Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6802/2023/1
Works approval holder	FMG Solomon Pty Ltd
ACN	128 959 179
Registered business address	Level 2, 87 Adelaide Terrace EAST PERTH WA 6004
DWER file number	DER2023/000004
Duration	31/07/2023 to 30/07/2028
Date of issue	12/06/2025
Premises details	Solomon Mine Mining tenements E47/1011, E47/1334, E47/1532, M47/1409, M47/1410, M47/1411, M47/1413, M47/1431, M47/1453, M47/1466, M47/1473, M47/1474, M47/1475, L47/293, L47/294, L47/296, L47/301, L47/351, L47/360, L47/362, L47/363, L47/367, L47/381, E47/382, L47/391, L47/392, L47/397, L47/471, L47/472, L47/710, L47/711, L47/813, L47/814, P47/1279, P47/1286, P47/1287, P47/1304, P417/1305, P47/1735, P47/1736 and portion of E47/1319, E47/1333, E47/1398, E47/1399, E47/1447, E47/3094, E47/3464, L47/361 and L47/713 (as defined by the coordinates in Schedule 2) MT SHEILA WA 6751

Prescribed premises category description **(Schedule 1, *Environmental Protection Regulations 1987*)**	**Assessed production / design capacity**
Category 5: Processing or beneficiation of metallic or non-metallic ore	95,300,000 tonnes per annual period
Category 64: Class II putrescible landfill	14,000 tonnes per annual period
Category 77: Concrete batching or cement products manufacturing	3,000 tonnes per year

This works approval is granted to the works approval holder, subject to the attached conditions, on 12 June 2025, by:

Jarrod Abrahams
Digitally signed by Jarrod Abrahams
Date: 2025.06.12 14:15:19 +08'00'

MANAGER, RESOURCE INDUSTRIES
Officer delegated under section 20 of the Environmental Protection Act 1986

Works approval history

Date	Reference number	Summary of changes
31/07/2023	W6802/2023/1	Works approval granted.
27/11/2024	W6802/2023/1	Amendment for the extension of the TLO duration from 180 calendar days to 360 calendar days.
12/06/2025	W6802/2023/1	Amendment for the extension of the TLO duration from 360 calendar days to 540 calendar days.

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:

General

1. The works approval holder must manage dust generation at the premises by wetting down activities associated with construction of the Brad tailings storage facility, pipelines, landfill expansion and mobilisation of the mobile concrete batching plant.

Construction phase

Infrastructure and equipment (critical containment infrastructure – tailings storage facility

2. The works approval holder must:

(a) construct all critical containment infrastructure;

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

(c) at the corresponding infrastructure location;

as set out in Table 1.

Table 1: Critical containment infrastructure design and construction requirements

item	Infrastructure	Design and construction requirements	Infrastructure location
1.	Brad tailings storage facility: stage 1	(a) Main embankment stage 1 constructed to a height of 607 m RL (b) Main embankment stage 1 safety bund constructed to a height of 608.8 m RL (c) Eastern saddle embankment stage 1 constructed to a height of 640 m RL (d) Constructed to accommodate a 1:1000 year annual exceedance probability 72 hour storm event (631 mm) (e) Freeboard markers placed on embankments to allow visual freeboard inspection	As shown in Figure 1, Figure 2 and Figure 3 of Schedule 1
	Pipelines carrying tailings and decant return water	(a) Constructed according to Australian Standards AS/NZS 2033, 4129, 4130 and 4131 for polyethylene pipes (b) Tailings delivery and decant return pipelines to be equipped with real-time 24/7 telemetry monitoring with automatic cut-outs in the event of a pipeline failure (c) Cut off valves to have a separation distance of no more than 1 km from each other (d) Where pipelines are located above ground and outside existing road corridors, they	As shown in Figure 1 and Figure 2 of Schedule 1

item	Infrastructure	Design and construction requirements	Infrastructure location
		must be bunded to a sufficient capacity to contain approximately 1 km pipeline spill volume which is equivalent to a volume of 130 m^3; (e) Where pipelines are constructed within road corridors, those roads must be bunded by earthen windrows to contain pipelines leaks (f) Following construction and prior to time limited operations: (i) Pipelines must be leak tested; (ii) All flow meters to be calibrated; and (iii) All pressure meters to be calibrated.	
	Vibrating wire piezometers (VWP)	(a) Install VWPs as per the design engineer specifications and maintain instrument operability to the satisfaction of the TSF Engineer of Record who shall review instrumentation and operation through quarterly and annual reporting to ensure suitable monitoring of failure modes are maintained. (b) All VWPs to be installed as per the specifications in Figure 7 (c) VWP to have instrument readout stations (to download data to a central storage location)	Within Brad TSF embankments as determined by the design engineer specifications
	Tailings storage facility surface water management	(a) Contaminated stormwater is to be captured and prevented from being released to the environment during construction of the TSF (b) TSF to be constructed with sediment/stormwater controls and diversions as per Figure 11 of Schedule 1	As shown in Figure 11 of Schedule 1

3. The works approval holder must:

(a) construct all critical containment infrastructure;

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

(c) at the corresponding infrastructure location;

as set out in Table 2.

Table 2: Critical containment infrastructure design and construction requirements

item	Infrastructure	Design and construction requirements	Infrastructure location
1	Brad tailings storage facility: stage 2	(a) Main embankment stage 2 constructed to a height of 627 m RL (b) Main embankment stage 2 safety bund constructed to a height of 628.8 m RL (c) Constructed to accommodate a 1:1000 year annual exceedance probability 72 hour storm event (631 mm) (d) Freeboard markers placed on embankments to allow visual freeboard inspection	As shown in Figure 1, Figure 2 and Figure 4 of Schedule 1
	Vibrating wire piezometers (VWP)	(a) Install VWPs as per the design engineer specifications and maintain instrument operability to the satisfaction of the TSF Engineer of Record who shall review instrumentation and operation through quarterly and annual reporting to ensure suitable monitoring of failure modes are maintained (b) All VWPs to be installed as per the specifications in Figure 7 (c) VWP to have instrument readout stations (to download data to a central storage location)	Within Brad TSF embankments as determined by the design engineer specifications

Infrastructure and equipment (non-critical containment infrastructure)

4. The works approval holder must construct and/or install the infrastructure listed in Table 3;

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

(b) at the corresponding infrastructure location;

as set out in Table 3.

Table 3: Design and construction / installation requirements

item	Infrastructure	Design and construction / installation requirements	Infrastructure location
1.	Putrescible landfill expansion	(a) 0.37 hectare expansion only within the area as shown in Figure 8 of Schedule 1 (b) Landfill fence extended to include expansion area (c) Windrows and bunding constructed to divert clean stormwater around the landfill expansion (d) The separation distance between the base of the landfill expansion and the highest groundwater level shall not be less than 2 m.	As shown in Figure 1 and Figure 8 of Schedule 1

item	Infrastructure	Design and construction / installation requirements	Infrastructure location
2.	Mobile concrete batching plant	(a) Diversion structures, including bunds or channels to be installed to divert clean surface water around the CBP work area and stockpiles (b) Construction of semi-enclosed materials bay(s) to assist with aggregate/sand dust management	As shown in Figure 9 and Figure 10 of Schedule 1

Construction of groundwater monitoring wells and hyporheic zone monitoring points

5. The works approval holder must design, construct, and install groundwater monitoring wells in accordance with the requirements specified in Table 4.

Table 4: Infrastructure requirements – groundwater monitoring wells

Infrastructure	Design, construction, and installation requirements	Monitoring well location(s)	Timeframe
Groundwater monitoring well(s): MB-001 MB-003 MB-005 MB-008	<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. The screened interval should be no longer than 6 metres.	As depicted in Schedule 1, Figure 6. Map of groundwater monitoring well locations	Must be constructed, developed (purged), and determined to be operational by no later than 30 calendar days prior to commencement of time limited operations.
	<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>		

Infrastructure	Design, construction, and installation requirements	Monitoring well location(s)	Timeframe
	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 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.

6. The works approval holder must design, construct, and install hyporheic zone monitoring points in accordance with the requirements specified in Table 5.

Table 5: Infrastructure requirements – hyporheic zone monitoring points

Infrastructure	Design, construction, and installation requirements	Monitoring well location(s)	Timeframe
Hyporheic zone monitoring points within Kangeenarina and Zalamea creeks as determined by a suitably qualified hydrogeologist	Design and construction: "Piezometers[2]" or "Mini-piezometers" as described by the "Hyporheic Handbook[1]" (2009) installed within the hyporheic zone of the creek channel. Screened interval to target the hyporheic zone.	Within Kangeenarina and Zalamea creeks as determined by a suitably qualified hydrogeologist	Must be constructed and determined to be operational by no later than 30 calendar days prior to commencement of time limited operations.
	Logging of borehole: A record of the sediment/geology encountered during installation 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.		
	Construction log: Construction details, including the screened interval, must be documented within a construction log.		
	Well network map: a map (using aerial image overlay) must be prepared and include the location of all monitoring points in the monitoring network and their respective identification numbers.		

Note 1: UK Environmental Agency 2009, *The Hyporheic Handbook: A handbook on the groundwater-surface water interface and hyporheic zone for environment managers*, Available from: https://www.gov.uk/government/publications/the-hyporheic-handbook-groundwater-surface-water-interface-and-hyporheic-zone-for-environment-managers

Note 2: In this instance, a piezometer is defined as a small-diameter well with a short screen, used to make head measurements and sample water at a specific depth. Mini-piezometers are similar devices, generally of smaller diameter and commonly installed at a maximum of 2m depth, either in the floodplain or directly in the channel. Please note that this is a different definition from the "vibrating wire piezometers" for installation in the TSF embankments.

Groundwater monitoring prior to time limited operations

7. The works approval holder must conduct groundwater monitoring in accordance with the requirements specified in Schedule 3 and:

(a) at the corresponding monitoring location;

(b) for the corresponding parameters;

(c) in the corresponding unit;

(d) at no less than the corresponding frequency;

(e) using the corresponding method,

as set out in Table 6

Table 6 Groundwater monitoring of ambient concentrations

Monitoring well location	Parameter	Unit[2]	Frequency	Method
Groundwater monitoring well(s) MB-001 MB-003 MB-005 MB-008 Satay bore SMB1056S SMB1056D	Standing water level	Metres below ground level (m bgl)	A single sampling event undertaken prior to commencement of time limited operations (specifically, prior to deposition of tailings in Brad TSF)	AS/NZS 5667.1 & AS/NZS 5667.11
	pH[1]	pH units		
	Electrical conductivity (EC)	µS/cm		
	Total dissolved solids (TDS)	mg/L		
	Dissolved oxygen (DO)[1]	mg/L		
	Major cations and anions Alkalinity Ammonia Calcium Chloride Magnesium Nitrate Potassium Sodium Sulfate **Dissolved metals, metalloids and non-metals** Antimony Arsenic Barium Boron Cadmium Cobalt Chromium III Chromium VI	mg/L		

Monitoring well location	Parameter	Unit[2]	Frequency	Method
	Copper Fluoride Iron Manganese Mercury Molybdenum Nickel Lead Selenium Strontium Titanium Uranium Zinc			
Hyporheic monitoring points, as per condition 6	pH[1]	pH units	A single sampling event undertaken prior to commencement of time limited operations (specifically, prior to deposition of tailings in Brad TSF)	AS/NZS 5667.1 & AS/NZS 5667.11.
	Electrical conductivity (EC)	µS/cm		
	Total dissolved solids (TDS)	mg/L		
	Dissolved oxygen[1]	mg/L		
	Major cations and anions Alkalinity Ammonia Calcium Chloride Magnesium Nitrate Potassium Sodium Sulfate **Dissolved metals, metalloids and non-metals** Antimony Arsenic Barium Boron Cadmium Cobalt Chromium III Chromium VI Copper Fluoride Iron Manganese Mercury Molybdenum Nickel	mg/L		

Monitoring well location	Parameter	Unit[2]	Frequency	Method
	Lead Selenium Strontium Titanium Uranium Zinc			

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

Note 2: The limits of reporting must be set to allow comparison with relevant assessment levels.

8. The works approval holder must adhere to the field quality assurance and quality control procedures specified in Schedule 3 for the monitoring required by condition 7.

9. 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 condition 7.

Compliance reporting (critical containment infrastructure – Brad TSF stage 1)

10. The works approval holder must within 90 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.

11. The Critical Containment Infrastructure Report required by condition 10 must include as a minimum the following:

(a) certification by a suitably qualified geotechnical engineer that each item of critical containment infrastructure of a geotechnical nature (embankment, VWPs and surface water management) or component thereof, as specified in condition 2, has been built and installed in accordance with the requirements specified in condition 2;

(b) certification by a suitably qualified mechanical engineer that each item of critical containment infrastructure (pipelines) or component thereof, as specified in condition 2, has been built and installed in accordance with the requirements specified in condition 2;

(c) as constructed plans and a detailed site plan showing the location and dimensions for each item of critical containment infrastructure or component thereof, as specified in condition 2;

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

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

Compliance reporting (critical containment infrastructure – Brad TSF stage 2)

12. The works approval holder must within 90 calendar days of the Critical Containment Infrastructure identified by condition 3 being constructed:

(a) undertake an audit of their compliance with the requirements of condition 3; and

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

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

(a) certification by a suitably qualified geotechnical engineer that each item of critical containment infrastructure or component thereof, as specified in condition 3 , has been built and installed in accordance with the requirements specified in condition 3;

(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 3;

(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.

Compliance reporting (non-critical containment infrastructure)

14. The works approval holder must within 30 calendar days of an item of infrastructure or equipment required by condition 4 being constructed and/or installed:

(a) undertake an audit of their compliance with the requirements of condition 4; and

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

15. The Environmental Compliance Report required by condition 14, must include as a minimum the following:

(a) certification by a suitably qualified engineer that the items of infrastructure or component(s) thereof, as specified in condition 4, have been constructed in accordance with the relevant requirements specified in condition 4;

(b) as constructed plans and a detailed site plan for each item of infrastructure or component of infrastructure specified in condition 4; and

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

Compliance reporting (well construction and groundwater/hyporheic monitoring)

16. The works approval holder must, within 60 calendar days of the monitoring wells and hyporheic monitoring points being constructed, submit to the CEO a construction report evidencing compliance with the requirements of conditions 5 and 6.

17. The works approval holder must submit to the CEO, a monitoring report demonstrating their compliance with condition 7, and must include:

(a) a clear statement of the scope of work carried out;

(b) a description of the field methodologies employed;

(c) a summary of the field and laboratory quality assurance / quality control (QA/QC) program;

(d) copies of the field monitoring records and field QA/QC documentation;

(e) an assessment of reliability of field procedures and laboratory results;

(f) a tabulated summary of results, as well as all raw data provided in an accompanying Microsoft Excel spreadsheet digital document/file (or a compatible equivalent digital document/file), with all results being clearly referenced to laboratory certificates of analysis;

(g) a diagram with aerial image overlay showing all monitoring locations and depicting groundwater level contours, flow direction and hydraulic gradient (relevant site features including discharge points and other potential sources of contamination must also be shown); and

(h) an interpretive summary and assessment of the results against relevant assessment levels for water, as published in the Guideline Assessment and management of contaminated sites.

Note 1: General guidance on report presentation can be found in the Department's *Guideline: Assessment and management of contaminated sites*.

Time limited operations phase

Commencement and duration

18. The works approval holder may only commence time limited operations for an item of critical containment infrastructure identified in condition 2 where the CEO has notified the works approval holder that the Critical Containment Infrastructure Report for that item of infrastructure as required by condition 10 meets the requirements of that condition.

19. The works approval holder may only commence time limited operations for an item of infrastructure identified in condition 4 where the Environmental Compliance Report as required by condition 14 has been submitted by the works approval holder for that item of infrastructure.

20. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 21 (as applicable):

(a) for a period not exceeding 540 calendar days from the day the works approval holder meets the requirements of condition 18 and 19 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 20(a).

Time limited operations requirements and emission limits

21. During time limited operations, the works approval holder must ensure that the premises infrastructure and equipment listed in Table 7 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 7.

Table 7: Infrastructure and equipment requirements during time limited operations

item	Site infrastructure and equipment	Operational requirement	Infrastructure location
1.	Brad tailings storage facility: stage 1	(a) To be maintained as per the design and construction/installation requirements in condition 2 (b) Capacity maintained for a 1:1000 year annual exceedance probability 72 hour storm event (631 mm) (c) Wet season maximum operating pond level 598.8m RL (d) Visual inspections daily and following significant rainfall events to check: (i) Freeboard capacity (ii) Location and size of decant pond (in hectares and expressed as a total percentage of the surface area of the TSF) (iii) Change in seepage conditions or sudden change in water level (iv) Signs of erosion	As shown in Figure 3 and Figure 5of Schedule 1
	Pipelines carrying tailings and decant return water	(a) To be maintained as per the design and construction/installation requirements in condition 2 (b) Visual inspections every 24 hours when in operation to check the integrity of pipelines and bunding	As shown in Figure 1 of Schedule 1
	Vibrating wire piezometers (VWP)	(a) Fortnightly inspections to ensure integrity of VWPs and to ensure telemetry data is downloading to a central storage location	Within Brad TSF embankments as determined by the design engineer specifications
2.	Landfill expansion	(a) To be maintained as per the design and construction/installation requirements in condition 2 (b) Windrows and bunding maintained to divert clean stormwater around the landfill expansion (c) The separation distance between the base of the landfill expansion and the highest groundwater level shall not be less than 2 m. (d) Waste shall be placed in a defined trench or within an area enclosed by earthen bunds	As shown in Figure 8 of Schedule 1

item	Site infrastructure and equipment	Operational requirement	Infrastructure location
		(e) Cover requirements: (i) Inert waste type 1: no cover required (ii) Inert waste type 2: covered weekly to ensure no waste is left exposed (iii) Putrescible waste – within 3 months cover to a depth of 1m	
3.	Mobile concrete batching plant	(a) Diversion structures, including bunds or channels, to divert clean surface water around the CBP work area and stockpiles; (b) Aggregate/sand for use by CBP to be stored within an enclosed materials bay(s) for dust management purposes	As per Figure 9 or Figure 10 of Schedule 1

Emissions and discharges

22. The works approval holder must ensure that the emissions specified in Table 8, are discharged only from the corresponding discharge point and only at the corresponding discharge point location.

Table 8: Authorised discharge points

Emission	Discharge point	Discharge point location
Tailings from Solomon mine site	Brad tailings storage facility	Brad TSF as shown in Figure 1 and Figure 2 of Schedule 1

Tailings characterisation

23. During the first 60 calendar days of time limited operations, the works approval holder must collect at least 10 individual representative tailings samples (including pore-water) to determine the likely behavior of elements under a range of leaching conditions, to include, but not limited to:

(a) testing for the contaminants listed in Table 9; and

(b) testing using the LEAF Test Method 1313 pH dependant leaching test (US EPA, 2017);

(c) All test results shall be collated in excel format and provided in a report to the CEO no more than 60 calendar days after sample collection.

Table 9: Tailings characterisation parameters

Stream	Contaminants	Unit
Tailings leachate	Aluminium Antimony Arsenic III Arsenic V	mg/L

Stream	Contaminants	Unit
	Beryllium Boron Cadmium Calcium Chloride Chromium III Chromium VI Cobalt Copper Fluoride Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Nitrate Nitrite Potassium Selenium Silver Sodium Sulfate Strontium Thallium Titanium Total Sulfur Uranium Vanadium Zinc	
	Total dissolved solids	
	pH	pH units

Groundwater/hyporheic monitoring during time limited operations

24. The works approval holder must conduct groundwater monitoring in accordance with the requirements specified in Schedule 3 and:

(a) at the corresponding monitoring location;

(b) for the corresponding parameters;

(c) with the corresponding limit;

(d) in the corresponding unit;

(e) at no less than the corresponding frequency;

(f) using the corresponding method,

as set out in Table 10

Table 10: Groundwater monitoring of ambient concentrations

Monitoring well location	Parameter	Triggers management action	Limit	Unit[2]	Frequency	Method
Groundwater monitoring well(s) MB-001 MB-003 MB-005 MB-008 Satay bore SMB1056S SMB1056D	Standing water level	6	4	Metres below ground level (m bgl)	A single sampling event undertaken between 30 and 60 calendar days following commencement of time limited operations (specifically tailings deposition into Brad TSF). AND A single sampling event undertaken between 120 and 180 calendar days following commencement of time limited operations (specifically tailings deposition into Brad TSF).	AS/NZS 5667.1 & AS/NZS 5667.11
	pH[1]	-	-	pH units		
	Electrical conductivity (EC)	-	-	µS/cm		
	Total dissolved solids (TDS)	-	-	mg/L		
	Dissolved oxygen[1]	-	-	mg/L		
	Major cations and anions Alkalinity Ammonia Calcium Chloride Magnesium Nitrate Potassium Sodium Sulfate **Dissolved metals, metalloids and non-metals** Antimony Arsenic Barium Boron Cadmium Cobalt Chromium III Chromium VI Copper Fluoride Iron Manganese Mercury Molybdenum Nickel Lead Selenium	-	-	mg/L		

Monitoring well location	Parameter	Triggers management action	Limit	Unit[2]	Frequency	Method
	Strontium Titanium Uranium Zinc					
Hyporheic monitoring points, as per condition 6	pH[1]	-	-	pH units	A single sampling event undertaken between 30 and 60 calendar days following commencement of time limited operations (specifically tailings deposition into Brad TSF). AND A single sampling event undertaken between 120 and 180 calendar days following commencement of time limited operations (specifically tailings deposition into Brad TSF).	AS/NZS 5667.11
	Electrical conductivity (EC)	-	-	µS/cm		
	Total dissolved solids (TDS)	-	-	mg/L		
	Dissolved oxygen[1]	-	-	mg/L		
	Major cations and anions Alkalinity Ammonia Calcium Chloride Magnesium Nitrate Potassium Sodium Sulfate **Dissolved metals, metalloids and non-metals** Antimony Arsenic Barium Boron Cadmium Cobalt Chromium III Chromium VI Copper Fluoride Iron Manganese Mercury Molybdenum Nickel Lead Selenium Strontium Titanium	-	-	mg/L		

Monitoring well location	Parameter	Triggers management action	Limit	Unit[2]	Frequency	Method
	Uranium Zinc					

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

Note 2: The limits of reporting must be set to allow comparison with relevant assessment levels.

Groundwater monitoring limit exceedances

25. The works approval holder must record, investigate, take corrective action and report to the CEO within 14 calendar days, in the event of a parameter in Condition 24 exceeding the corresponding limit or management action trigger.

26. The works approval holder must include the following information in the report referred to in condition 25 in relation to any exceedances of any limit identified in that condition:

(a) the nature, volume and characteristics of the emissions or concentrations exceedance;

(b) the time and date when the exceedance occurred;

(c) whether any environmental impact occurred as a result of the exceedance and, if so, what that impact was and where the impact occurred;

(d) the details of the management action(s) taken pursuant with condition 25 in response to the exceedance;

(e) the details and result of any investigation undertaken into the cause of the exceedance; and

(f) what action has been taken, or will be taken, to prevent the exceedance occurring again and for the purpose of minimising the likelihood of pollution or environmental harm.

Groundwater monitoring reporting requirements

27. The works approval holder must submit to the CEO, a monitoring report demonstrating their compliance with condition 24, and must include:

(a) a clear statement of the scope of work carried out;

(b) a description of the field methodologies employed;

(c) a summary of the field and laboratory quality assurance / quality control (QA/QC) program;

(d) copies of the field monitoring records and field QA/QC documentation;

(e) an assessment of reliability of field procedures and laboratory results;

(f) a tabulated summary of results, as well as all raw data provided in an accompanying Microsoft Excel spreadsheet digital document/file (or a

compatible equivalent digital document/file), with all results being clearly referenced to laboratory certificates of analysis;

(g) a diagram with aerial image overlay showing all monitoring locations and depicting groundwater level contours, flow direction and hydraulic gradient (relevant site features including discharge points and other potential sources of contamination must also be shown);

(h) an interpretive summary and assessment of the results against relevant assessment levels for water, as published in the Guideline Assessment and management of contaminated sites;

(i) an interpretive summary and assessment of results against previous monitoring results;

(j) an interpretive summary and assessment of the results against relevant assessment levels for water, as published in the Guideline Assessment and management of contaminated sites; and

(k) trend graphs to provide a graphical representation of historical results and to support the interpretive summary.

Note 1: General guidance on report presentation can be found in the Department's *Guideline: Assessment and management of contaminated sites*.

Water balance monitoring

28. The works approval holder must review and assess the water balance for the TSF each monthly period, and (as a minimum) record the following information:

(a) site rainfall (as determined by an on-site weather station);

(b) evaporation rate (as determined by an on-site weather station);

(c) decant water recovery volumes;

(d) volume of tailings deposited; and

(e) estimate of seepage losses.

Compliance reporting – time limited operations

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

30. The works approval holder must ensure the report required by condition 29 includes the following:

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

(b) a summary of monitoring results obtained under condition 7, 23, 24 and 28;

(c) a summary of the environmental performance of all infrastructure as constructed or installed;

(d) 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)

31. 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.

32. 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 2, 3 and 1;

(b) any maintenance of infrastructure that is performed in the course of complying with condition 21;

(c) monitoring programmes undertaken in accordance with conditions 7, 23, 24 and 28; and

(d) complaints received under condition 31.

33. The books specified under condition 32 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 11 have the meanings defined.

Table 11: Definitions

Term	Definition
annual period	a 12 month period commencing from 12 June until 12 June of the immediately following year.
ARI	average recurrence interval
AS1726	means the Australian Standard AS1726 *Geotechnical Site Investigations*
AS/NZS 2033	means the Australian Standard AS/NZS 2033: Installation of polyethlene pipe systems
AS/NZS 4129	means the Australian Standard AS/NZS 4129: fittings for polyethylene (PE) pipes for pressure applications
AS/NZS 4130	means the Australian Standard AS/NZS 4130 Polyethylene pipes for pressure applications
AS/NZS 4131	means the Australian Standard AS/NZS 4131 Polyethylene compounds for pressure pipes and fittings.
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples.*
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 *Water Quality - Sampling Guidance on sampling of groundwaters*
ASTM D5092/D5092M-16	means the ASTM international standard for *Standard practice for design and installation of groundwater monitoring wells (*Designation: ASTM D5092/D5092M-16*).*
ASTM D1505	Means the ASTM international standard for *Density by Variable Density Gradient Column*
ASTM D1603	Means the ASTM international standard for *Standard Test Method for Carbon Black Content in Olefin Plastics*
ASTM D5299/D5299M-18	means the ASTM international standard for *Decommissioning of Groundwater Wells, Vadose Zone Monitoring Devices, Boreholes, and Other Devices for Environmental Activities (*Designation: D5299/D5299M–18).
books	has the same meaning given to that term under the EP Act.

Term	Definition
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department administering the *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 info@dwer.wa.gov.au
critical containment infrastructure	means the items of infrastructure listed in conditions 2 and 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.
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 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).
Hyporheic zone	That part of the groundwater-river interface which is water-saturated and in which there is exchange of water from the stream into the riverbed sediments and then returning to the stream, within timescales of days to months.
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.
suitably qualified engineer	Means a competent professional who: (a) holds a qualification in engineering or equivalent; and (b) has a minimum of at least three years experience working as an engineer.
suitably qualified mechanical engineer	Means a competent professional who: (a) holds a qualification in mechanical engineering or equivalent;

Term	Definition
	and (b) has a minimum of at least three years experience working as a mechanical engineer.
suitably qualified geotechnical engineer	Means a competent professional who: (c) holds a qualification in geotechnical engineering or equivalent; and (d) has a minimum of at least three years experience working as a geotechnical engineer.
suitably qualified hydrogeologist	Means a competent professional who: (a) holds a qualification in hydrogeology, geology or equivalent; and (b) has a minimum of at least three years experience working in the field of hydrogeology.
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.
VWP	Vibrating wire piezometers
waste	has the same meaning given to that term under the EP Act.
works approval	refers to this document, which evidences the grant of the works approval by the CEO under section 54 of the EP Act, subject to the conditions.
works approval holder	refers to the occupier of the premises being the person to whom this works approval has been granted, as specified at the front of this works approval.

END OF CONDITIONS

Schedule 1: Maps

Premises map

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

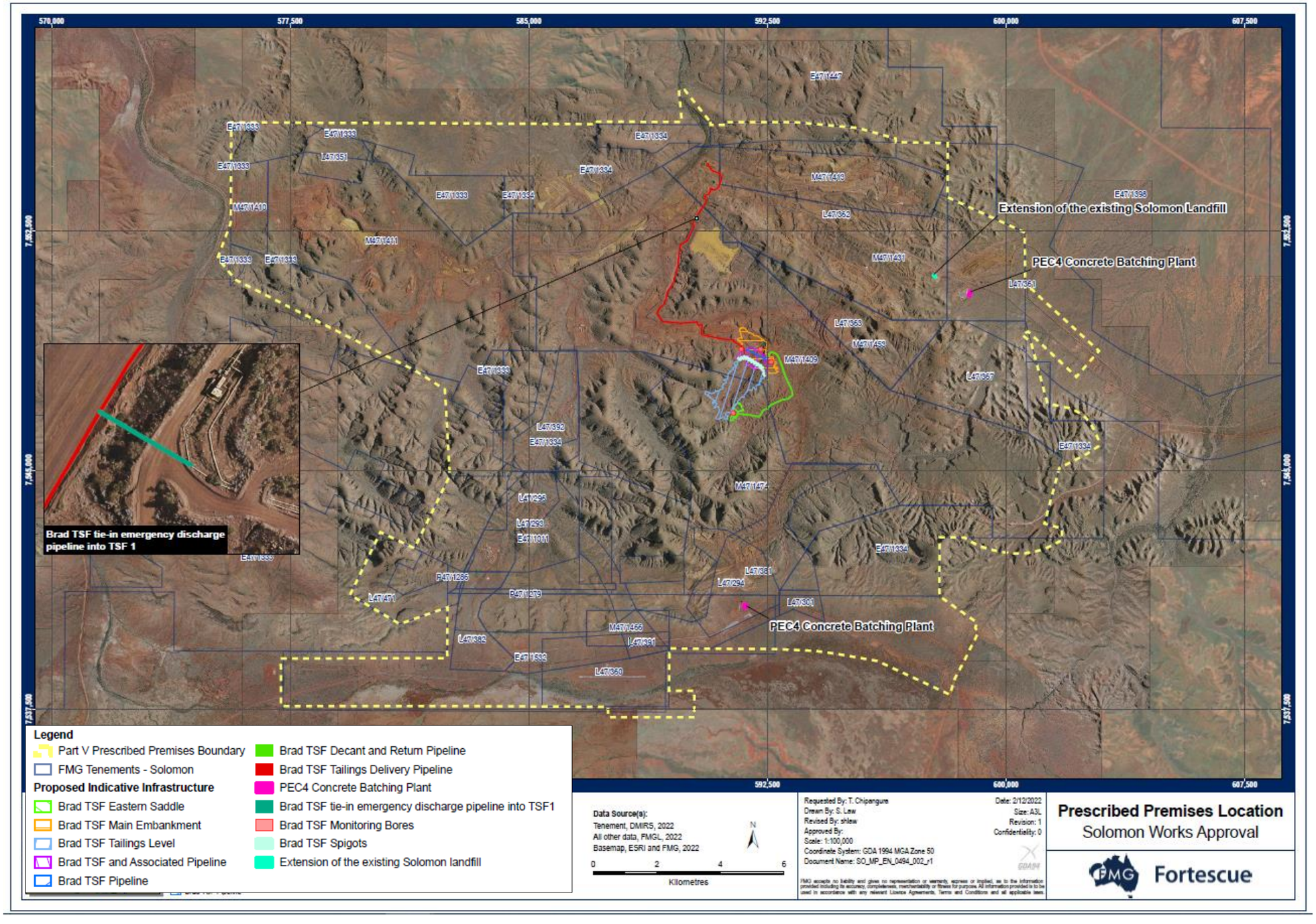


Figure 1: Map of the boundary of the prescribed premises

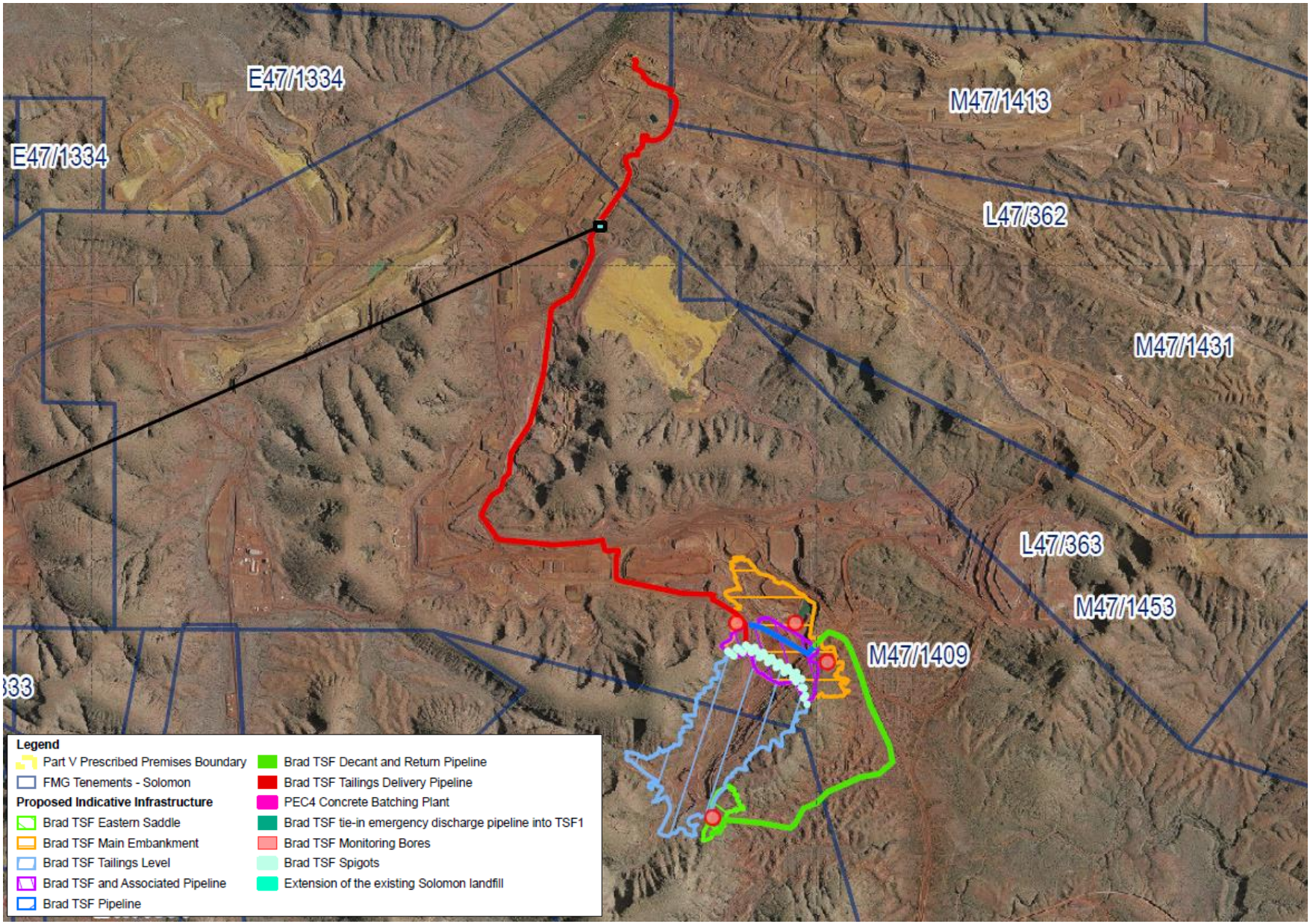


Figure 2 Brad TSF and pipeline locations, zoomed extent

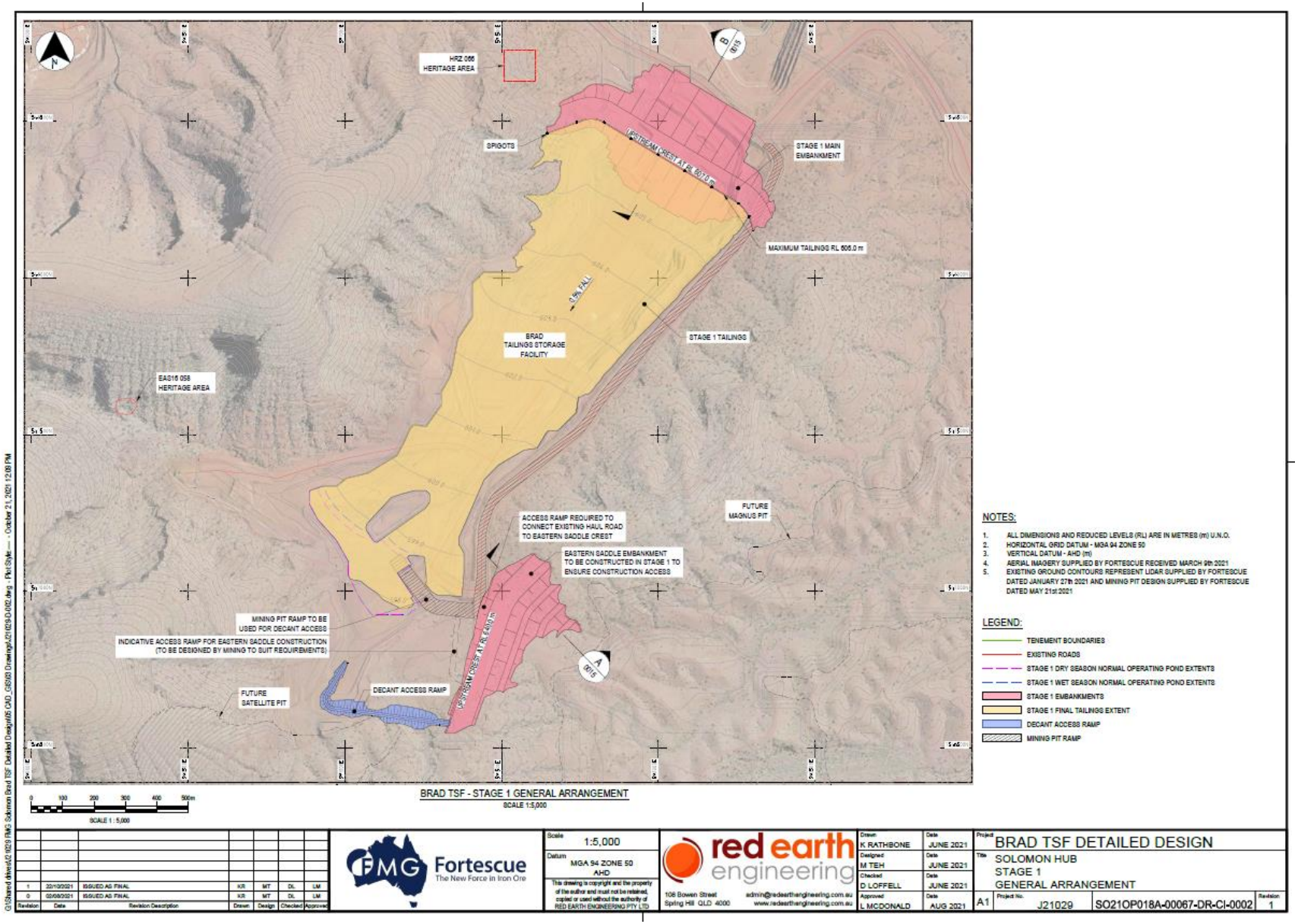


Figure 3 Brad TSF - Stage 1

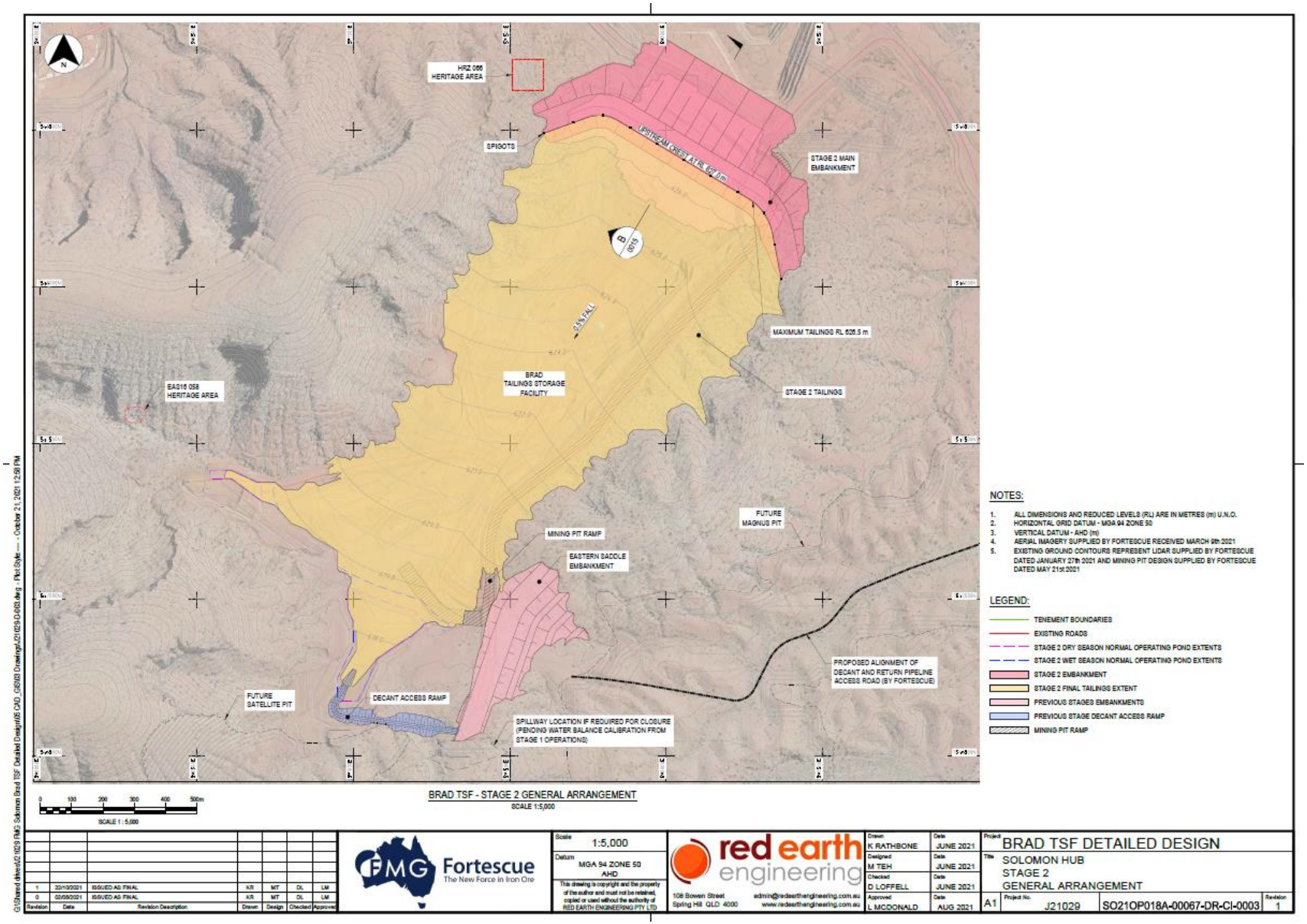
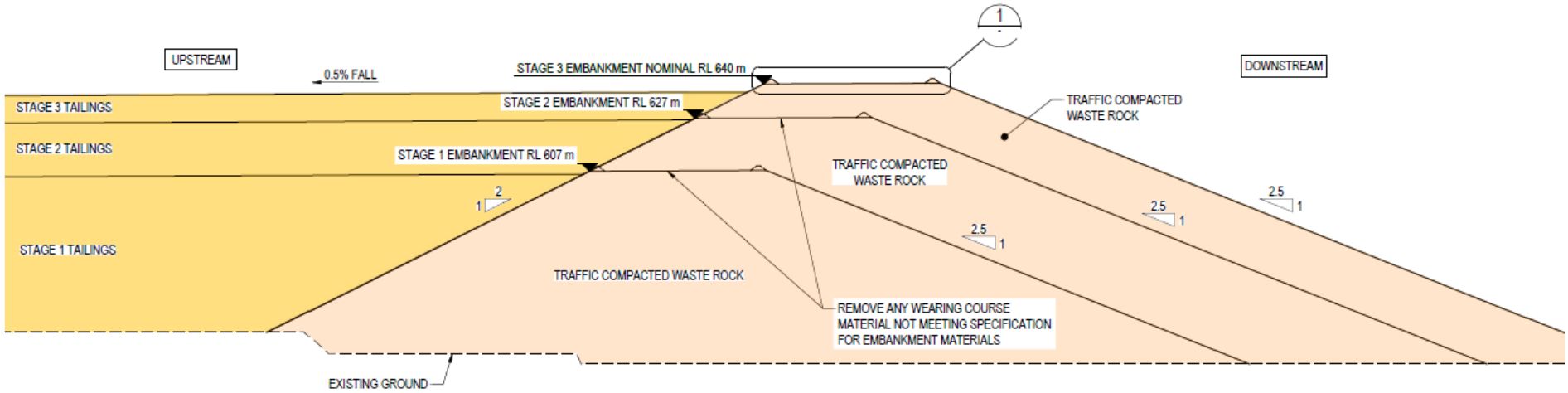
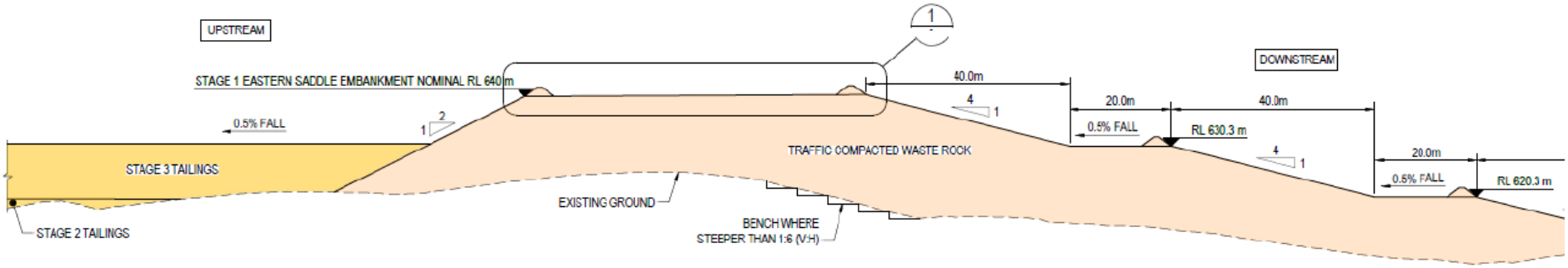


Figure 4 Brad TSF - Stage 2



Main Embankment – typical section



Eastern Saddle Embankment – typical section

Figure 5 Typical embankment sections for main and eastern saddle embankment. Note that stages 1 and 2 for main embankment are authorised under this approval only. Eastern embankment to 640 m RL authorised under this approval

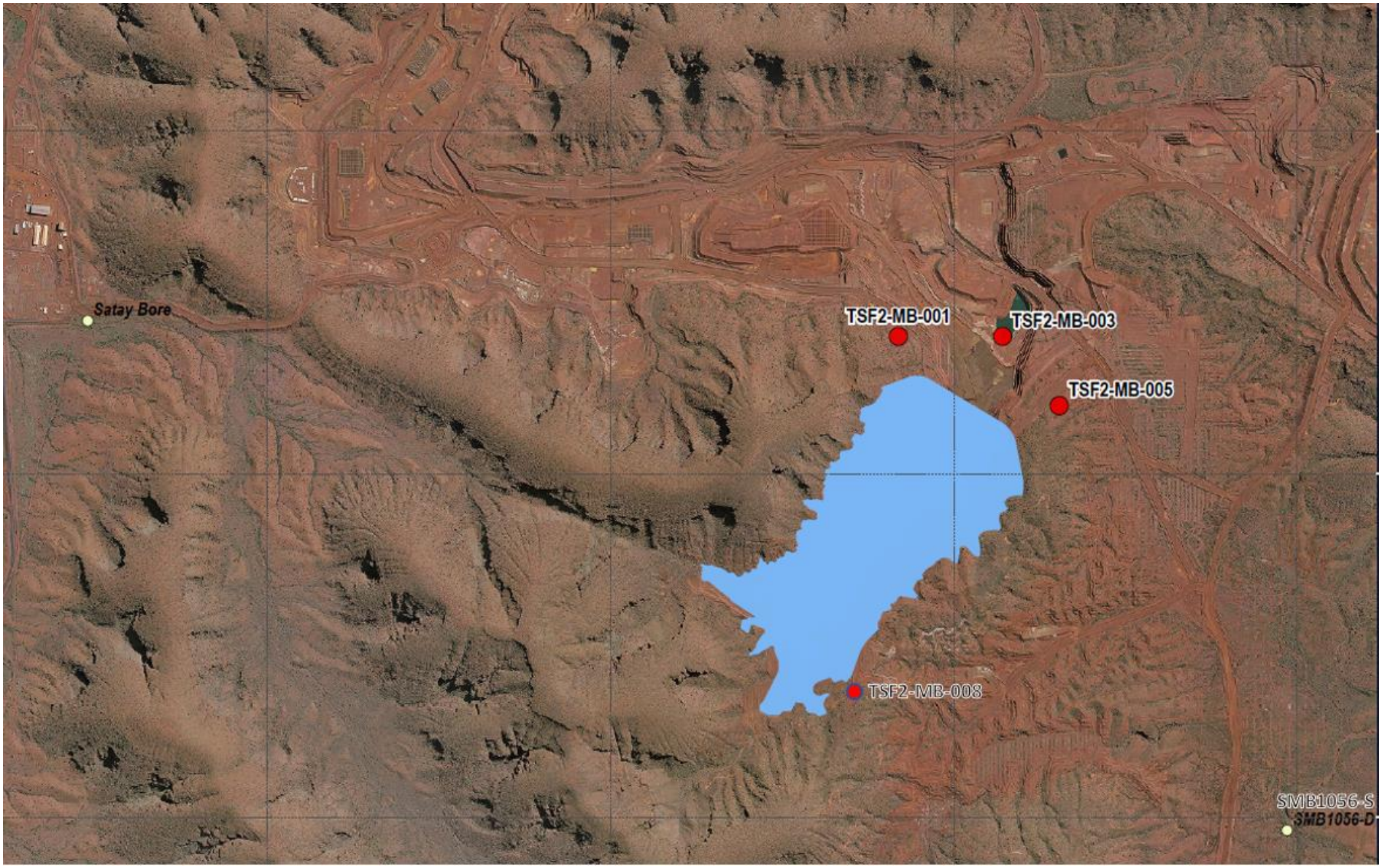


Figure 6 Brad TSF monitoring bore locations (new monitoring shown bores in red, existing in yellow)

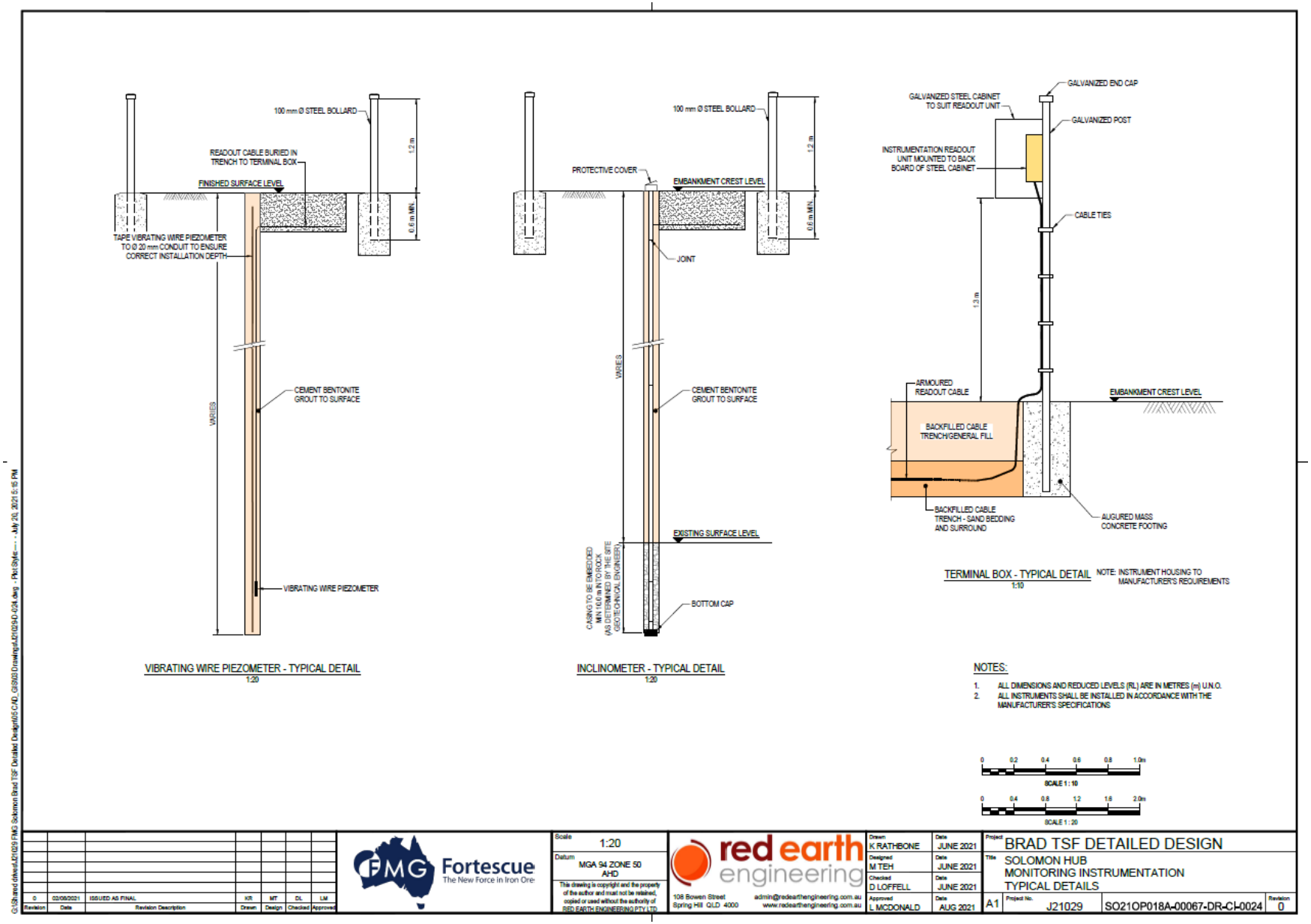


Figure 7 Monitoring instrumentation - typical detail

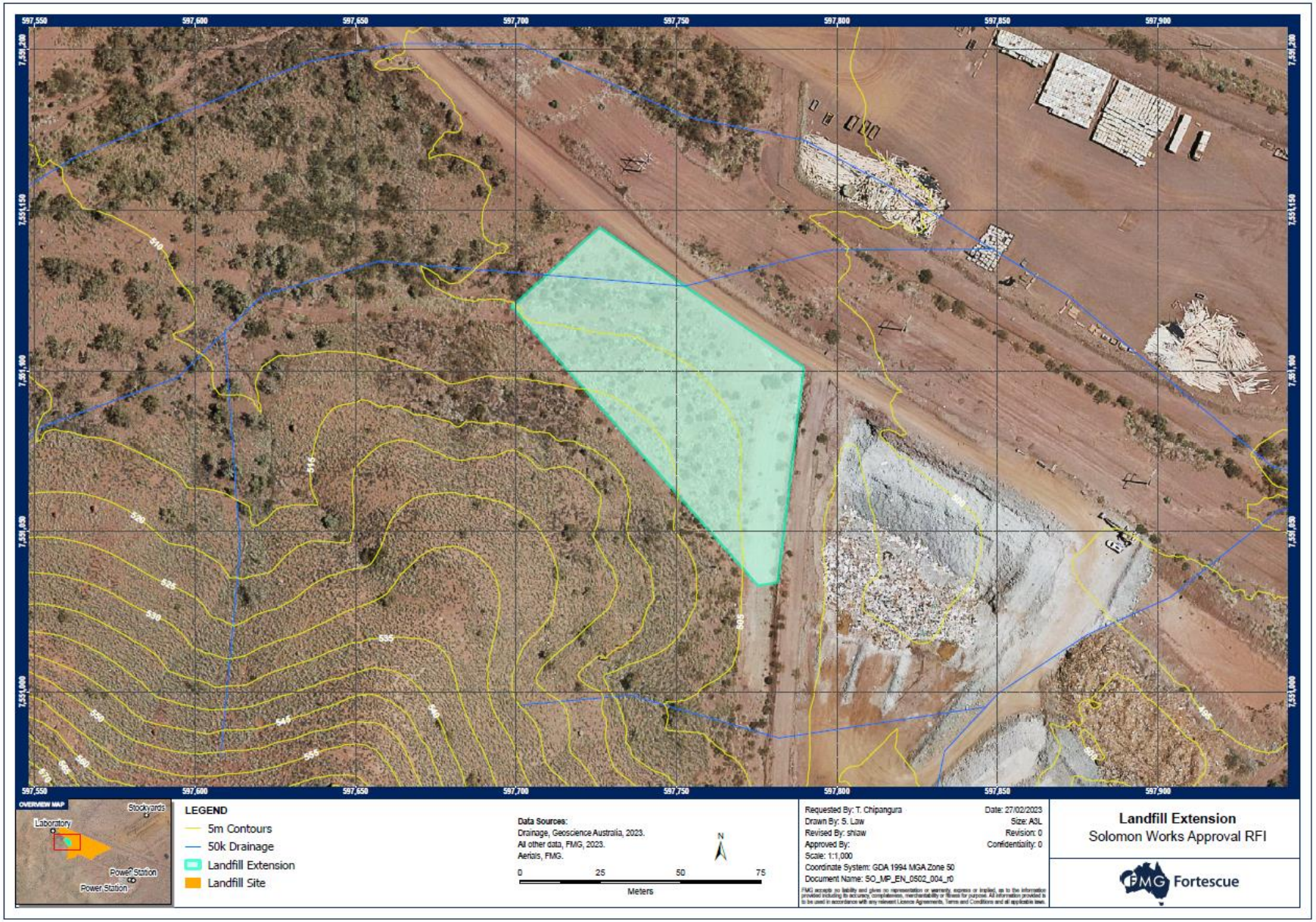


Figure 8 Landfill expansion

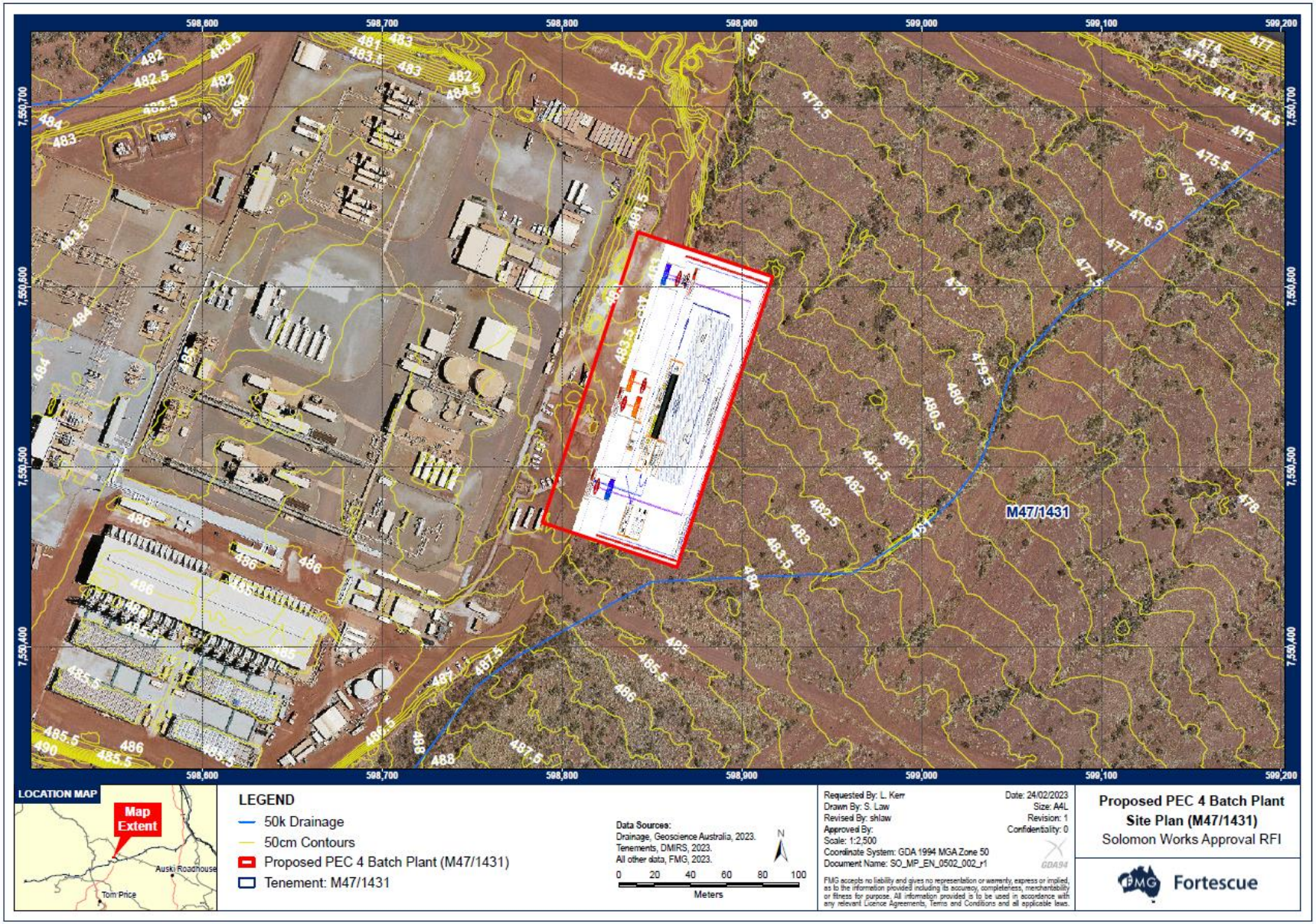


Figure 9 PEC 4 mobile concrete Batching Plant (location within M47/1431)

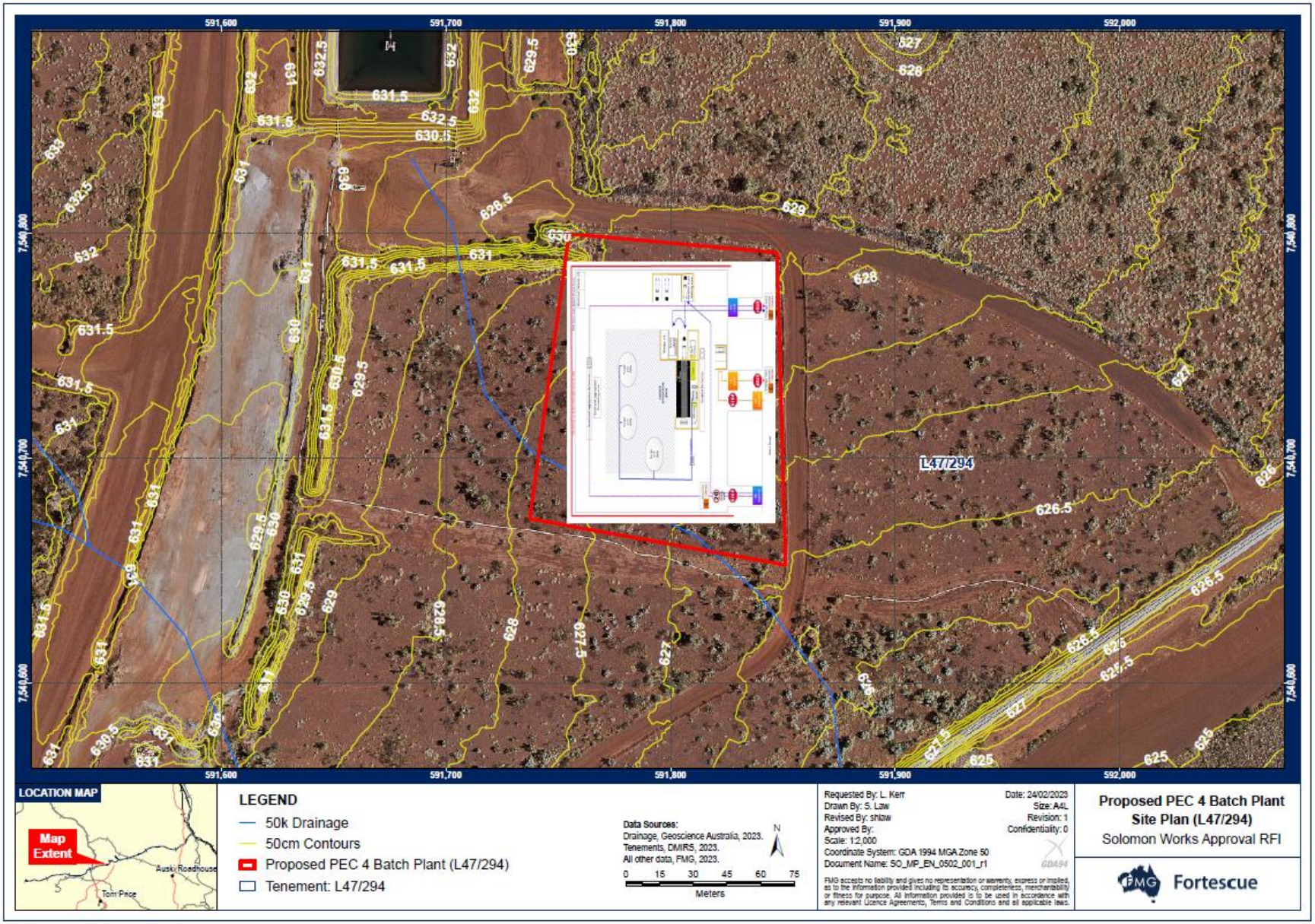


Figure 10 PEC 4 mobile concrete Batching Plant (location within L47/294)

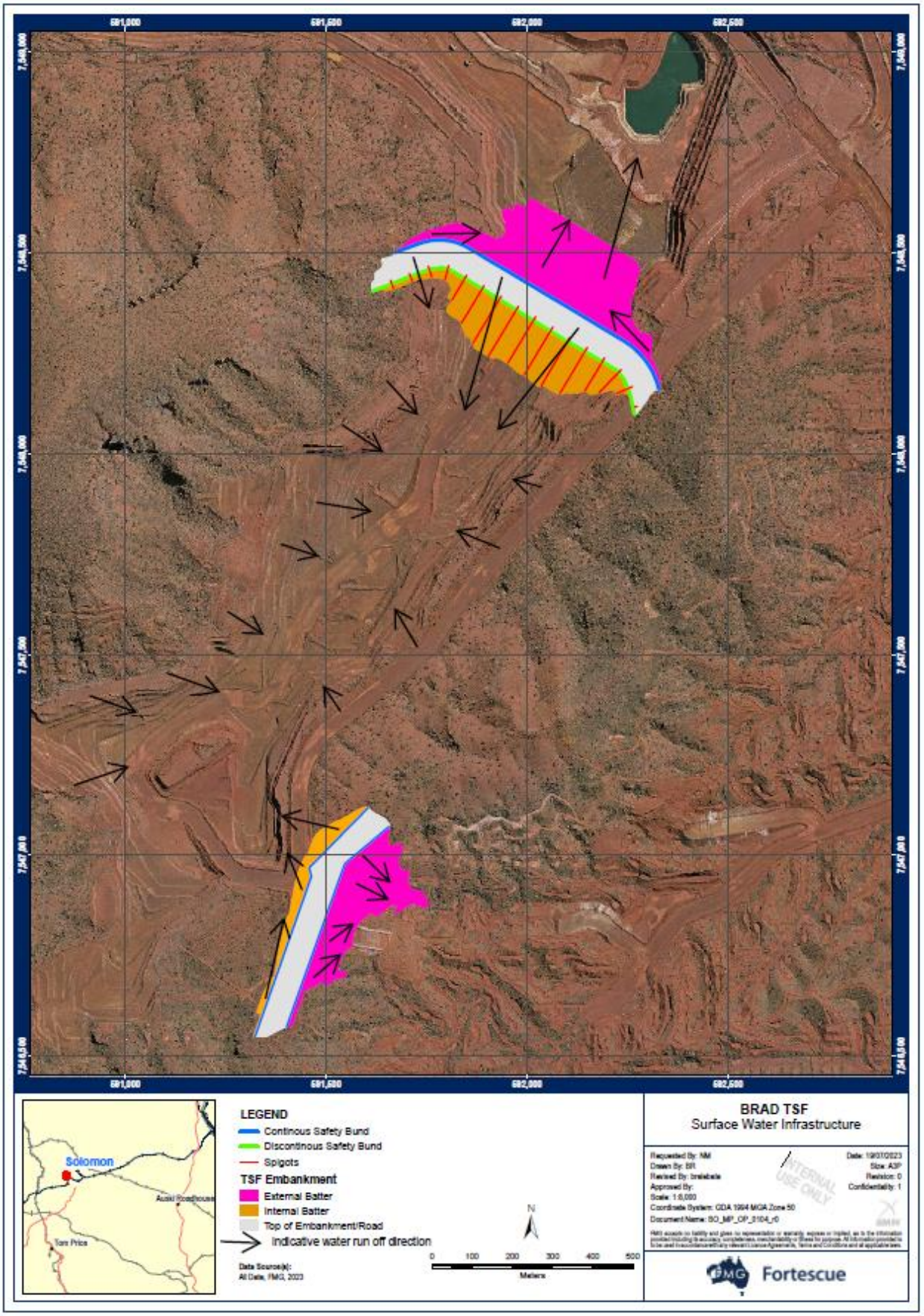


Figure 11 Brad TSF surface water management

Schedule 2: Premises boundary coordinates

ID¤	Easting¤	Northing¤
0¤	590707¤	7555929¤
1¤	590707.1¤	7555842¤
2¤	591117¤	7555840¤
3¤	591117.5¤	7555929¤
4¤	593356.5¤	7555928¤
5¤	595350.4¤	7555742¤
6¤	596532.9¤	7555415¤
7¤	596533.2¤	7555296¤
8¤	598169.4¤	7555270¤
9¤	598157.5¤	7553568¤
10¤	598157.5¤	7553568¤
11¤	600586.3¤	7552464¤
12¤	600586.4¤	7552439¤
13¤	600597.6¤	7550683¤
14¤	600810.6¤	7550683¤
15¤	601073.5¤	7550427¤
16¤	602694.6¤	7548944¤
17¤	602916.1¤	7548742¤
18¤	602209.8¤	7547932¤
19¤	600692.6¤	7549349¤
20¤	600495.8¤	7549257¤
21¤	600755.4¤	7549034¤
22¤	600784.3¤	7549009¤
23¤	600784.3¤	7549009¤
24¤	600907.7¤	7548552¤
25¤	600942.6¤	7548423¤
26¤	600979.1¤	7548288¤
27¤	601013¤	7548162¤
28¤	601008.1¤	7548157¤
29¤	601016.1¤	7548150¤
30¤	601162.2¤	7547609¤
31¤	601196.2¤	7547483¤
32¤	601295.4¤	7547116¤
33¤	601498.6¤	7547048¤
34¤	601732.8¤	7546999¤
35¤	601967.1¤	7546949¤
36¤	602152¤	7546875¤
37¤	602324.6¤	7546789¤
38¤	602509.6¤	7546641¤
39¤	602682.2¤	7546407¤
40¤	602805.5¤	7546185¤
41¤	602904.1¤	7545951¤
42¤	602904.1¤	7545753¤
43¤	602901¤	7545749¤
44¤	602885¤	7545738¤
45¤	602868.7¤	7545728¤
46¤	602835.5¤	7545706¤
47¤	602818.9¤	7545695¤
48¤	602818.6¤	7545695¤
49¤	602785.3¤	7545673¤
50¤	602768.7¤	7545662¤
51¤	602768.6¤	7545662¤
52¤	602751.8¤	7545651¤
53¤	602751.6¤	7545651¤
54¤	602735.1¤	7545640¤
55¤	602718.5¤	7545629¤
56¤	602718.1¤	7545629¤
57¤	602684.7¤	7545607¤
58¤	602684.5¤	7545607¤
59¤	602667.7¤	7545596¤
60¤	602667.4¤	7545596¤
61¤	602650.7¤	7545585¤
62¤	602650.3¤	7545585¤
63¤	602633.6¤	7545574¤
64¤	602633.4¤	7545574¤
65¤	602599.9¤	7545552¤
66¤	602599.4¤	7545551¤
67¤	602582.7¤	7545540¤
68¤	602582.2¤	7545540¤
69¤	602565.5¤	7545529¤
70¤	602548.9¤	7545518¤
71¤	602548.7¤	7545518¤
72¤	602533.6¤	7545508¤
73¤	602523¤	7545501¤
74¤	602515.3¤	7545496¤
75¤	602508¤	7545492¤
76¤	602500.4¤	7545487¤
77¤	602492.5¤	7545482¤
78¤	602485¤	7545478¤
79¤	602477.3¤	7545474¤
80¤	602469.4¤	7545469¤
81¤	602461.5¤	7545465¤
82¤	602452.2¤	7545460¤
83¤	602437.9¤	7545453¤
84¤	602437.8¤	7545453¤
85¤	602420¤	7545444¤
86¤	602366.8¤	7545417¤
87¤	602349.2¤	7545408¤
88¤	602348.8¤	7545408¤
89¤	602331.3¤	7545399¤
90¤	602313.7¤	7545390¤
91¤	602313.5¤	7545390¤
92¤	602295.7¤	7545381¤
93¤	602295.3¤	7545381¤
94¤	602277.7¤	7545372¤
95¤	602260.1¤	7545363¤
96¤	602259.7¤	7545363¤
97¤	602242¤	7545354¤
98¤	602224.4¤	7545345¤
99¤	602223.4¤	7545344¤
100¤	602187.8¤	7545326¤
101¤	602187.4¤	7545326¤
102¤	602169.6¤	7545317¤
103¤	602169.4¤	7545317¤
104¤	602151.6¤	7545308¤
105¤	602151.2¤	7545307¤
106¤	602133.4¤	7545298¤

107¤	602133¤	7545298¤
108¤	602115.2¤	7545289¤
109¤	602115¤	7545289¤
110¤	602097.3¤	7545280¤
111¤	602079.6¤	7545271¤
112¤	602079¤	7545270¤
113¤	602061.4¤	7545261¤
114¤	602026¤	7545243¤
115¤	602025.6¤	7545243¤
116¤	602008¤	7545234¤
117¤	601990.4¤	7545225¤
118¤	601990¤	7545225¤
119¤	601972.4¤	7545216¤
120¤	601954.8¤	7545207¤
121¤	601954.4¤	7545207¤
122¤	601936.8¤	7545198¤
123¤	601919.3¤	7545189¤
124¤	601902.2¤	7545180¤
125¤	601886¤	7545172¤
126¤	601870¤	7545164¤
127¤	601854¤	7545155¤
128¤	601838¤	7545147¤
129¤	601822¤	7545140¤
130¤	601806.5¤	7545132¤
131¤	601805.1¤	7545131¤
132¤	601794.9¤	7545126¤
133¤	601794.4¤	7545126¤
134¤	601789.6¤	7545123¤
135¤	601773.7¤	7545116¤
136¤	601757¤	7545107¤
137¤	601739.5¤	7545099¤
138¤	601735.3¤	7545097¤
139¤	601733.1¤	7545096¤
140¤	601733¤	7545096¤
141¤	601717.3¤	7545088¤
142¤	601716.4¤	7545087¤
143¤	601714.2¤	7545086¤
144¤	601709.7¤	7545084¤

145¤	601707.2¤	7545083¤
146¤	601706.8¤	7545083¤
147¤	601694.3¤	7545076¤
148¤	601693.5¤	7545076¤
149¤	601688.2¤	7545073¤
150¤	601683.4¤	7545071¤
151¤	601680.7¤	7545069¤
152¤	601680.1¤	7545069¤
153¤	601671.7¤	7545065¤
154¤	601203.5¤	7543319¤
155¤	601203.6¤	7543319¤
156¤	601757.1¤	7543167¤
157¤	601757.6¤	7542865¤
158¤	601757.6¤	7542805¤
159¤	601744.8¤	7542798¤
160¤	601742.2¤	7542797¤
161¤	601724.6¤	7542787¤
162¤	601721.7¤	7542786¤
163¤	601704.1¤	7542777¤
164¤	601701.6¤	7542775¤
165¤	601684¤	7542766¤
166¤	601681.3¤	7542764¤
167¤	601663.6¤	7542755¤
168¤	601660.6¤	7542753¤
169¤	601642.9¤	7542744¤
170¤	601640.4¤	7542743¤
171¤	601622.6¤	7542734¤
172¤	601620.2¤	7542732¤
173¤	601602.4¤	7542723¤
174¤	601599.4¤	7542722¤
175¤	601596.6¤	7542720¤
176¤	601590.3¤	7542717¤
177¤	601583.4¤	7542713¤
178¤	601566.3¤	7542705¤
179¤	601549.5¤	7542696¤
180¤	601532.7¤	7542687¤
181¤	601515.8¤	7542679¤
182¤	601498.8¤	7542670¤

183¤	601482.1¤	7542661¤
184¤	601465.4¤	7542652¤
185¤	601448.6¤	7542643¤
186¤	601431.4¤	7542634¤
187¤	601430¤	7542634¤
188¤	601426.2¤	7542632¤
189¤	601417.4¤	7542627¤
190¤	601409.8¤	7542623¤
191¤	601405.4¤	7542621¤
192¤	601398.8¤	7542617¤
193¤	601390.9¤	7542614¤
194¤	601374.3¤	7542605¤
195¤	601370.8¤	7542604¤
196¤	601365.2¤	7542601¤
197¤	601357.6¤	7542597¤
198¤	601339.5¤	7542589¤
199¤	601335.5¤	7542587¤
200¤	601329.5¤	7542584¤
201¤	601321.5¤	7542580¤
202¤	601303.2¤	7542572¤
203¤	601299.2¤	7542570¤
204¤	601293.2¤	7542568¤
205¤	601285.3¤	7542564¤
206¤	601266.9¤	7542557¤
207¤	601263¤	7542555¤
208¤	601257.2¤	7542552¤
209¤	601249.6¤	7542549¤
210¤	601231¤	7542542¤
211¤	601226.7¤	7542540¤
212¤	601220.6¤	7542538¤
213¤	601212.6¤	7542535¤
214¤	601194¤	7542528¤
215¤	601189.7¤	7542526¤
216¤	601183.6¤	7542524¤
217¤	601175.8¤	7542521¤
218¤	601156.9¤	7542514¤
219¤	601152.6¤	7542513¤
220¤	601146.6¤	7542510¤

221¤	601138.9¤	7542508¤
222¤	601119.9¤	7542501¤
223¤	601115.4¤	7542500¤
224¤	601109.2¤	7542498¤
225¤	601101.4¤	7542495¤
226¤	601082.3¤	7542489¤
227¤	601078.4¤	7542488¤
228¤	601072.9¤	7542486¤
229¤	601065.9¤	7542484¤
230¤	601058.5¤	7542482¤
231¤	601047.1¤	7542479¤
232¤	601043.5¤	7542478¤
233¤	601038.3¤	7542476¤
234¤	601031.7¤	7542474¤
235¤	601026¤	7542473¤
236¤	601014.4¤	7542469¤
237¤	601010.9¤	7542468¤
238¤	601005.9¤	7542467¤
239¤	600999.6¤	7542465¤
240¤	600980.2¤	7542460¤
241¤	600977.3¤	7542459¤
242¤	600972.9¤	7542458¤
243¤	600967.2¤	7542457¤
244¤	600947.8¤	7542452¤
245¤	600944.4¤	7542451¤
246¤	600939.7¤	7542450¤
247¤	600933.7¤	7542448¤
248¤	600914.3¤	7542444¤
249¤	600911¤	7542443¤
250¤	600906.4¤	7542442¤
251¤	600900.6¤	7542441¤
252¤	600881.1¤	7542436¤
253¤	600877.6¤	7542436¤
254¤	600872.9¤	7542434¤
255¤	600867.1¤	7542433¤
256¤	600847.5¤	7542429¤
257¤	600844¤	7542428¤
258¤	600839.3¤	7542428¤

259¤	600833.6¤	7542426¤
260¤	600819.8¤	7542424¤
261¤	600819.3¤	7542424¤
262¤	600813.4¤	7542423¤
263¤	600810¤	7542422¤
264¤	600805.6¤	7542421¤
265¤	600800.2¤	7542420¤
266¤	600780.5¤	7542417¤
267¤	600777.3¤	7542416¤
268¤	600773.1¤	7542415¤
269¤	600768.1¤	7542414¤
270¤	600763.3¤	7542414¤
271¤	600762.8¤	7542414¤
272¤	600761.1¤	7542413¤
273¤	600746.1¤	7542411¤
274¤	600742.7¤	7542410¤
275¤	600738.3¤	7542410¤
276¤	600733.1¤	7542409¤
277¤	600713.3¤	7542406¤
278¤	600709.9¤	7542405¤
279¤	600705.7¤	7542405¤
280¤	600700.7¤	7542404¤
281¤	600680.8¤	7542401¤
282¤	600677.2¤	7542401¤
283¤	600672.9¤	7542400¤
284¤	600667.8¤	7542400¤
285¤	600648¤	7542397¤
286¤	600644.6¤	7542397¤
287¤	600640.6¤	7542396¤
288¤	600635.9¤	7542396¤
289¤	600616¤	7542394¤
290¤	600612.3¤	7542393¤
291¤	600607.9¤	7542393¤
292¤	600602.9¤	7542392¤
293¤	600583¤	7542390¤
294¤	600579.3¤	7542390¤
295¤	600575.1¤	7542390¤
296¤	600570.4¤	7542389¤

297¤	600550.5¤	7542387¤
298¤	600546.8¤	7542387¤
299¤	600542.5¤	7542387¤
300¤	600537.9¤	7542386¤
301¤	600518¤	7542385¤
302¤	600514¤	7542385¤
303¤	600509.6¤	7542384¤
304¤	600504.9¤	7542384¤
305¤	600484.9¤	7542383¤
306¤	600481¤	7542383¤
307¤	600476.8¤	7542382¤
308¤	600472.3¤	7542382¤
309¤	600452.4¤	7542381¤
310¤	600448.4¤	7542381¤
311¤	600444.2¤	7542381¤
312¤	600439.8¤	7542381¤
313¤	600419.8¤	7542380¤
314¤	600415.6¤	7542380¤
315¤	600411.2¤	7542380¤
316¤	600406.7¤	7542380¤
317¤	600386.7¤	7542379¤
318¤	600380.6¤	7542379¤
319¤	600374.3¤	7542379¤
320¤	600368.1¤	7542379¤
321¤	600348.1¤	7542379¤
322¤	600341.4¤	7542379¤
323¤	600334.7¤	7542379¤
324¤	600328.2¤	7542379¤
325¤	600311.5¤	7542379¤
326¤	600310.9¤	7542379¤
327¤	600310.4¤	7542379¤
328¤	600310.1¤	7542379¤
329¤	600306.8¤	7542379¤
330¤	600300.7¤	7542380¤
331¤	600294.6¤	7542380¤
332¤	600288.8¤	7542380¤
333¤	600268.8¤	7542381¤
334¤	600262¤	7542381¤

335¤	600255.4¤	7542381¤
336¤	600249.2¤	7542382¤
337¤	600229.2¤	7542383¤
338¤	600222.4¤	7542383¤
339¤	600215.9¤	7542384¤
340¤	600209.8¤	7542384¤
341¤	600196.2¤	7542385¤
342¤	600195.5¤	7542385¤
343¤	600195.5¤	7542385¤
344¤	600189.2¤	7542386¤
345¤	600182.3¤	7542386¤
346¤	600175.9¤	7542387¤
347¤	600170¤	7542387¤
348¤	600150.1¤	7542389¤
349¤	600142.8¤	7542390¤
350¤	600136.1¤	7542390¤
351¤	600130¤	7542391¤
352¤	600110.1¤	7542393¤
353¤	600103.2¤	7542394¤
354¤	600096.9¤	7542395¤
355¤	600091.4¤	7542396¤
356¤	600071.6¤	7542398¤
357¤	600064.1¤	7542399¤
358¤	600057.4¤	7542400¤
359¤	600051.5¤	7542401¤
360¤	600031.7¤	7542404¤
361¤	600024.6¤	7542406¤
362¤	600018.4¤	7542407¤
363¤	600013.2¤	7542407¤
364¤	599993.5¤	7542411¤
365¤	599993.3¤	7542411¤
366¤	599975.4¤	7542414¤
367¤	599974.5¤	7542414¤
368¤	599973.8¤	7542414¤
369¤	599954¤	7542418¤
370¤	599953.9¤	7542418¤
371¤	599938.4¤	7542420¤
372¤	599934.8¤	7542421¤
373¤	599934.3¤	7542421¤
374¤	599914.6¤	7542425¤
375¤	599894.9¤	7542428¤
376¤	599894.9¤	7542428¤
377¤	599875.4¤	7542431¤
378¤	599856¤	7542435¤
379¤	599855.5¤	7542435¤
380¤	599835.8¤	7542438¤
381¤	599816.6¤	7542442¤
382¤	599797.4¤	7542445¤
383¤	599793.1¤	7542446¤
384¤	599789.7¤	7542446¤
385¤	599787.3¤	7542447¤
386¤	599767.7¤	7542450¤
387¤	599763.6¤	7542451¤
388¤	599760.5¤	7542452¤
389¤	599758.5¤	7542452¤
390¤	599738.9¤	7542456¤
391¤	599734.8¤	7542457¤
392¤	599731.8¤	7542457¤
393¤	599729.9¤	7542458¤
394¤	599710.3¤	7542462¤
395¤	599706¤	7542463¤
396¤	599702.8¤	7542463¤
397¤	599700.8¤	7542464¤
398¤	599681.2¤	7542468¤
399¤	599677¤	7542469¤
400¤	599674¤	7542469¤
401¤	599672.1¤	7542470¤
402¤	599652.6¤	7542474¤
403¤	599648.3¤	7542475¤
404¤	599645.3¤	7542476¤
405¤	599643.5¤	7542476¤
406¤	599624¤	7542481¤
407¤	599619.8¤	7542482¤
408¤	599616.8¤	7542482¤
409¤	599615¤	7542483¤
410¤	599595.6¤	7542488¤
411¤	599591.3¤	7542489¤
412¤	599588.2¤	7542489¤
413¤	599586.5¤	7542490¤
414¤	599567.1¤	7542495¤
415¤	599562.6¤	7542496¤
416¤	599559.4¤	7542497¤
417¤	599557.5¤	7542497¤
418¤	599538.2¤	7542502¤
419¤	599534.1¤	7542503¤
420¤	599531.4¤	7542504¤
421¤	599530.2¤	7542504¤
422¤	599510.9¤	7542510¤
423¤	599507.3¤	7542511¤
424¤	599505.1¤	7542511¤
425¤	599504.4¤	7542511¤
426¤	599485.1¤	7542517¤
427¤	599481.4¤	7542518¤
428¤	599479.2¤	7542518¤
429¤	599478.5¤	7542519¤
430¤	599462.8¤	7542523¤
431¤	599459.4¤	7542524¤
432¤	599456.2¤	7542525¤
433¤	599454.5¤	7542525¤
434¤	599454.3¤	7542525¤
435¤	599435.1¤	7542531¤
436¤	599431.4¤	7542532¤
437¤	599429.2¤	7542533¤
438¤	599428.5¤	7542533¤
439¤	599409.3¤	7542539¤
440¤	599406¤	7542540¤
441¤	599404.1¤	7542540¤
442¤	599403.8¤	7542540¤
443¤	599384.7¤	7542546¤
444¤	599381¤	7542547¤
445¤	599378.8¤	7542548¤
446¤	599378.2¤	7542548¤
447¤	599359.2¤	7542554¤
448¤	599355.8¤	7542555¤

449¤	599354.1¤	7542556¤
450¤	599354¤	7542556¤
451¤	599334.9¤	7542562¤
452¤	599331.2¤	7542563¤
453¤	599329¤	7542564¤
454¤	599328.5¤	7542564¤
455¤	599309.5¤	7542570¤
456¤	599306¤	7542571¤
457¤	599304.1¤	7542572¤
458¤	599303.9¤	7542572¤
459¤	599284.9¤	7542578¤
460¤	599280.9¤	7542580¤
461¤	599278.5¤	7542580¤
462¤	599277.8¤	7542581¤
463¤	599258.9¤	7542587¤
464¤	599251.7¤	7542589¤
465¤	599246.2¤	7542591¤
466¤	599242.5¤	7542593¤
467¤	599223.6¤	7542600¤
468¤	599215.8¤	7542602¤
469¤	599209.7¤	7542605¤
470¤	599205.4¤	7542606¤
471¤	599186.7¤	7542613¤
472¤	599178.9¤	7542616¤
473¤	599172.8¤	7542619¤
474¤	599168.7¤	7542621¤
475¤	599150.1¤	7542628¤
476¤	599142.2¤	7542631¤
477¤	599136.2¤	7542634¤
478¤	599132.1¤	7542635¤
479¤	599113.7¤	7542643¤
480¤	599105.8¤	7542647¤
481¤	599100¤	7542649¤
482¤	599096.1¤	7542651¤
483¤	599077.8¤	7542659¤
484¤	599069.9¤	7542663¤
485¤	599064¤	7542666¤
486¤	599060.2¤	7542667¤

487¤	599042.1¤	7542676¤
488¤	599034.1¤	7542680¤
489¤	599028.1¤	7542683¤
490¤	599024.2¤	7542685¤
491¤	599006.3¤	7542694¤
492¤	598998.5¤	7542697¤
493¤	598992.8¤	7542700¤
494¤	598989.3¤	7542702¤
495¤	598971.5¤	7542711¤
496¤	598963.6¤	7542716¤
497¤	598957.9¤	7542719¤
498¤	598954.3¤	7542721¤
499¤	598936.7¤	7542730¤
500¤	598929.1¤	7542734¤
501¤	598923.6¤	7542738¤
502¤	598920.3¤	7542739¤
503¤	598902.9¤	7542749¤
504¤	598895.9¤	7542753¤
505¤	598891.1¤	7542756¤
506¤	598888.4¤	7542758¤
507¤	598871.2¤	7542768¤
508¤	598863.5¤	7542773¤
509¤	598857.9¤	7542776¤
510¤	598854.6¤	7542778¤
511¤	598837.6¤	7542789¤
512¤	598829.9¤	7542793¤
513¤	598824.5¤	7542797¤
514¤	598821.3¤	7542799¤
515¤	598804.5¤	7542810¤
516¤	598797¤	7542815¤
517¤	598791.8¤	7542818¤
518¤	598788.8¤	7542820¤
519¤	598772.2¤	7542831¤
520¤	598764.7¤	7542836¤
521¤	598759.6¤	7542840¤
522¤	598756.6¤	7542842¤
523¤	598740.3¤	7542854¤
524¤	598732.9¤	7542859¤

525¤	598727.8¤	7542862¤
526¤	598724.9¤	7542865¤
527¤	598708.8¤	7542876¤
528¤	598701.3¤	7542882¤
529¤	598697.9¤	7542884¤
530¤	597913.4¤	7542889¤
531¤	597901.8¤	7541044¤
532¤	598954.6¤	7540306¤
533¤	599089.1¤	7540212¤
534¤	599063.6¤	7540136¤
535¤	599060.8¤	7540129¤
536¤	599038.5¤	7540076¤
537¤	599038.5¤	7540043¤
538¤	599065.8¤	7539989¤
539¤	599104.7¤	7539950¤
540¤	599106.2¤	7539865¤
541¤	599071.4¤	7539791¤
542¤	599019.5¤	7539680¤
543¤	598997.5¤	7539652¤
544¤	598938.7¤	7539532¤
545¤	598821¤	7539291¤
546¤	598644.6¤	7538929¤
547¤	598633.3¤	7538919¤
548¤	598607.1¤	7538854¤
549¤	598582.7¤	7538829¤
550¤	598580.4¤	7538823¤
551¤	598543.7¤	7538737¤
552¤	598517.4¤	7538707¤
553¤	598491.2¤	7538642¤
554¤	598467.3¤	7538616¤
555¤	598402.3¤	7538477¤
556¤	598388.6¤	7538447¤
557¤	598380.7¤	7538430¤
558¤	598379.1¤	7538425¤
559¤	598276¤	7538084¤
560¤	598254.7¤	7538013¤
561¤	598235¤	7537948¤
562¤	598210.7¤	7537959¤

563¤	598008.7¤	7537348¤
564¤	597917.2¤	7537071¤
565¤	597876.1¤	7536947¤
566¤	597639¤	7536229¤
567¤	597539.8¤	7535929¤
568¤	597448.9¤	7535654¤
569¤	597182.9¤	7535655¤
570¤	597126.4¤	7535656¤
571¤	597126.4¤	7535656¤
572¤	597020.6¤	7535656¤
573¤	597874.3¤	7538074¤
574¤	597884.1¤	7538110¤
575¤	595952.9¤	7539004¤
576¤	594682.9¤	7539226¤
577¤	593997.1¤	7539322¤
578¤	592738.7¤	7539378¤
579¤	589441.4¤	7539397¤
580¤	589440.5¤	7539250¤
581¤	589416.5¤	7539250¤
582¤	589407.5¤	7538071¤

583¤	590204¤	7538071¤
584¤	590204¤	7537239¤
585¤	587489.4¤	7537239¤
586¤	587489.4¤	7537563¤
587¤	586304.3¤	7537570¤
588¤	582436.7¤	7537591¤
589¤	577208.2¤	7537591¤
590¤	577208.2¤	7538727¤
591¤	577200.6¤	7539083¤
592¤	582433.5¤	7539095¤
593¤	582433.1¤	7539289¤
594¤	582440.5¤	7540694¤
595¤	580942.4¤	7540165¤
596¤	579378.5¤	7541083¤
597¤	580331.9¤	7543054¤
598¤	581401¤	7542549¤
599¤	582515¤	7544826¤
600¤	582359.4¤	7547531¤
601¤	581439.6¤	7548119¤
602¤	575783.5¤	7550977¤

603¤	575218.6¤	7551655¤
604¤	575628.3¤	7552766¤
605¤	575636.8¤	7554516¤
606¤	575636.8¤	7554516¤
607¤	575643.6¤	7555922¤
608¤	577362.8¤	7555914¤
609¤	577959.1¤	7555911¤
610¤	577972.4¤	7555915¤
611¤	577976¤	7555909¤
612¤	580247.1¤	7555902¤
613¤	584239.9¤	7555882¤
614¤	585959.1¤	7555873¤
615¤	587136.7¤	7555866¤
616¤	587137.2¤	7555947¤
617¤	589806.6¤	7555934¤
618¤	589716.5¤	7556944¤
619¤	589896.5¤	7556939¤
620¤	590707¤	7555929¤

Schedule 3: Groundwater monitoring quality assurance and quality control

The licence 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.