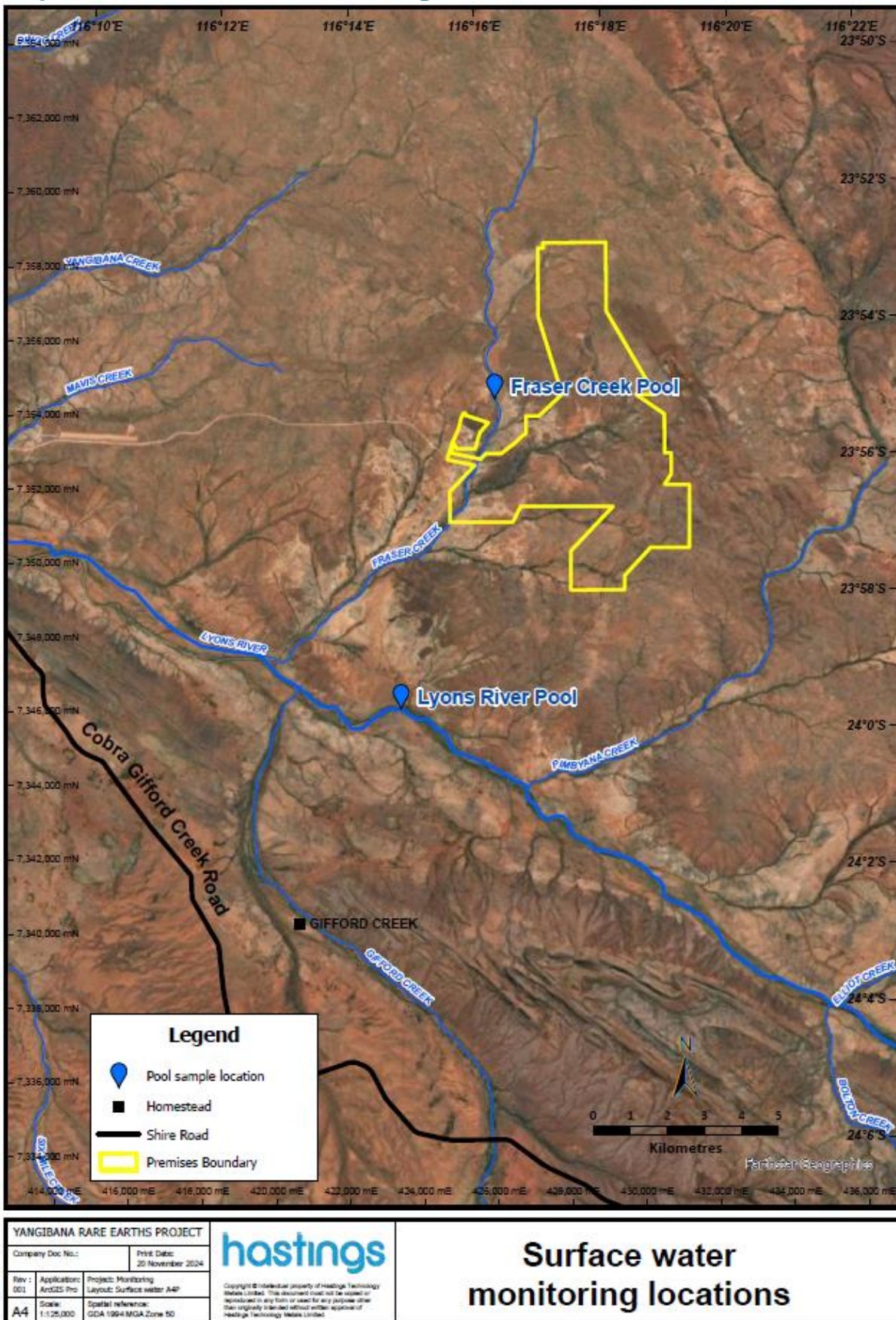


Figure 8: Location of surface water monitoring

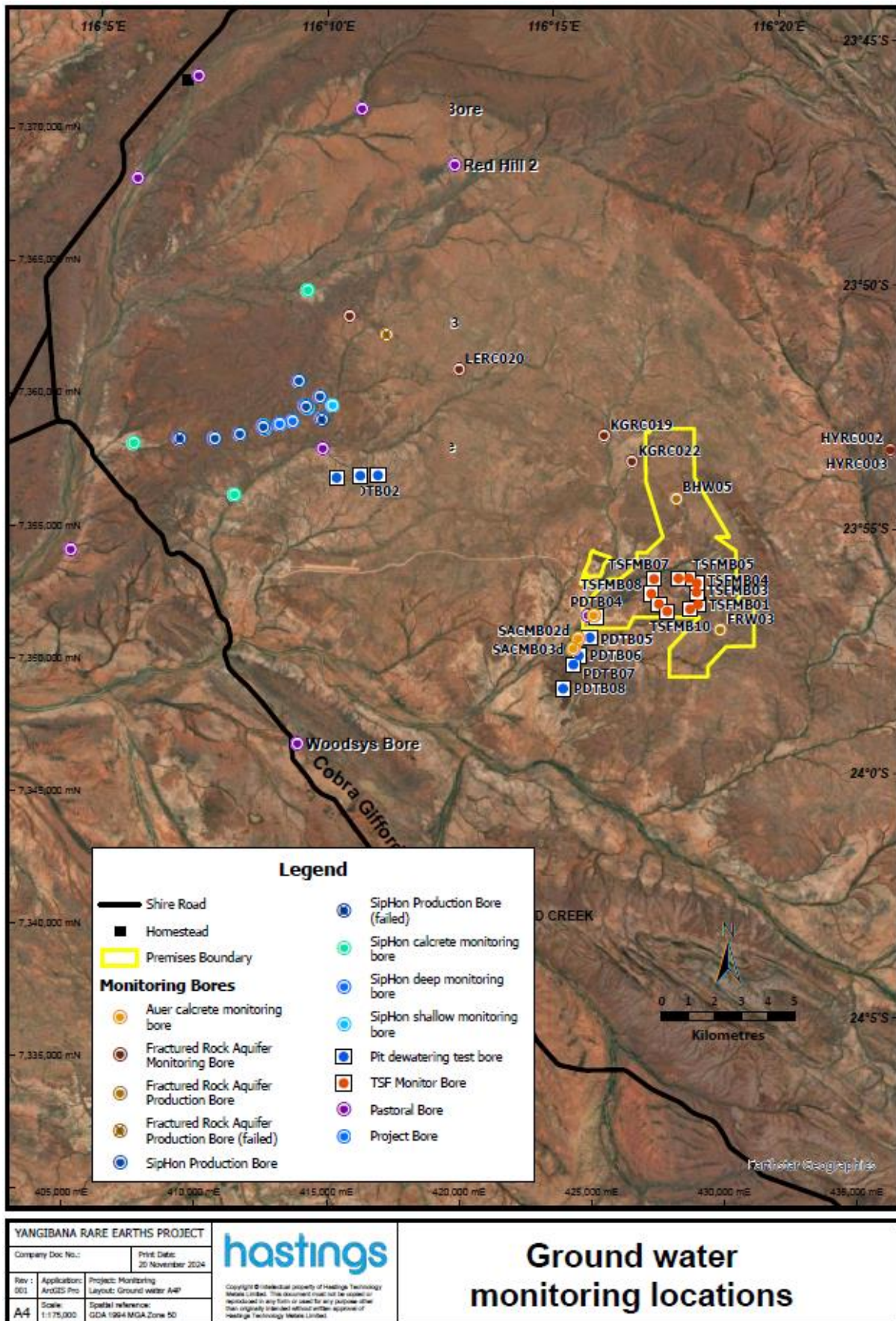


Figure 9: Groundwater bore locations

Map of dewater discharge points

The location of discharge points for the Bald Hill Pit dewater Turkey's Nest and Frasers Pit dewater Turkey's Nest are shown in the map below.

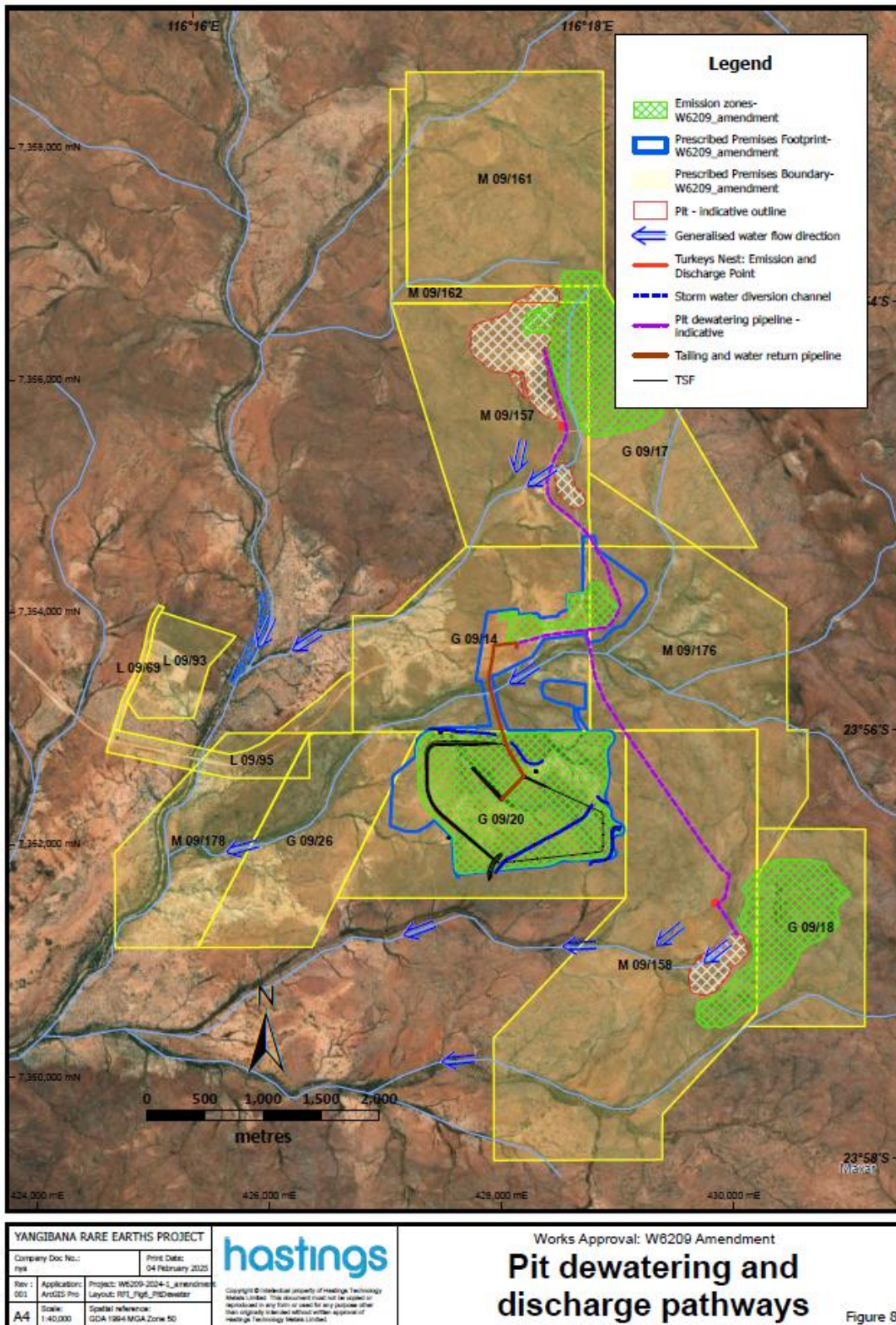


Figure 10: Dewatering discharge locations

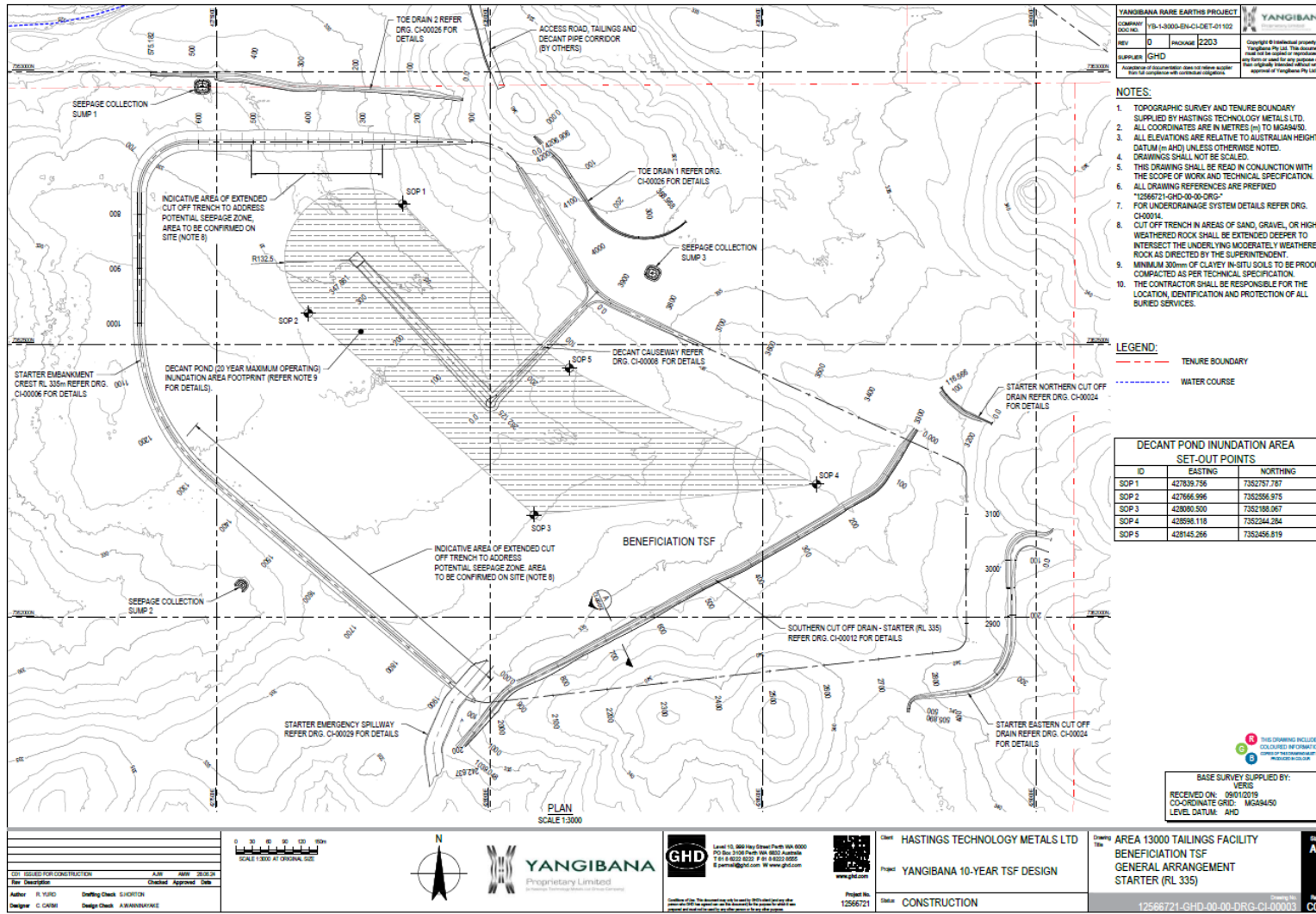


Figure 11: Starter embankment design including estimated location of clay liner

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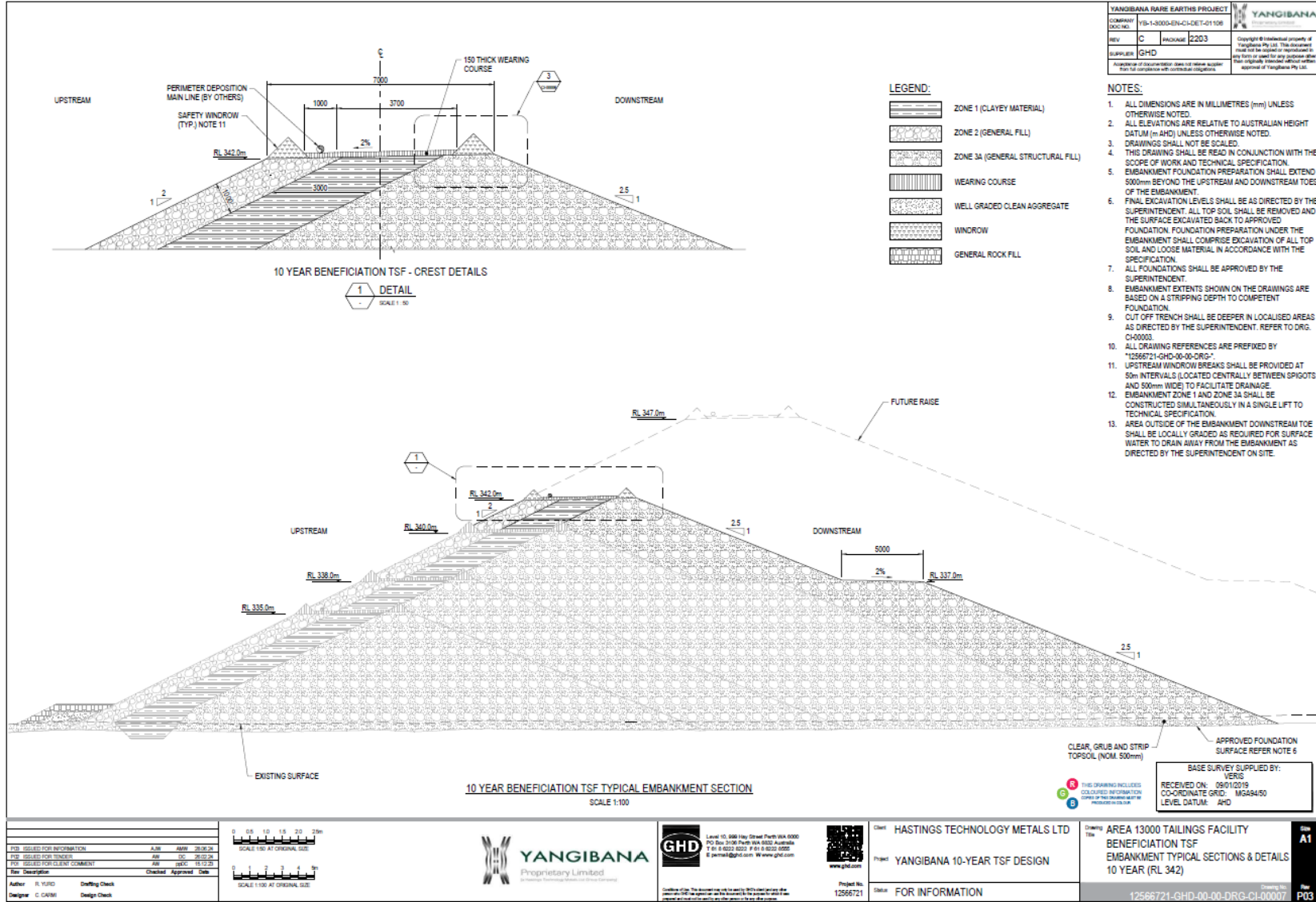


Figure 13: Embankment raises

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Schedule 2: Works

Table 10: Yangibana Project Category 5, 6 and 64 infrastructure

	Infrastructure	Site Plan Reference in Schedule 1
Prescribed Activity Category 5		
Processing and concentrating up to 1.1 Mtpa of REE to produce a concrete that can be further processed at an offsite hydrometallurgical plant. Beneficiation process includes crushing, sorting, screening and grinding and concentration through the ore processing plant. Tailings generated from the plant are stored in the Beneficiation TSF. Tailings from the offsite hydrometallurgical plant will be disposed in the Hydromet TSF.		
<i>Beneficiation Plant</i>		
1	Key components including: <ul style="list-style-type: none"> • ROM pad • Ore crushers, sorters, screeners and grinders • Flotation cells, conditioning tanks, thickeners and filters • Gas-fired concentrate drier 	Premises general layout map; Ore processing plant general layout map
<i>Beneficiation TSF</i>		
3	<ul style="list-style-type: none"> • Paddock style facility with perimeter discharge via spigots with 11 m maximum embankment height. • Tailings delivery and return water pipelines. 	Premises general layout map; TSF general layout map
<i>Hydromet TSF (not authorised to operate under this works approval)</i>		
4	<ul style="list-style-type: none"> • Paddock style facility with decant pond, decant tower and single point discharge 36 ha Hydromet TSF • HDPE lined facility • Tailings and return water pipelines. 	Premises general layout map; TSF general layout map
Prescribed Activity Category 6		
Discharge of excess Frasers Pit and Bald Hill Pit dewater from respective turkey nests to a localised drainage line during a modelled worst-case operating scenario (process plant shutdown coinciding with a 1:100 year ARI rainfall event).		
1	Bald Hill Pit Turkeys Nest and discharge point	Premises general layout map
2	Frasers Pit Turkeys Nest and discharge point	
Prescribed Activity Category 64		
Class II putrescible landfill bunker with 3,487 tpa putrescible and inert waste burial capacity and expected burial rate of approx. 3,170 tpa		
1	Approx. 1,000 m ² waste depot	Ore processing plant general layout map
2	Frasers waste rock dump – putrescible waste bunker and inert waste bunker	Premises general layout map
3	Bald Hill waste rock dump - putrescible waste bunker and inert waste bunker	
4.	G09/26 - putrescible waste bunker and inert waste bunker “Landfill Auer North”	

Schedule 3: Monitoring

Table 11: Groundwater monitoring requirements

Location	Parameter	Frequency	Averaging period	Units	Method
TSFs: MB01 A/B, MB02 A/B, MB03 A/B, MB04 A/B, MB05 A/B and MB06 A/B (as shown in Figure 6 in Schedule 1)	<u>Physical</u> Standing water level ¹ (mbgl), pH ² (pH units), electrical conductivity ² (µS/cm) and total dissolved solids ² (mg/L)	At least quarterly, upon installation of all bores, such that at least 12 monitoring events have been undertaken by the time tailings deposition commenced in either TSFs (whichever is sooner).	Spot sample	Refer to parameter listed	AS/NZS 5667.1; AS/NZS 5667.11
	<u>Dissolved Major Cations and Anions</u> Bicarbonate, Carbonate, Calcium, magnesium, potassium, phosphorus sodium and sulfate			mg/L	
	<u>Dissolved metal(loid)s</u> Aluminium, Antimony, Arsenic, Boron, Barium, Beryllium, Cadmium, Cobalt, Chromium (hexavalent and trivalent), Copper, Lanthanum, Manganese, Molybdenum, Nickel, Lead, Selenium, Thorium, Uranium (including hexavalent), Vanadium, Zinc, Iron	Monthly once deposition into either TSFs (whichever is sooner) has commenced.		mg/L	
	Total recoverable mercury, Fluoride			mg/L	
	<u>Rare Earth Elements</u> Yttrium, Lanthanum, Cerium, Praseodymium, Neodymium, Samarium, Gadolinium, Dysprosium			At least once prior to the tailings deposition in either TSFs (whichever is sooner)	
Frasers Well (as shown as pastoral bore located near Frasers Creek in Figure 9).	<u>Physical</u> Standing water level ¹ (mbgl), pH ² (pH units), electrical conductivity ² (µS/cm) and total dissolved solids ² (mg/L)	Quarterly prior to deposition has commenced into either TSFs (which is sooner).	Refer to parameter listed	mg/L	
	<u>Dissolved Major Cations and Anions</u> Bicarbonate, Carbonate, Calcium, magnesium, potassium, phosphorus sodium and sulfate	Monthly once deposition into either TSFs (whichever is sooner) has commenced.			
	<u>Dissolved metal(loid)s</u> Aluminium, Antimony, Arsenic, Boron, Barium, Beryllium, Cadmium, Cobalt, Chromium, Copper, Lanthanum, Manganese, Molybdenum, Nickel, Lead, Selenium, Thorium, Uranium, Vanadium, Zinc, Iron				
	Total recoverable mercury, fluoride				
	<u>Rare Earth Elements</u> Yttrium, Lanthanum, Cerium, Praseodymium, Neodymium, Samarium, Gadolinium, Dysprosium	At least once prior to the tailings deposition in either TSFs (whichever is sooner)			

Note 1: SWL to be determined prior to the collection of other samples

Note 2: In-field, non-NATA accredited analysis permitted.

Table 12: Surface water monitoring requirements

Location	Parameter	Frequency	Averaging period	Units	Method
Lyons River Pools	<u>Physical</u> pH ¹ (pH units), electrical conductivity ¹ (µS/cm) and total dissolved solids ¹ (mg/L)	Biannually (summer and winter) after rainfall ²	Spot sample	Refer to parameter listed	AS/NZS 5667.1; AS/NZS 5667.6
	<u>Dissolved Major Cations and Anions</u> Bicarbonate, Carbonate, Calcium, magnesium, potassium, phosphorus sodium and sulfate			mg/L	
	<u>Dissolved metal(loid)s</u> Aluminium, Antimony, Arsenic, Boron, Barium, Beryllium, Cadmium, Cobalt, Chromium, Copper, Lanthanum, Manganese, Molybdenum, Nickel, Lead, Selenium, Thorium, Uranium, Vanadium, Zinc, Iron			mg/L	
	Total recoverable mercury, fluoride			mg/L	
	<u>Rare Earth Elements</u> Yttrium, Lanthanum, Cerium, Praseodymium, Neodymium, Samarium, Gadolinium, Dysprosium			mg/L	

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

Note 2: If sufficient surface water is not available for monitoring purposes, the Works Approval Holder must provide this as explanation as to why a monitoring event was not undertaken.