Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6526/2021/1
Works approval holder	Murrin Murrin Operations Pty Ltd
ACN	060 717 505
Registered business address	Level 3, 30 The Esplanade PERTH WA 6000
DWER file number	DER2021/000132
Duration	26/07/2021 to 25/07/2026
Date of issue	26 July 2021
Date of amendment	20 April 2023
Premises details	Murrin Murrin North Murrin Murrin Nickel Cobalt Project Legal description - Mining tenements M39/342, M39/343, M39/553, M39/424, M39/421 Shire of Leonora and Shire of Laverton

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	5 000 000 tonnes per annum

This amended works approval is granted to the works approval holder, subject to the attached conditions, on 20 April 2023, by:

Lauren Edmands
Digitally signed by Lauren Edmands
Date: 2023.04.20 13:57:01 +08'00'

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

Works approval history

Date	Reference number	Summary of changes
26/07/2021	W6526/2021/1	Works approval granted.
13//05/2022	W6526/2021/1	Works approval amendment to allow for three-staged construction.
20/04/2023	W6526/2021/1	Amendment to tailing / return water pipeline into Series 17 Inpit TSF.

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 requirements	Infrastructure location
1	Stage 1 tailings and decant pipelines, pipeline corridor, scour sump	• HDPE tailings pipeline with total length of approximately 2,100 m and deposition points T1 and T2, within bunded pipeline corridors (approximately 6 m wide, bunded); • HDPE decant pipeline with total length of approximately 400 m and decant point D1, within bunded pipeline corridors (approximately 6 m wide, bunded); • Pipelines equipped with flow meters and telemetry; • Scour sump with capacity of approximately 225 m^3; and • Design of pipeline bunding and scour sump, as per Schedule 1: Figure 3.	Figure 2 Figure 3 Figure 4 Figure 5
	Stage 1 17 Series in-pit TSFs	• Decant pump D1 pumping to existing evaporation ponds; and • Tailings deposition via two discharge points (T1 and T2).	Figure 4 Figure 5
2	Stage 2 tailings and decant pipelines, pipeline corridor	• HDPE tailings pipeline with total length of approximately 500 m and deposition point T3, within bunded pipeline corridors (approximately 6 m wide, bunded). • HDPE decant pipeline with total length of approximately 3,900 m and decant point D3, within bunded pipeline corridors (approximately 6 m wide, bunded). • Pipelines equipped with flow meters and telemetry; and	Figure 2 Figure 3 Figure 4 Figure 5

Item	Infrastructure	Design and construction / installation requirements	Infrastructure location
		• Design of pipeline bunding and scour sump, as per Schedule 1: Figure 3.	
	Stage 2 17 Series in-pit TSFs	• Decant pump D3 pumping to existing evaporation ponds; and • Tailings deposition via one discharge point (T3).	Figure 4 Figure 5
3	Stage 3 tailings and decant pipelines, pipeline corridor	• HDPE tailings pipeline with total length of approximately 2,000 m and deposition points T4 and T5, within bunded pipeline corridors (approximately 6 m wide, bunded); • Pipelines equipped with flow meters and telemetry; and • Design of pipeline bunding and scour sump, as per Schedule 1: Figure 3.	Figure 2 Figure 3 Figure 4 Figure 5
	Stage 3 17 Series in-pit TSFs	• Tailings deposition via two discharge points (T4 and T5).	Figure 4 Figure 5
4	Stage 4, tailing pipeline, pipeline corridor	• HDPE tailing pipeline with total length of approximately 500 m and deposition point T0, within bunded pipeline corridor (approximately 6 m wide, bunded).	Figure 2 Figure 3 Figure 4 Figure 5
	Stage 4, 17 Series In-Pit TSF	• Tailing deposition via one discharge point (T0)	Figure 4 Figure 5

Compliance reporting

2. The works approval holder must within 30 calendar days of an item of infrastructure 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.

3. The Environmental Compliance Report required by condition 2, 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 1, have been constructed 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.

Monitoring

4. The works approval holder must conduct a groundwater monitoring programme in accordance with the requirements specified in Schedule 3 and record the results of all monitoring activity conducted under that programme.

5. 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 4.

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

Time limited operations phase

Commencement and duration

7. The works approval holder may only commence time limited operations for an item of infrastructure identified in condition 1 where:

(a) the Environmental Compliance Report as required by condition 2 has been submitted by the works approval holder for that item of infrastructure; and

(b) the baseline groundwater monitoring required by condition 15 has been performed.

8. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 9 (as applicable):

(a) for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 7 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 8(a)

Time limited operations requirements and emission limits

9. During time limited operations, the works approval holder must ensure that the premises infrastructure and equipment listed in Table 2 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 2.

Table 2: Infrastructure and equipment requirements during time limited operations

	Site infrastructure and equipment	Operational requirement	Infrastructure location
1.	Tailings and decant pipelines, pipeline corridor, scour sump (Stage 1, 2, 3 and 4)	• Flow and telemetry reporting to control room for leak detection • Daily pipeline inspections	Figure 2, Figure 3, Figure 4, Figure 5
2.	17 Series In-pit TSFs (Stage 1, 2, 3 and 4)	• Deposition of tailings and decant liquor from onsite operations • Rotational deposition to maximise desiccation to reduce seepage	Figure 4, Figure 5

	Site infrastructure and equipment	Operational requirement	Infrastructure location
		• Maintaining operational freeboard of 300 mm (total 500 mm) • Supernatant water removed via decant pump, and transferred to existing evaporation pond	
3.	Groundwater monitoring bores	• Baseline monitoring and monitoring during time limited operations as set out in condition 4	Figure 6 Schedule 3

Compliance reporting

10. 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.

11. The works approval holder must ensure the report required by condition 10 includes the following:

(a) a summary of the time limited operations, including timeframes and amount of tailings deposited;

(b) a summary of groundwater monitoring results obtained during time limited operations under condition 4;

(c) a review of performance and compliance against the conditions of the works approval;

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

(i) in-pit TSF water balance;

(ii) interpretation of groundwater monitoring, and plan of action if water level limits are at risk of not being met; and

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

Records and reporting (general)

12. 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.

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

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

(b) any maintenance of infrastructure that is performed in the course of complying with conditions of this works approval;

(c) monitoring programmes undertaken in accordance with condition 4; and

(d) complaints received under condition 12.

14. The books specified under condition 13 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 3 have the meanings defined.

Table 3: Definitions

Term	Definition
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 groundwater*.
Assessment of Site Contamination NEPM	means the *National Environment Protection (Assessment of Site Contamination) Measure 1999*.
books	has the same meaning given to that term under the EP Act.
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department administering the *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 info@dwer.wa.gov.au
condition	a condition to which this works approval is subject under section 62 of the EP Act.
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).
monthly period	means a one-month period commencing from first day of a month until the last day of the same month.

Term	Definition
NATA	means the (Australian) National Association of Testing Authorities.
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.
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.
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).

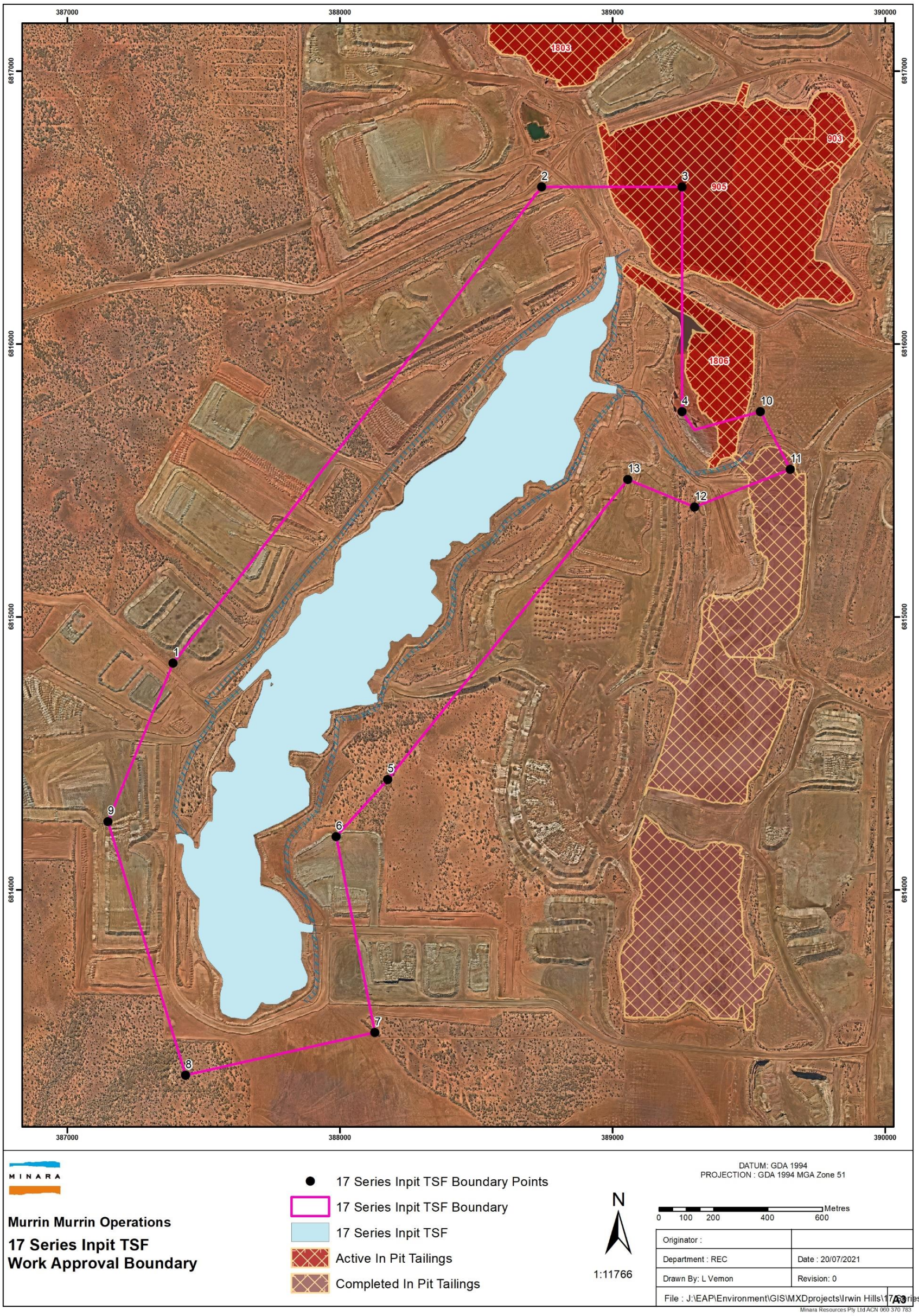


Figure 1: Map of the boundary of the prescribed premises

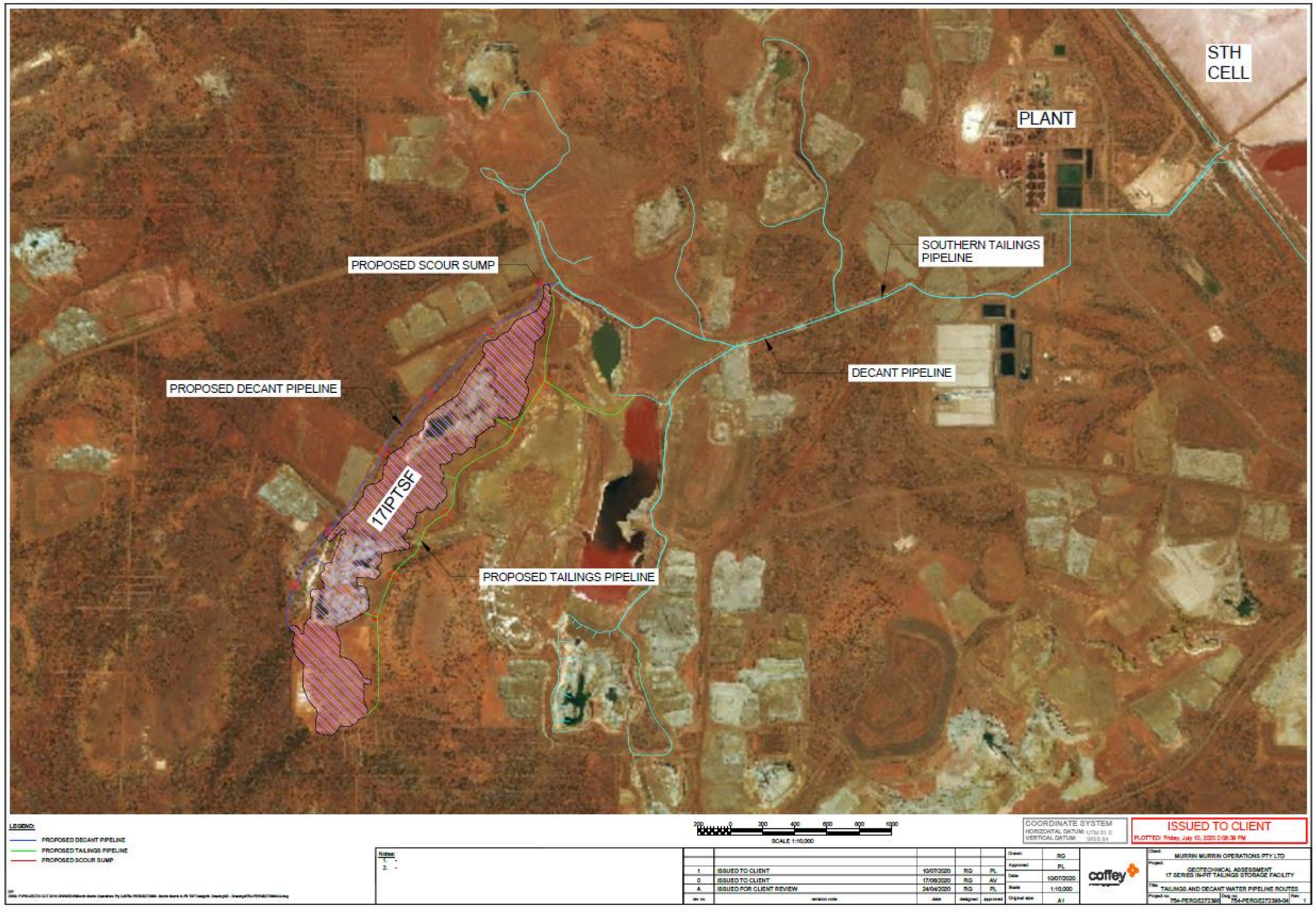
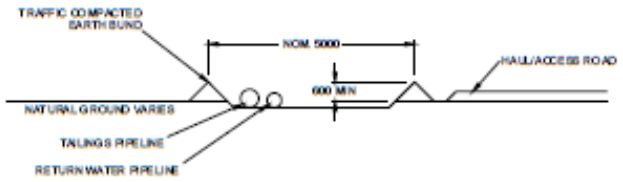
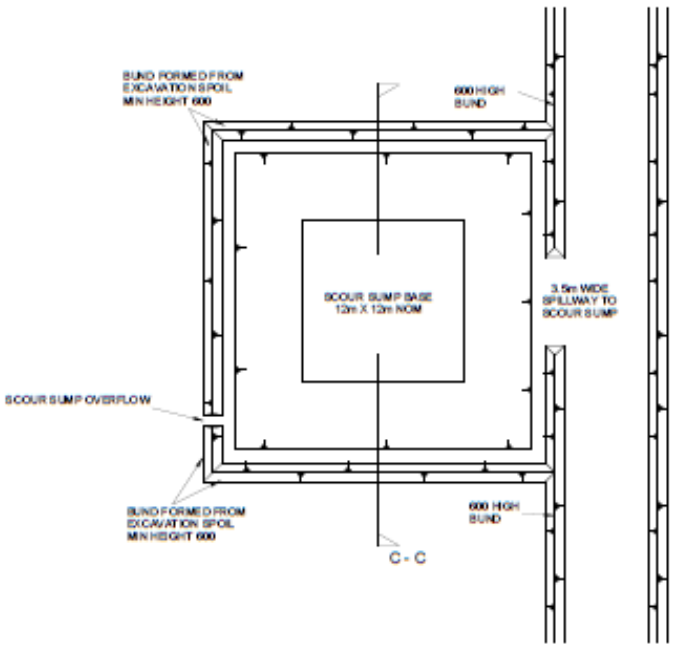


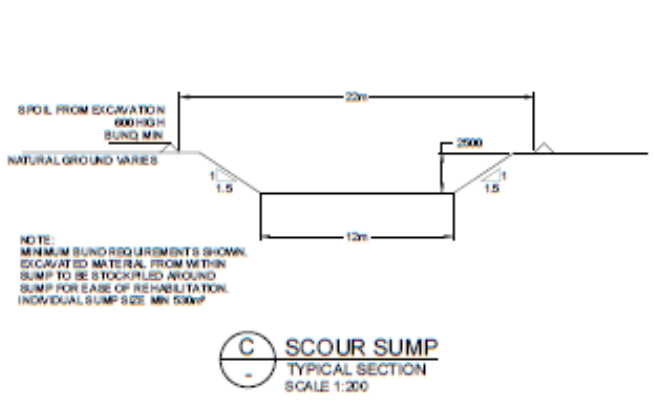
Figure 2 Locations of proposed infrastructure



A - TYPICAL PIPELINE BUNDING
TYPICAL SECTION
SCALE N.T.S



B - SCOUR SUMP
PLAN
SCALE 1:200



C - SCOUR SUMP
TYPICAL SECTION
SCALE 1:200

ISSUED TO CLIENT
PLOTTED: Friday, July 10, 2020 2:01:56 PM

Notes:			
1	ISSUED TO CLIENT	10/07/2020	PL
0	ISSUED TO CLIENT	17/06/2020	AV
A	ISSUED FOR REVIEW	24/04/2020	PL
Rev No	Revision Note	Date	Approved

Drawn:	RG
Approved:	PL
Date:	10/07/2020
Scale:	AS SHOWN
Original size:	A1

Client: MURRIN MURRIN OPERATIONS PTY LTD
Project: GEOTECHNICAL ASSESSMENT 17 SERIES IN-PIT TAILINGS STORAGE FACILITY
Title: PIPELINE CORRIDOR BUNDING - SECTIONS AND DETAILS
Project no: 754-PERG272390
Dwg no: 754-PERG272390-05
Rev: 1

Figure 3 Design for proposed pipeline corridor and scour sump

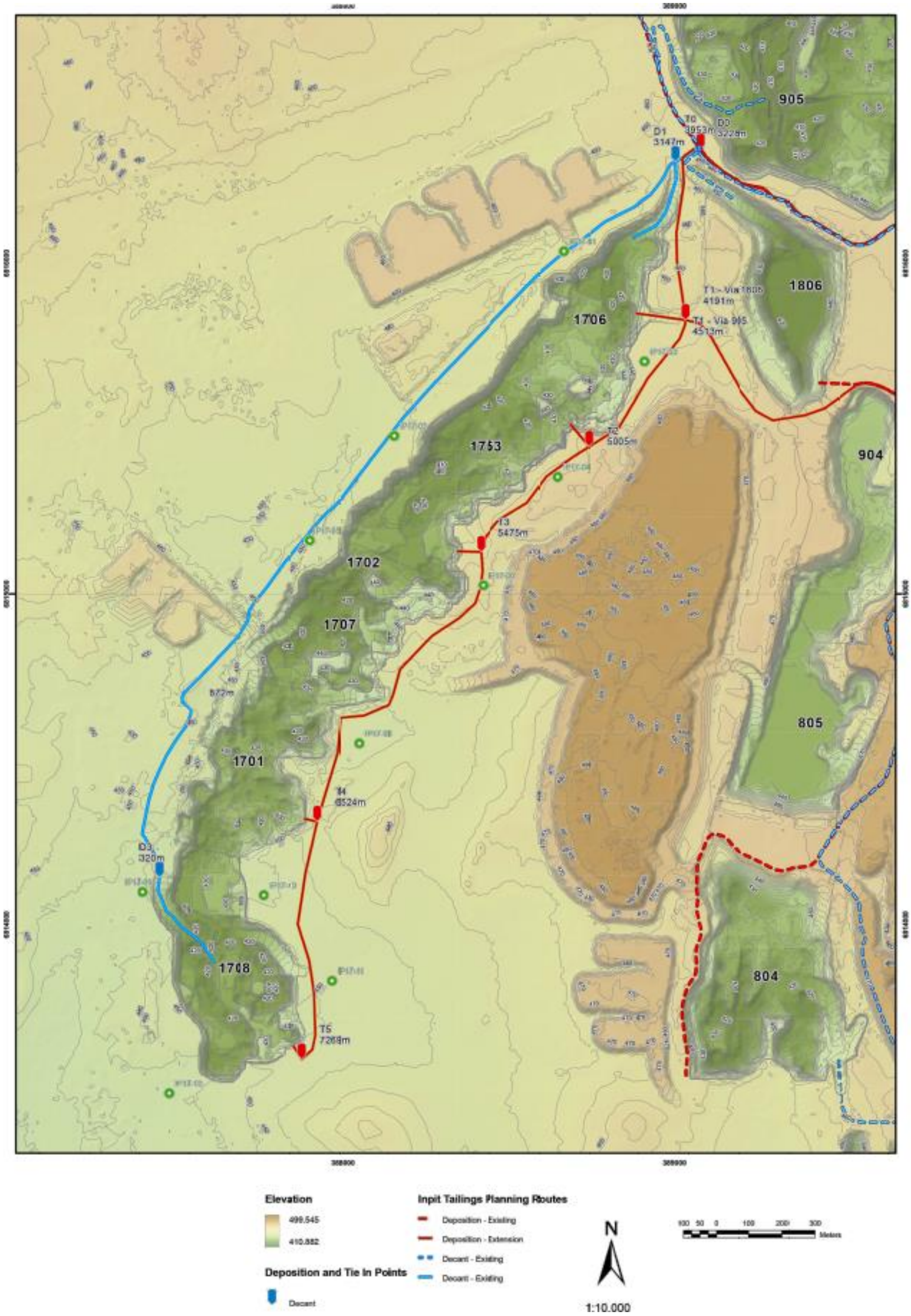


Figure 4 Location of staged tailings deposition and decant water points and pipeline

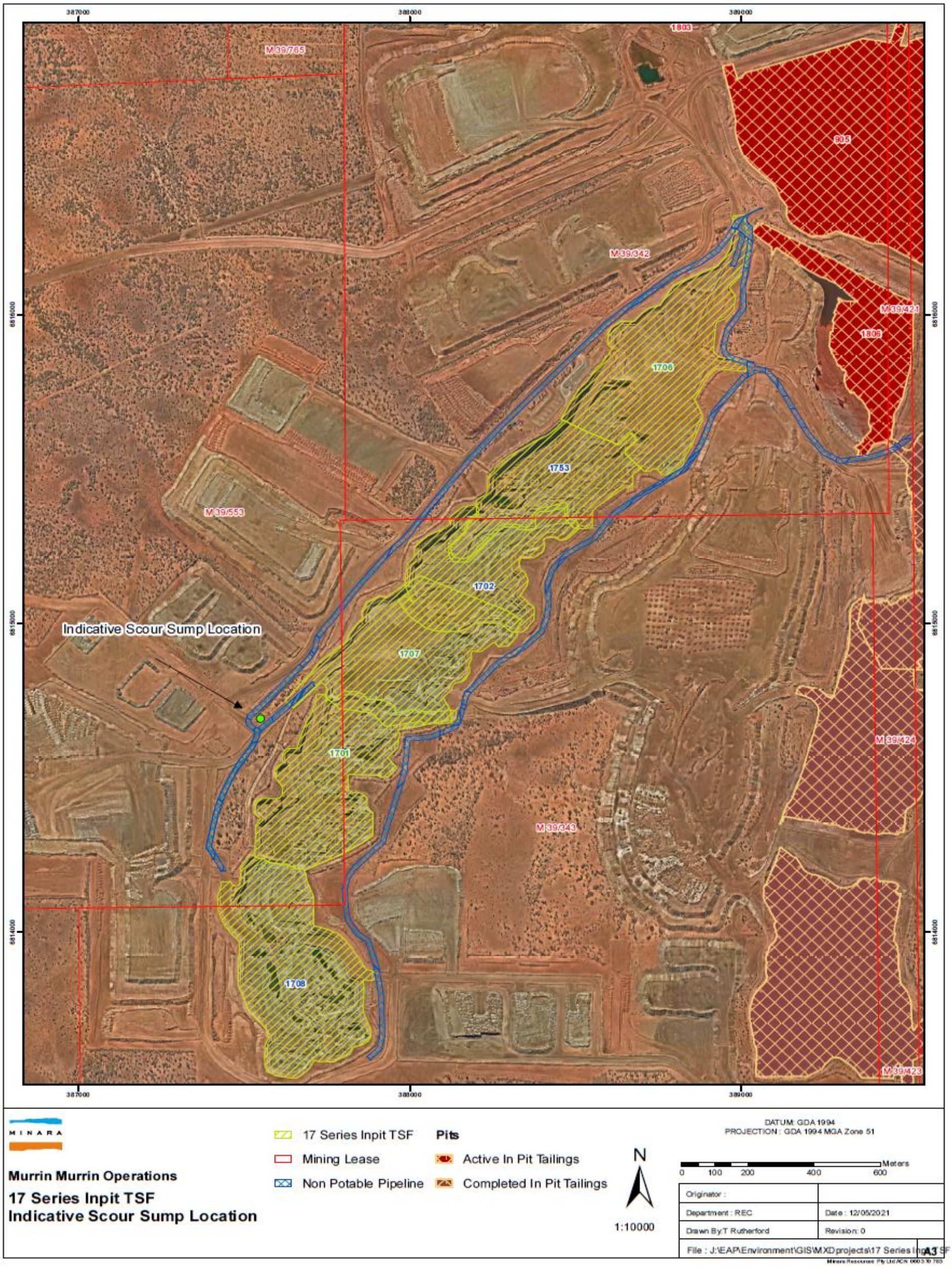


Figure 5 In-pit TSFs and scour sump location

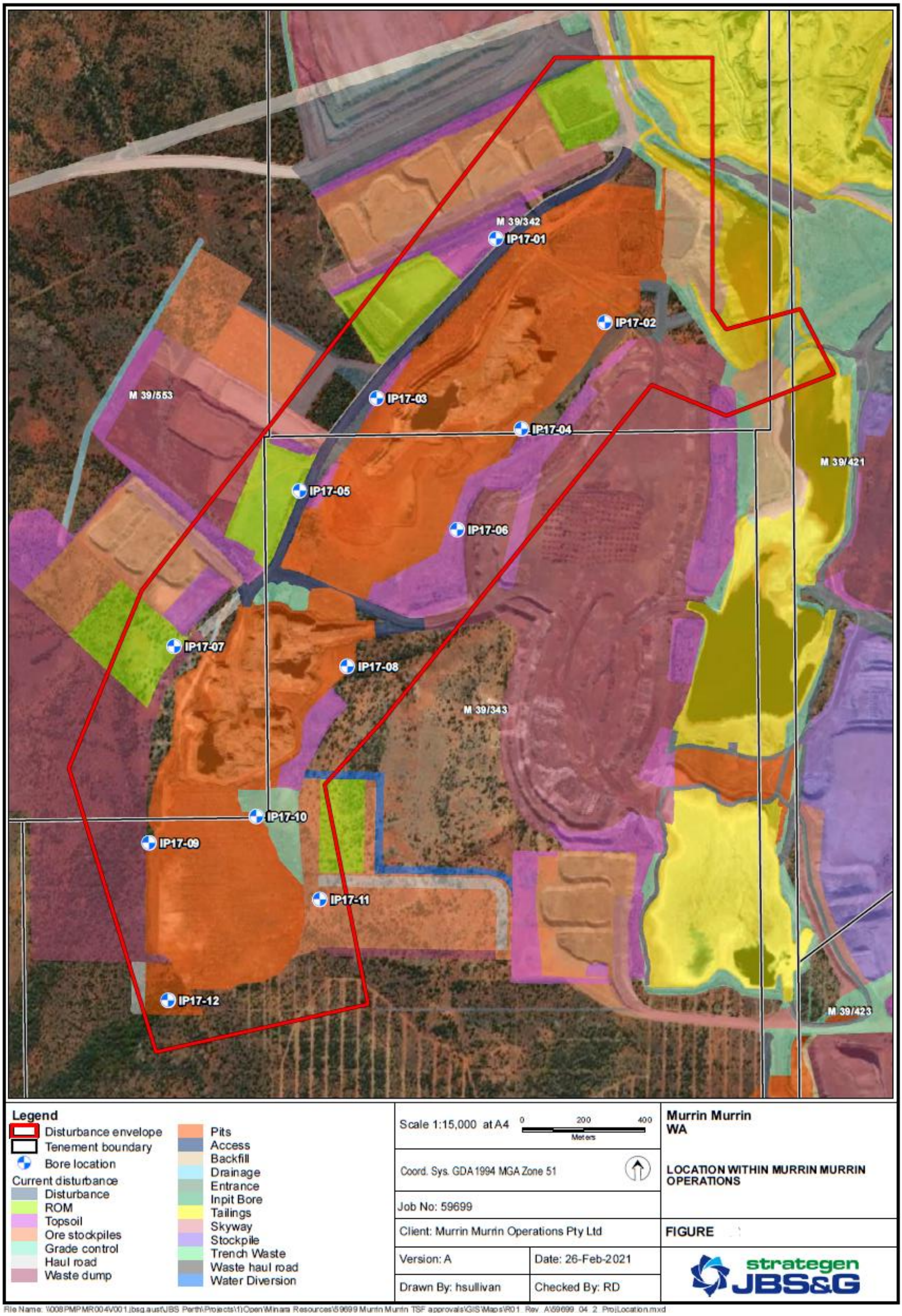


Figure 6 Monitoring bores for the proposed in-pit TSFs

Schedule 2: Premises boundary

The premises boundary is defined by the coordinates in Table 4.

Table 4: Premises boundary coordinates (GDA94 MGA Zone 51)

Reference point (Figure 1)	Easting	Northing
1	387388.5	6814831
2	388741	6816575
3	389255.7	6816575
4	389255.7	6815752
5	388176.7	6814404
6	387987.2	6814195
7	388129.5	6813477
8	387435.2	6813320
9	387150	6814250
10	389543	6815752
11	389652.5	6815541
12	389301.7	6815403
13	389057.2	6815504

Schedule 3: Monitoring

Groundwater monitoring

15. The licence holder must monitor groundwater for concentrations of the identified parameter(s) in accordance the requirements of Table 5.

Table 5: Groundwater monitoring of ambient concentrations

Monitoring well location	Parameter	Unit	Limit	Frequency	Averaging period	Method
IP17-01, IP17-02, IP17-03, IP17-04, IP17-05, IP17-06, IP17-07, IP17-08, IP17-09, IP17-10, IP17-11, IP17-12 as per Figure 6	Standing water level	mbgl	> 4	At least once prior to commencing time limited operations of Item 1 (Table 1); and Monthly during time limited operations of Stage 1, 2, 3 and 4	Spot sample	AS/NZS 5667.1; AS/NZS 5667.11
	pH	pH units	-			
	Total dissolved solids	mg/L	-			
	Aluminium					
	Cadmium					
	Copper					
	Lead					
	Mercury					
	Silicon					
	Zinc					
	Arsenic					
	Sodium					
	Cobalt					
	Nickel					

Quality assurance and quality control requirements

16. 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.