Government of Western Australia
Department of Water and Environmental Regulation

Licence

Licence number	L5029/1992/11
Licence holder	Northern Star (Kanowna) Pty Limited
ACN	010 511 789
Registered business address	1/388 Hay Street SUBIACO WA 6008
DWER file number	INS-0001176
Duration	8/10/2013 to 7/10/2046
Date of amendment	12/03/2026
Premises details	Kanowna Belle Gold Mine Mining Tenements M27/18, M27/22, M27/23, M27/37, M27/49, M27/57, M27/92, M27/103, M27/122, M27/123, M27/127, M27/159, M27/164, M27/232, M27/245, M27/287, M27/420, L27/62, L27/83 and L27/87 As defined in Schedule 1

Prescribed premises category description (Schedule 1, Environmental Protection Regulations 1987)	Assessed production capacity
Category 5: Processing or beneficiation of metallic or non-metallic ore	2,550,000 tonnes per annual period
Category 6: Mine dewatering	720,000 tonnes per annual period
Category 44: Metal smelting or refining	78,840 tonnes per annual period

This licence is granted to the licence holder, subject to the attached conditions, on 12 March 2026, by:

Caron Goodbourn

Digitally signed by Caron Goodbourn
Date: 2026.03.12 14:24:29 +08'00'

MANAGER, PROCESS INDUSTRIES

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

Licence history

Date	Reference number	Summary of changes
May 2014	W5599/2014/1	To allow the dewatering of supernatant from Red Hill in–pit TSF to the nearby Waldon Pit. This proposal was the result of a seepage assessment review after elevated weak acid dissociable cyanide levels were detected in the Red Hill monitoring bores.
20/11/2014	L5029/1992/11	Licence amendment to include REFIRE format.
21/05/2015	L5029/1992/11	Licence amendment to reduce in-pit TSF freeboard.
02/06/2016	L5029/1992/11	Licence amendment to allow construction of TSF1 embankment rise of 2m.
15/07/2016	L5029/1992/11	Licence amendment to allow the dewatering and transfer of tailings supernatant from Waldon Pit to the Consols Pit and Ballarat Last Chance Pits.
25/08/2016	L5029/1992/11	Licence amendment to allow Waldon Pit to be converted into an In-pit TSF. Removal of category 85: sewage facility as throughput capacity of the wastewater treatment plant is less than the prescribed minimum requiring registration.
28/7/2017	L5029/1992/11	Amendment Notice 1 – to include mining tenement M27/123 be included in the premises
7/12/2017	L5029/1992/11	Amendment Notice 2 – to increase the throughput of ore processing from 2,000,000 to 2,500,000 tonnes per annum
02/06/2016	L5029/1992/11	Licence amendment to allow construction of TSF1 embankment rise of 2m.
17/9/2018	L5029/1992/11	Amendment Notice 3 – amendment to extend the duration of the Licence to 7/10/2019
8/10/2018	L5029/1992/11	Amendment Notice 4 – Amendment to correct an administrative error in Table of the amendment.
27/06/2019	L5029/1992/11	Amendment to licence for the operation of TSF2 following completion of works associated with W6125/2018/1; removal of decommissioned monitoring bores and the TSF1 decant pond; inclusion of new monitoring bores and TSF2 decant pond; amendment to the frequency of monitoring of bores surrounding the TSF's that are no longer used.
27/02/2020	L5029/1992/11	The Amendment includes a CEO initiated consolidation of Amendment Notices 1-4 into the Licence, to revise arsenic trioxide waste disposal conditions, extend the duration of the Licence by six months and include Table 4.3.1 and sections 5 and 6 which were previously removed from the licence in error.
03/01/2023	L5029/1992/11	Amendment to licence for the operation of TSF2 following completion of Cell 2 Stage 1 embankment lift, and to transfer conditions of W6433/2020/1 to the licence for Stage 2 and 3 embankment raises.
01/10/2025	L5029/1992/11	CEO-initiated amendment to extend the licence duration by 12 months.
12/03/2026	L5029/1992/11	Licence holder-initiated amendment to authorize works relating to:

		• installation and operation of a mobile crushing and screening plant with the capacity process 50,000 tonnes per annual period of non-acid forming (NAF), benign waste rock; • installation of an ultra-fine grind circuit, dry paste plant, new pipeline as a conduit for diversion of groundwater from the TSFs to the Northwest Lead Pit, Other changes include ongoing use of an existing wet paste plant, changes to groundwater monitoring requirements, and extension of the licence expiry date. Department-initiated amendments: • Construction of new monitoring bores around the Northwest Lead Pit, • Removal of an invalid condition, • Changes to the reporting frequency of sulfur dioxide monitoring results, and • Minor administrative changes to wording and condition reference numbers.

Interpretation

In this licence:

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

Licence conditions

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

Authorised works

Infrastructure – Stage 1, Stage 2 and 3 TSF2 embankment raise

1. The licence holder is authorised to construct embankment raises for TSF2 to the staged construction heights as specified in Table 1.

Table 1: Staged construction for TSF2

Stages	TSF	Construction height (m)	Total tailings deposition in tonnes (t)
Stage 1	TSF2 (Cell 1)	Up to 357.5	Up to 6,762,376 (inclusive of Cell 2)
Stage 2	TSF2 (Cell 1 and Cell 2)	Up to 360.0	Up to 10,080,122
Stage 3	TSF2 (Cell 1 and Cell 2)	Up to 362.5	Up to 13,342,656

2. The licence holder must:

(a) construct and/or install the infrastructure listed in Table 2;
(b) in accordance with the corresponding design and construction/installation requirements specified in Condition 3; and
(c) at the corresponding infrastructure location,

as set out in Table 2.

3. The licence holder may only commence construction for an item of infrastructure identified in Row 2, 3, 4 and 5 of Table 2 where the following has been complete:

(a) submission of compliance report/s, as required by Condition 6, for the preceding stage of works (as listed in Table 2);
(b) limits specified for TSF1 and TSF2 in Condition 27 are met; and

Table 2: Design and construction/installation requirements – Stage 1, 2 and 3 embankment raise

Item	Infrastructure	Design and construction/installation requirements	Infrastructure location
Category 5: Processing or beneficiation of metallic or non-metallic ore			
1.	Stage 1 Cell 1 TSF2 embankment raise (located within Mining Tenement M27/92 and situated directly north of TSF1)	(i) Remove gravel wearing course to a nominal depth of 150 mm and prepare perimeter embankment foundation area of the Cell (clear, remove unsuitable material, scarify and moisture condition). (ii) Borrow, transport, place, moisture condition and compact tailings material to perimeter embankment of the Cell. (iii) Place and compact fill in 300 mm layers to form the required Cell embankment profile and continue construction to the required crest level. (iv) All raised embankment walls of the Cell are to be rolled and compacted to a minimum 95% of SMDD and placed within a moisture content tolerance of -/+ 2% of its optimum moisture content. (v) Trim batters, borrow, transport, place and traffic compact non-acid forming (NAF) mine waste capping (minimum of 500 mm thick) to downstream side of Cell 1 perimeter embankment to protect from erosion.	TSF2 embankment raise design as shown in Figure 17 and Figure 18 of Schedule 2
2.	Stage 2 Cell 2 TSF2 embankment raise (located within Mining Tenement M27/92 and situated directly north of TSF1)		
3.	Stage 2 Cell 1 TSF2 embankment raise (located within Mining Tenement M27/92 and situated directly north of TSF1)		
4.	Stage 3 Cell 2 TSF2 embankment raise (located within Mining Tenement M27/92 and situated directly north of TSF1)		

Item	Infrastructure	Design and construction/installation requirements	Infrastructure location
5.	Stage 3 Cell 1 TSF2 embankment raise (located within Mining Tenement M27/92 and situated directly north of TSF1)	(vi) All embankment crests of the Cell sloped inwards to shed water into TSF2. (vii) Stormwater runoff diverted away from TSF2. (viii) Settlement markers to be installed at no greater than 250 m spacings around the entire Cell perimeter to monitor freeboard.	

Tailings Storage Facility Lift Stage J

4. The licence holder must construct the Tailings Storage Facility 1 Lift Stage J in accordance with the documentation listed in Table 3:

Table 3: Construction requirements[1]

Document	Parts	Date of Document
Licence Amendment Application	All	21 March 2016
Northern Star (Kanowna) Pty Limited Licence Amendment Supporting Document	All	March 2016
Northern Star Resources Ltd Kanowna Belle Gold Mine TSF1 Embankment Raise Design Report	All	29 February 2016

Note 1: Where the details and commitments of the documents listed in Table 3 are inconsistent with any other condition of this licence, the conditions of this licence must prevail.

Works

5. The licence holder must:

(a) design and install the equipment[1];

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

(c) at the corresponding infrastructure location,

as set out in Table 4.

Table 4: Design and installation requirements

Item	Infrastructure[1]	Component	Design and installation requirements	Infrastructure location
1	Ultra-fine Regrind Circuit	UFG Mill IsaMill M3000	(i) Must be installed on a graded bunded concrete foundation that directs any spills to a concrete lined sump; and (ii) Sump pumps must be installed to remove collected liquid in the sumps to the Process Water Dam.	Within the area marked proposed location of the Ultra-fine Regrind Circuit as detailed in Figure 14 of Schedule 1.
2	Mobile Screening Plant	Screening plant	(i) None specified	Within the area marked

Item	Infrastructure[1]	Component	Design and installation requirements	Infrastructure location
3		Mobile crusher		proposed mobile screening plant as detailed in Figure 15 of Schedule 1.
4	Dry Paste Plant	Paste Plant	(i) Water delivery pipelines must be fitted with a leak detection system, (ii) Paste plant must be located within the existing wet paste plant laydown area with bund walls, (iii) Sump pumps must be installed within the primary bund with high level alarms, and (iv) Concrete binder must be delivered and stored within an enclosed silo.	Within the area marked proposed location of the dry paste plant as detailed in Figure 16 of Schedule 1.
5		Tailing storage area	(i) Must be enclosed with a perimeter bund.	
6	Northwest Lead Pit and conduit pipeline	Pipeline	(i) The pipeline is installed in a manner to comply with the requirements of Condition 9. (ii) The pipeline is to be buried at road floodway points.	Marked as 'proposed conduit pipeline' as indicated in Figure 13 of Schedule 1.
7		Northwest Lead Pit	(i) A hydrogeological assessment to be completed within 3 months of discharging into Northwest Leads Pit to determine the number and location of peripheral groundwater monitoring bores. (ii) Groundwater monitoring bores must be installed as per the recommendations from the hydrogeological assessment described in item (i), within 12 months of discharging into Northwest Leads Pit.	Location of monitoring bores is to be determined following completion of the hydrological assessment described in Table 4, Item 7 (i).

Note 1: The approval for installation/construction of the infrastructure listed in Condition 5, Table 4 expires on 31 January 2029

Compliance reporting – authorised works

6. The licence holder must within 60 calendar days of an item of infrastructure required by Conditions 2, 4 and/or 5 being constructed and/or installed:

(a) undertake an audit of their compliance with the requirements of Conditions 2, 4 and/or 5; and

(b) prepare and submit to the CEO an Environmental Compliance Report on that compliance to certify the extent to which works were constructed in accordance with the conditions of this licence.

7. The Environmental Compliance Report/s required by Condition 6, 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 Conditions 2, 4 and 5, have been constructed in accordance with the relevant requirements specified in Conditions 2, 4 and 5;
(b) as constructed plans, a detailed site plan and identification for each item of infrastructure or component of infrastructure specified in Conditions 2, 4 and 5;
(c) photographic evidence of the installation of the infrastructure in Conditions 2, 4 and 5;
(d) be signed by a person authorised to represent the licence holder and contains the printed name and position of that person; and

Authorized commencement of operation

8. The licence holder may only commence operations for an item of infrastructure identified in Condition 5, Table 4 (with the exception of Item 7):

(a) after the Environmental Compliance Report/s for that item of infrastructure as required by Condition 6 has been submitted to the CEO; or

(b) where the CEO has notified the licence holder that the Environmental Compliance Report/s for that item of infrastructure as required by Condition 6 meets the requirements of that condition.

Infrastructure and equipment

9. The licence holder must ensure that all pipelines containing environmentally hazardous materials are either:

(a) provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections; or
(b) equipped with telemetry systems, flow meters or pressure sensors along pipelines to allow the detection of leaks and failures; or
(c) equipped with automated cut-outs in the event of a pipe failure.

10. The licence holder must ensure that any saline dewatering effluent used for dust suppression must only be managed in a manner that minimises damage to surrounding vegetation.

11. The licence holder must ensure all liquid chemicals and hydrocarbons are stored in an impervious spill containment system capable of retaining 110% of the volume of the largest container.

12. The licence holder must ensure that the site infrastructure and equipment listed in Table 6 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 6.

Table 6: Infrastructure and equipment requirements

Item	Site infrastructure and equipment	Material	Operational requirement	Infrastructure location
Containment infrastructure				
1	TSF1	Tailings	(i) Operated in accordance with document titled, 'Operating Manual – KB TSF1 at	Figure 10 in Schedule 1

Item	Site infrastructure and equipment	Material	Operational requirement	Infrastructure location
			Kanowna Belle Gold Mine.' Stage J lift to RL374.9m	
2	TSF2		(i) Only tailings sourced from the premises are permitted to be deposited into TSF2; (ii) Tailings must be: (a) discharged subaerially and spirally from the full circumference of the perimeter embankments of the TSFs; (b) deposited in layers from numerous spigot point discharges, at a low velocity; (c) deposited for a period of two to three days from each group of spigots; and (d) discharged so as not to erode the perimeter containment embankments; (iii) Discharge points must be regularly moved to ensure the even development of sloped tailings beaches; (iv) Spigotting is to be carried out such that the supernatant water pond is maintained around the decant structure; (v) The supernatant pond is to be maintained as small as practical and is to be kept away from the perimeter containment embankments; (vi) Removal of excess water, following extreme rain storm events (1 in 100 year 72 hour event), must not exceed 30 days; (vii) The minimum operational freeboard, must be maintained at 300mm and the minimum total freeboard at 500mm; (viii) Removal of any surface water that collects in the peripheral drains (toe drains) around TSF2 to reduce the volume that may seep into the ground; and (ix) Operated in accordance with Condition 28.	Figure 10 in Schedule 1
3	Red Hill In-pit TSF		(i) Constructed and operated in accordance with document titled, 'Mining proposal for tailings deposition into Red Hill pit and Kanowna Belle Gold Mine', January 2008 and subsequent updates of these documents	Figure 12 in Schedule 1
4	Waldon In-pit TSF		(i) Operated in accordance with document titled, "Waldon In-Pit TSF Mining Proposal, July 2016 (registration ID 59514) and subsequent updates of this document.	Figure 12 in Schedule 1
5	Red Hill	Return water	(i) Lined with HDPE Liner leakage detection	Figure 8 in

Item	Site infrastructure and equipment	Material	Operational requirement	Infrastructure location
	decant water transfer pond		system (series of 'Megaflow' drains leading to gravel filled sump with riser under the HDPE liner).	Schedule 1
6	TSF2 decant pond		(i) Lined with HDPE maintained to minimise seepage. (ii) The minimum operational freeboard, must be maintained at 300mm.	Figure 10 in Schedule 1
7	Process water dam		(i) Lined with HDPE (ii) The minimum operational freeboard, must be maintained at 300mm.	Figure 11 in Schedule 1
8	Calcine dam	Calcination waste and treated wastewater	(i) Lined with HDPE	Figure 7 in Schedule 1
9	Arsenic trioxide storage and treatment area	Arsenic trioxide dust resulting from ore roasting activities captured in fabric filter and electrostatic precipitators. Spillages from the mobile waste treatment plant including spillages from the handling of dry materials. Depleted arsenic waste storage bags	(i) Impervious flooring and spillage retaining walls designed to minimise any threat to the environment resulting from fire, accident or extreme weather conditions. To be located inside the enclosed concrete lined and bunded area identified in Schedule 1.	Figure 11 in Schedule 1
10	Kanowna Belle underground gold mine excavated pit	Stabilised and solidified dolocrete encapsulated arsenic trioxide waste which meets the specifications of AS 4439.3	(i) As per "Works Approval Application Dolocrete Stabilisation of Arsenic Waste Version 1, Report No 2002/85 (July 2002)" and subsequent Management Plans and updates	Figure 12 in Schedule 1
11	Concentrate ponds	Gold concentrate	(i) HDPE liner must be maintained free of leaks or tears. (ii) The minimum operational freeboard, must be maintained at 300mm.	Figure 11 in Schedule 1
12	Mine surface dams	Mine dewatering from underground operations	(i) The minimum operational freeboard, must be maintained at 300mm.	Figure 9 in Schedule 1

Item	Site infrastructure and equipment	Material	Operational requirement	Infrastructure location
13	Northwest Lead Pit	Water from the TSF1/TSF2 seepage management bore network	(i) The minimum operational freeboard, must be maintained at 300mm.	Figure 13 in Schedule 1
Equipment				
14	Wet Paste Plant and future dry paste plant	Tailings from TSF1 and TSF2.	(i) Tailings/water delivery pipelines leak detection system to be maintained. (ii) Daily visual inspections of the pipelines must be conducted for leaks whilst in operation.	Figure 16 in Schedule 1
15	Mobile Screening Plant	Premises-derived non-acid forming waste rock	(i) Must not process more than 50, 000 tonnes per annual period of non-acid forming (NAF), benign waste rock sourced from Kanowna Belle site. (ii) Must be operated within the area marked as 'screen' on Figure 16 in Schedule 1.	Figure 15 in Schedule 1
16	UFG Mill	Ore	No operational requirements	Figure 14 in Schedule 1

13. The licence holder must:

(a) undertake inspections as detailed in Table 7;
(b) where any inspection identifies that an appropriate level of environmental protection is not being maintained, take corrective action to mitigate adverse environmental consequences as soon as practicable; and
(c) maintain a record of all inspections undertaken.

Table 7: Inspection of infrastructure

Scope of inspection	Type of inspection	Frequency of inspection[1]
Tailings delivery pipelines	Visual integrity	Every 12 hours
Return water lines		
Tailings deposition	Visual	
Ponding on the surface of the TSF1 and TSF2	Visual to confirm size of the pond	
Internal embankment freeboard	Visual to confirm required freeboard capacity is available	
External walls of TSF1 and TSF2	Visual integrity	
Borefield pipelines		Daily
Pump stations		
Supernatant transfer pipelines		

Stormwater diversion culverts, levees and drains	Visual to confirm not clogged with vegetation or debris	Monthly

Note 1: If circumstances at the scheduled time of inspection are identified as immediately hazardous to personnel the inspection should be undertaken as soon as practicable and the reason(s) recorded.

14. The licence holder must not burn waste oil, plastics or rubber at any time except for fire training purposes.

Emissions and discharges

15. The licence holder must ensure that where wastes produced on the Premises are not taken off-site for lawful use or disposal, they are managed in accordance with the requirements in Table 8.

Table 8: Management of Waste

Waste type	Activity	Operational requirement
Supernatant tailings liquor	Transfer of supernatant water to Ballarat Last Chance Pits and Consols Pit	Maintain the pit lake elevation at no greater than 350m AHD
Arsenic trioxide waste	Handling, transfer	(i) Arsenic waste screw auger conveyor systems including the transfer points must be totally enclosed and sealed, with provision for dust extraction and filtration equipment where necessary; and (ii) The licence holder must ensure that there are no visible dust emissions from arsenic waste and dolocrete receival hoppers.
	Temporary storage above ground	(i) More than 400 tonnes of arsenic trioxide[1] waste must only be stored on the surface if the CEO is notified prior to storage; (ii) No more than 800 tonnes of arsenic trioxide[1] waste must be stored on the surface at any time; and (iii) Any arsenic trioxide waste must only be stored inside the weatherproof enclosures within sealed bulka bags manufactured in accordance with section 5.6.15.4 of the *Australian Code for the Transport of Dangerous Goods by Road and Rail.*
	Treatment for stabilisation	(i) The arsenic trioxide waste must only be treated and stabilised in the mobile arsenic waste treatment plant located within an enclosed concrete lined and bunded building; (ii) Spillages from the mobile arsenic waste treatment plant operations including spillages from the handling of dry materials must be drained to the impermeable sump located inside the enclosed concrete lined and bunded treatment plant building; (iii) Solidification of the arsenic treated waste must be undertaken in moulds within the bunded area of the enclosed treatment building; and (iv) The treated arsenic waste must remain in situ until the material is no longer free flowing.

	Disposal	(i) The licence holder must not dispose of arsenic trioxide waste on the premises unless: (a) the waste has undergone treatment for stabilisation in the mobile arsenic waste treatment plant, and (b) the waste meets the disposal requirements for stabilised, solidified and cured arsenic trioxide waste, as specified in this table.
Stabilised, solidified and cured arsenic trioxide waste	Disposal in Kanowna Belle underground Gold Mine	(i) The licence holder must not dispose the waste if the concentration of arsenic in the leachate exceeds 7mg/L when tested in accordance with the leaching procedure specified in AS 4439.3; (ii) Arsenic trioxide waste which exceeds the ASLP test level of 7mg/L of arsenic in the leachate must be documented, investigated and retreated; (iii) Solidified blocks of treated arsenic trioxide waste must be fully cured before disposal; and (iv) The solidified blocks of treated arsenic trioxide waste disposed in the Kanowna Belle Gold Mine underground mined out excavations must be surrounded by a tailings paste.
Bags which have been used for storage of arsenic trioxide waste	Temporary storage	(i) To be stored in an enclosed area
	Disposal	(i) The licence holder must not dispose of bags which have been used for storage of arsenic trioxide waste within the premises.
Crushed and screened non-acid forming waste rock processed by the mobile screening plant	Used for capping TSF1 and TSF2 or historic waste rock dumps.	(i) All crushed and screened material to be retained within the premises boundary.

Note 1: Determined as a mass balance of equivalent pure arsenic trioxide.

Point source emissions to groundwater

16. The licence holder must ensure that where waste is emitted to groundwater from the emission point in Table 9 and identified on the map of emission points in Figure 12 and 13 of Schedule 1, it is done in accordance with the conditions of this Licence.

Table 9: Emission point to groundwater

Emission point reference and location on Map of emission points	Description	Source, including any abatement
Ballarat Last Chance Pits and Consols Pit	Discharge to pit lake in previously mined out open pit	Supernatant tailings liquor discharged via bunded delivery pipeline.
Northwest Lead Pit		Groundwater from TSF1/TSF2 seepage management bore network

Point source emissions to air

17. The licence holder must ensure that where waste is emitted to air from the emission points in Table 10 and identified on the map of emission points in Figure 2 of

Schedule 1, it is done in accordance with the conditions of this Licence.

Table 10: Emission points to air

Emission point reference and location on Map of emission points	Emission Point	Emission point height (m)	Source, including any abatement
A1	Stack 1	120	Roaster exhaust gases passed through a gas treatment system, electrostatic precipitator and fabric filter

Monitoring

18. The licence holder must ensure that:

(a) quarterly monitoring is undertaken at least 45 days apart;
(b) six monthly monitoring is undertaken at least 5 months apart; and
(c) annual monitoring is undertaken at least 9 months apart.

19. The licence holder must record production or throughput data and any other process parameters relevant to any monitoring undertaken.

20. The licence holder must record the weight (in tonnes) of material processed by the mobile screening plant.

21. The licence holder must ensure that all monitoring equipment used on the Premises to comply with the conditions of this Licence is calibrated in accordance with the manufacturer's specifications and the requirements of the Licence.

22. The licence holder must, where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring these issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.

Monitoring and limits of point source emissions to air

23. The licence holder must undertake monitoring in Table 11 according to the specifications in Table 11 for the location shown in Figure 2 of Schedule 1.

24. The licence holder must not cause or allow point source emissions to air greater than the limits listed in Table 11.

Table 11: Monitoring and limits of point source emissions to air

Emission point reference	Parameter	Units[1]	Averaging period	Frequency[2]	Limit	Source	Method
A1	PM	mg/m^3	60 minute	Quarterly	250 mg/m^3	Stack test (60 minute average)	USEPA Method 5 or 17
	Total concentration of antimony, arsenic, cadmium, lead, mercury, vanadium and				10 mg/m^3	Stack test (60 minute average)	USEPA Method 29 AS 4323.1

	their respective compounds						

Note 1: All units are referenced to STP dry.
Note 2: Monitoring must be undertaken to reflect normal operating conditions and any limits or conditions on inputs or production.

25. The licence holder must ensure that all non-continuous sampling and analysis undertaken pursuant to Condition 23 is undertaken by a holder of NATA accreditation for the relevant methods of sampling and analysis.

Groundwater monitoring

26. The licence holder must ensure that:

(a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
(b) all wastewater sampling is conducted in accordance with AS/NZS 5667.10;
(c) all groundwater sampling is conducted in accordance with AS/NZS 5667.11; and
(d) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured.

Ambient environmental quality monitoring

27. The licence holder must undertake monitoring in Table 12 according to the specifications in that table and record results that do not meet any specified limit.

Table 12: Monitoring of ambient groundwater quality and groundwater quality limits

Monitoring point reference and location on maps of monitoring locations in Schedule 1	Parameter	Limit	Units	Averaging period	Frequency[2]
TSF1 GWMB1, GWMB2. GWMB6, GWMB7, GWMB24, GWMB25, GWMB26, M6, M7, M8, **TSF2** GWMB12S, GWMB12D GWMB13S, GWMB13D GWMB14S, GWMB14D GWMB15S, GWMB15D GWMB16S, GWMB16D GWMB17S, GWMB17D GWMB18S, GWMB18D GWMB19S, GWMB19D GWMB20, GWMB21, GWMB22, GWMB23, TD2, TD3, TD7, TD8, KWB79 GWMB27, GWMB 28, GWMB 29D, GWMB29S **Northwest Lead Pit groundwater monitoring bores:** Bore identification numbers to be inserted following compliance with Condition 7	SWL[1]	2[5]	mBGL	Spot sample	Monthly
	pH[3]	≤2	-		
	Total Dissolved Solids	-	mg/L		
	Weak acid dissociable cyanide	0.8			
	Arsenic	-			
BLCBH1, BLCBH2 BLCBH3, BLCCH1 BLCCH2, BLCCH3	SWL[1]	6	mBGL	Spot sample	Biannually[4]

CONBH1, CONBH2 CONCH1, CONCH2 CONCH3, CONCH4					
BLCBH1, BLCBH2 BLCBH3, CONBH1 CONBH2	pH[3]	-	-	Spot sample	Biannually[4]
	Electrical conductivity[3]		µS/cm		
	Weak acid cyanide Total dissolved solids Arsenic Calcium Magnesium Sodium Potassium Chloride Sulphate Aluminium Cadmium Cobalt Chromium Copper Iron Manganese Nickel Lead Selenium Zinc		mg/L		
Waldon In Pit TSF WBH1S, WBH1D, WBH2S, WBH2D, WBH3S, WBH4S, WBH4D, WBH5, WBH6, WBH7S WBH7D, WBH8	SWL[1]	-	mBGL	Spot sample	Biannually
Calcine Dam GWMB8, GWMN9, GWMB10, GWMB11	SWL[1]	-	mBGL	Spot sample	Quarterly
Red Hill In-Pit TSF RHBH1A-int RHBH1A-deep RHBH2A-deep RHBH1B, RHBH2B RHBH3S, RHBH3D RHBH4, RHBH5S RHBH5D, RHBH6 RHBH7S, RHBH7S2 RHBH7D, RHBH8 RHBH9	SWL[1]	-	mBGL	Spot sample	Biannually
TSF1	pH[3]	-	-		Quarterly

GWMB1, GWMB2. GWMB6, GWMB7, GWMB24, GWMB25, GWMB26, M6, M7, M8 **TSF2** GWMB12S, GWMB12D, GWMB13S, GWMB13D, GWMB14S, GWMB14D, GWMB15S, GWMB15D, GWMB16S, GWMB16D, GWMB17S, GWMB17D, GWMB18S, GWMB18D, GWMB19S, GWMB19D, GWMB20, GWMB21, GWMB22, GWMB23, TD2, TD3, TD7, TD8, KWB79, GWMB27, GWMB 28, GWMB 29D, GWMB29S **Calcine Dam** GWMB8, GWMN9, GWMB10, GWMB11 **Northwest Lead Pit groundwater monitoring bores:** Bore identification numbers to be inserted following compliance with Condition 7	Electrical conductivity[3]		µS/cm	Spot sample	
	Total dissolved solids Weak acid cyanide Arsenic Calcium Magnesium Sodium Potassium Chloride Sulphate Aluminium Cadmium Cobalt Chromium Copper Iron Manganese Nickel Lead Selenium Zinc Mercury		mg/L		
Red Hill In-pit TSF RHBH1Al-int RHBH1Al-deep RHBH2A-deep RHBH1B, RHBH2B	pH[3]	-	-	Spot sample	Biannually
	Electrical conductivity[3]		µS/cm		

RHBH3S, RHBH4 RHBH7S2, RHBH9 **Waldon In-Pit TSF** WBH1S, WBH2S WBH4D	Total dissolved solids Weak acid cyanide Arsenic Calcium Magnesium Sodium Potassium Chloride Sulphate Aluminium Cadmium Cobalt Chromium Copper Iron Manganese Nickel Lead Selenium Zinc Mercury		mg/L		

Note 1: SWL must be monitored prior to undertaking any other sampling. If a representative sample cannot be taken then the bore must be reported as dry.
Note 2: Monitoring bores must be sampled only when SWL can be recorded.
Note 3: Electrical conductivity and pH can be measured in the field.
Note 4: Biannually during periods of no transfers of supernatant water to the BLC or Consols Pits. Increase frequency to monthly during and after transfer until water levels and chemistry has stabilised.
Note 5: Limit applies to bores M6, M7, M8, GWMB20, GWMB21, GWMB22, GWMB23, GWMB24, GWMB25, GWMB26, KWB79, & TD7 from 1 June 2023.
Note 6: Respective to Note 5, any SWL (mBGL) limit exceedances of bores M6, M7, M8, GWMB20, GWMB21, GWMB22, GWMB23, GWMB24, GWMB25, GWMB26, KWB79, & TD7 are to be reported in the Quarterly Groundwater Reports from 1 September 2025.

28. The licence holder must take the action specified in Table 13 when the action level at the locations specified is reached.

Table 13: Specified actions

Monitoring location	Parameter	Action level	Action
BLCBH1, BLCBH2, BLCBH3, BLCCH1, BLCCH2, BLCCH3 CONBH1, CONBH2, CONCH1, CONCH2, CONCH3, CONCH4	SWL	15 mBGL	Review data trends and transfer strategy of water from Waldon Pit to Ballarat Last Chance Pits and Consols Pit
		10 mBGL	Increase frequency of SWL monitoring in Table 12 to fortnightly.
		6 mBGL	Stop transfer of water from Waldon Pit to Ballarat Last Chance Pits and Consols Pit
Consols Pit Ballarat Last Chance Pits	Pit lake elevation	348mAHD	Increase frequency of SWL monitoring in Table 12 to fortnightly
		350mAHD	Stop transfer of water from Waldon Pit to Ballarat Last Chance Pits and Consols Pit
TSF1 All bores	SWL	4 mBGL	Increase frequency of SWL monitoring specified in Table 12 to fortnightly

GWMB1, GWMB2, GWMB6, GWMB7, GWMB24, GWMB25, GWMB26, M6, M7, M8		3 mBGL[2]	Manage rising groundwater risks in accordance with the Kanowna Belle Seepage Management Plan – TSF1 & TSF2[3]
Distal bores M6, M7, M8, GWMB24, GWMB25, GWMB26		2.5 mBGL[1,2]	Commence groundwater investigation as required by Condition 39
Proximal bores GWMB1, GWMB2, GWMB6, GWMB7		2 mBGL[1, 2]	Commence groundwater investigation as required by Condition 39
TSF2 All bores GWMB12S, GWMB12D, GWMB13S, GWMB13D, GWMB14S, GWMB14D, GWMB15S, GWMB15D, GWMB16S, GWMB16D, GWMB17S, GWMB17D, GWMB18S, GWMB18D, GWMB19S, GWMB19D, GWMB20, GWMB21, GWMB22, GWMB23, TD2, TD3, TD7, TD8, KWB79	SWL	4 mBGL	Increase frequency of SWL monitoring specified in Table 12 to fortnightly
		3 mBGL[2]	Manage rising groundwater risks in accordance with the Kanowna Belle Seepage Management Plan – TSF1 & TSF2[3]
Distal bores GWMB23, GWMB21, KWB79, TD7, GWMB22 & GWMB20		2.5 mBGL[1]	Commence groundwater investigation as required by Condition 39
Proximal bores GWMB12S, GWMB12D, GWMB13S, GWMB13D, GWMB14S, GWMB14D, GWMB15S, GWMB15D, GWMB16S, GWMB16D, GWMB17S, GWMB17D, GWMB18S, GWMB18D, GWMB19S, GWMB19D, TD2, TD3, TD8,		2 mBGL[2]	Commence groundwater investigation as required by Condition 39
Northwest Lead Pit groundwater monitoring bores: Bore identification numbers to be inserted following compliance with Condition 7	SWL	2 mBGL[4].	Commence groundwater investigation as required by Condition 39

Note 1: Action level commences from 1 June 2023.
Note 2: Action triggered following 2 consecutive fortnightly exceedances of the action level
Note 3: Prior to 1 June 2023, the Kanowna Belle Seepage Management Plan TSF1 & TSF2 (AGE 2019) is to be utilised for the purposes of this action. From 1 June 2023, the updated Kanowna Belle Seepage Management Plan TSF1 & TSF2 (as per Condition 37) is to be utilised for the purposes of this action.
Note 4: Action level to be confirmed following compliance with Condition 7

Monitoring of inputs and outputs

29. The licence holder must undertake the monitoring in Table 14 according to the specifications in Table 14 and record any limit exceedances and the corrective action taken.

Table 14: Monitoring of inputs and outputs

Output	Parameter	Limit	Units	Averaging period	Frequency	Method
Dolocrete encapsulated arsenic trioxide waste	Arsenic in leachate	7	mg/L	Composite sampling based on every 5 batches of waste	For each composite sample collected	AS 4439.3

Process monitoring

30. The licence holder must undertake monitoring in Table 15 according to the specifications in Table 15 and record any limit exceedances and the corrective action taken.

Table 15: Process monitoring

Monitoring point reference	Parameter	Limit	Units	Averaging period	Frequency
Red Hill In-pit TSF	Survey supernatant pond elevations	1.2	mBGL	-	Annually[1]
	Survey tailings surface elevation	0.3	mBGL	-	Annually
Waldon In-pit TSF	Survey supernatant pond elevations	365	mAHD	-	Annually[1]
	Survey tailings surface elevation	365	mAHD	-	Annually
Red Hill In-pit TSF and Waldon in-Pit TSF supernatant pond liquor	Cu WAD CN Total CN TDS	-	mg/L	Spot sample	Quarterly[1]
	pH[2]	-	-		
	Cations (Ca, Mg, Na, K)	-	mg/L		Biannually[1]
	Anions (Cl, SO_4, alkalinity)	-	mg/L		
	Metals, dissolved (As, Al, Cd, Co, Cr, Fe, Mn, Ni, Pb, Se, Zn)	-	mg/L		
Ballarat Last Chance Pits Consols Pit	Survey pit lake elevations[3]	350	mAHD	-	Annually[1]
Ballarat Last Chance Pit lake, and Consols Pit lake	Cu WAD CN Total CN TDS	-	mg/L	Spot sample	Biannually[1]
	pH[2]	-	-		
	Cations (Ca, Mg, Na, K)	-	mg/L		
	Anions (Cl, SO_4, alkalinity)	-	mg/L		

	Metals, dissolved (As, Al, Cd, Co, Cr, Fe, Mn, Ni, Pb, Se, Zn)	-	mg/L		

Note 1: Annually/ Biannually during periods of no transfer of supernatant water to these TSF's. During periods of transfer the frequency of monitoring to increase to monthly during and after transfer
Note 2: Electrical conductivity and pH can be measured in the field.
Note 3: When pit lakes are able to be safely accessed.

Ambient air quality monitoring and limits

31. The licence holder must ensure that the approved monitoring equipment referred to in Condition 32 and 33 is operated and calibrated in accordance with approved procedures and is maintained so as to provide valid data for greater than 90% of the time in every calendar month, and greater than 92% of the time over any 12 consecutive calendar months.

32. The licence holder must undertake monitoring specified in Table 16.

Table 16: Ambient monitoring

Monitoring point reference and location	Location	Parameter	Units	Averaging Period	Frequency	Method
KRH	Kalgoorlie Regional Hospital, Piccadilly St, Kalgoorlie	Sulfur dioxide	ppm	5-minute	Continuous	AS3580.4.1 AS3580.2.2 AS3580.1.1
HGC	Hannans Golf Course, Aslett Dr, Kalgoorlie					
KCY	Kalgoorlie Council Yard, Hay St, Kalgoorlie					
AIR	Kalgoorlie Airport, Hart Kerspian Dr, Broadwood					
MEX	Metals Exploration, Holmes St, Boulder					
BSY	Boulder Shire Yard, Forrest St, Boulder					
WFY	Westrail Freight Yard, West Kalgoorlie Rd, West Kalgoorlie					
KAM	Salmon Gum Dr, Kambalda West					
COO	Coolgardie Primary School, Hunt St, Coolgardie					
KUR	Sharpe Dr, Kurrawang					

33. The licence holder must undertake the meteorological monitoring in Table 17 according to the specifications in Table 17.

Table 17: Meteorological monitoring

Monitoring station & location[1]	Parameter	Units	Height	Frequency[2]	Method
	Wind speed	m/s	90	Continuous	AS 3580.14

M1 as shown in Figure 2 of Schedule 1	Wind direction	Degrees	90		AS3580.1.1
	Wind direction standard deviation[1]	Degrees	N/A		
	Air temperature[1]	°C			
	Relative humidity[1]	%			
	Solar radiation[1]	W/m^2			
	Rainfall[1]	mm			
M2 as shown in Figure 3 of Schedule 1	Wind speed	m/s	30	Continuous	AS 3580.14 AS3580.1.1
	Wind direction	Degrees	30		
	Wind direction standard deviation[1]	Degrees	N/A		
	Air temperature[1]	°C			
	Relative humidity[1]	%			
	Solar radiation[1]	W/m^2			
	Rainfall[1]	mm			
M3 as shown in Figure 4 of Schedule 1	Wind speed	m/s	N/A	Continuous	AS 3580.14 AS3580.1.1
	Wind direction	Degrees			
	Wind direction standard deviation[1]	Degrees			
	Air temperature[1]	°C			
	Relative humidity[1]	%			
	Solar radiation[1]	W/m^2			
	Rainfall[1]	mm			
MEX as shown in Figure 6 of Schedule 1	Wind speed	m/s	16 m	10-minute	AS 3580.14 AS 3580.1.1
	Wind direction	Degrees	16 m		
	Wind direction standard deviation	Degrees	N/A		

Note 1: The licence holder must ensure at least one of the M1, M2 and M3 locations of the meteorological monitoring equipment are continuously monitored and recorded for these parameters.

Note 2: The licence holder must maintain and operate meteorological monitoring equipment so as to provide reliable data for greater than 90 percent of the time in every calendar month and for greater than 95 percent of the time in any period of 12 calendar months.

EPP related monitoring

34. The licence holder must ensure that the operations on the Premises are conducted in such a way as neither to cause, nor contribute to causing, the Maximum Sulfur Dioxide Concentration Permitted in the Ambient Air of a Protected Area under clause 6 of the Environmental Protection (Goldfields Residential Areas) (Sulfur Dioxide) Policy 2003 to be exceeded at any place within the area.

35. The licence holder must report to the CEO any exceedance of maximum sulfur dioxide concentration permitted at any of the sulfur dioxide monitoring stations in Table 16, as soon as practicable but no later than 5PM on the next usual working day.

Vegetation monitoring

36. The licence holder must undertake an annual assessment of vegetation within the zone of influence of TSF2, the Red Hill in-pit TSF and the Waldon in-pit TSF. The assessment must:

(a) photograph and record the presence and condition of key vegetation features within the zone of influence;

(b) compare the results of the assessment against previous years assessments and identify whether any deterioration in the presence and/or quality of vegetation has taken place; and

(c) be undertaken by a person suitably qualified in vegetation identification and sampling.

Seepage monitoring and management

37. The licence holder must implement the Seepage Management Plan for the Red Hill/ Waldon In-pit TSFs, and the Seepage Management Plan for Kanowna Belle TSF1/TSF2. The Seepage Management Plans may be amended on approval from the CEO to improve the management of seepage from the TSF. In circumstances where the details and commitments in the Seepage Management Plan are inconsistent with conditions of this Licence, the conditions of this Licence must prevail.

38. The licence holder must review and update (as necessary) of the Seepage Management Plans Kanowna Belle TSF1/TSF2, and the Red Hill/ Waldon In-pit TSFs annually from 1 June 2023. The review must include, but not be limited to:

(a) the licence holder's progress towards existing targets and milestones specified within each seepage management plan;
(b) an assessment of whether the objectives in the seepage management plans are being achieved and are still appropriate; and
(c) take into account any groundwater investigation outcomes (as necessary) identified though Condition 39.

39. The licence holder must undertake a hydrogeological/groundwater investigation upon exceedance of the action levels specified in Table 13. A report detailing the investigation must be submitted to the CEO within 90 days of the specified action trigger exceedance and must include the following:

(a) a clear description of the hydrogeological/groundwater investigation undertaken, including but not limited to, the nature and scope of the investigation into the cause(s) of the action level exceedance(s);
(b) a summary of the most recent vegetation assessment conducted in accordance with Condition 36, including but not limited to, detail on the nature and extent of any deterioration observed in vegetation health;
(c) an assessment of additional seepage management controls, including but not limited to;
    (i) the installation of additional seepage recovery bores,
    (ii) increased seepage recovery from existing bores,
    (iii) alternate disposal methods for recovered seepage water,
    (iv) process strategies to reduce water disposal to the TSFs;
    (v) reduced or ceased tailings deposition; or
    (vi) a combination of the above (or additional controls);
(d) The outcomes of the hydrogeological/groundwater investigation, including but not limited to:
    (i) tangible strategies that will be implemented to reduce SWL below 2 mBGL limit and the specified trigger levels;
    (ii) timeframes for the implementation of additional seepage management controls; and

(iii) detail the ongoing monitoring and management approaches that will be used to measure the effectiveness the implemented seepage recovery strategies.

(f) certification by a suitably qualified hydrogeologist of the scope, methods and outcomes of the hydrogeological/groundwater investigation.

40. The licence holder must implement any additional seepage management controls identified through the investigation undertaken in accordance with Condition 39 within three months of the submission of the report required by Condition 39.

41. The licence holder must undertake an annual water balance for the Red Hill In-Pit TSF and the Waldon, Consols and Ballarat Last Chance Pits. The water balance must as a minimum consider the following:

(a) site rainfall;

(b) evaporation;

(c) tailings return water discharge volumes;

(d) seepage;

(e) supernatant liquor discharge and transfer;

(f) pit wall runoff;

(g) groundwater inflow; and

(h) volumes of tailings deposited.

42. The licence holder must undertake monitoring of the water balance for TSF2 each monthly period, and (as a minimum) record the following information:

(a) site rainfall;

(b) evaporation rate;

(c) decant water recovery volumes;

(d) volume of tailings deposited;

(e) estimate of seepage losses; and

(f) volumes of seepage recovered through the seepage recovery bore network and toe drains.

Records and reporting

43. The licence holder must, within 7 days of becoming aware of any non-compliance with Condition 16, 17, 24, 27 (except for SWL limit for TSF1 and TSF2 bores), 29 and 34 of this licence, notify the CEO in writing of that non-compliance, unless otherwise specified as a condition of this Licence. Notification must include the following information:

(a) which condition was not complied with;

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

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

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

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

(f) what action will be taken and the date by which it will be taken to prevent the non-compliance occurring again.

44. The licence holder must record the following information in relation to complaints received by the licence 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 licence holder to investigate or respond to any complaint.

45. The licence holder must:

(a) undertake an audit of their compliance with the conditions of this licence during the preceding annual period; and

(b) prepare and submit to the CEO by no later than 30 March after the end of that annual period an Annual Audit Compliance Report in the approved form.

46. The licence holder must submit the information specified in Schedule 3 to the CEO annually according to the specifications in in that schedule.

47. The licence holder must submit to the CEO by no later than 30 March after the end of each annual period, an Annual Environmental Report for the previous annual period for the conditions listed in Table 18, and which provides information in accordance with the corresponding requirement set out in Table 18.

Table 18: Annual environmental report requirements

Condition	Requirement
-	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken.
Condition 20 Monitoring of processed volume	A monitoring report describing the type and volume of material processed by the mobile screening plant.
Conditions 21 and 31 Calibration	A calibration reports for all equipment referred to in conditions 21 and 31 of this Licence, including actions taken to rectify equipment which have not passed calibration.
Conditions 23, 27 and 30 Stack test air monitoring, monitoring of ambient groundwater quality,	A monitoring report providing the results of monitoring and any supporting records, information, reports and data An interpretation of the monitoring data including comparison to historical trends and emission limits (where applicable). A tabulated summary of: • limit exceedances; • investigations and actions undertaken in response to the exceedances; • events which were exempt to the emission limit; and • management actions undertaken.

and process monitoring	
Condition 24, Table 11	A report providing the quarterly monitoring results, including identification of any exceedances, investigations and actions undertaken in response to the exceedances, and management actions undertaken.
Condition 28	A report providing the results of any monitoring actions taken as a result of reaching an action level specified in Table 13.
Condition 29 Monitoring of Dolocrete encapsulated arsenic trioxide waste	Tabulated monitoring data results in Microsoft Excel format for the concentration of arsenic in the leachate of each composite sample and the average concentration based on every 5 batches of waste A tabulated summary of: • limit exceedances; • investigations and actions undertaken in response to the exceedances; and • management actions undertaken.
Conditions 32, 33 and 46	See Schedule 3 and 4 for reporting requirements.
Condition 36 Vegetation monitoring	A report providing the results and discussion of an annual assessment of vegetation within zone of influence of TSF2, the Red Hill In-pit TSF and the Waldon In-pit TSF.
Condition 38	A review and update (as necessary) of the Kanowna Belle TSF1/TSF2, and the Red Hill/ Waldon In-pit seepage management plans in accordance with condition 38.
Conditions 41 and 42	A monitoring report providing the tabulated results of monitoring and any supporting records, information, reports and data. An interpretation of the monitoring data including comparison to historical trends and emission limits (where applicable).
Condition 44 Complaints	A report providing a summary of complaints received and any action taken to investigate or respond to any complaint.
Condition 47	Submission of an Annual Audit Compliance Report indicating the extent to which the licence holder has complied with the conditions in this Licence.
N/A	An assessment of the information contained within the report against previous monitoring results and Licence limits.
N/A	Any relevant process, production or operational data.

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

(a) the calculation of fees payable in respect of this licence;

(b) the works conducted in accordance with Conditions 2, 4 and 5 of this licence;

(c) any maintenance of infrastructure that is performed in the course of complying with Condition 12 of this licence;

(d) monitoring programmes undertaken in accordance with Conditions 23, 27, 29, 30, 32, 33, 36, 41 and 42 of this licence;

(e) copies of original monitoring reports submitted to the licence holder by third parties; and

(f) complaints received under Condition 44 of this licence.

49. The books specified under Condition 48 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 licence holder for the duration of the licence; and

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

Definitions

In this licence, the terms in Table 19 have the meanings defined.

Table 19: Definitions

Term	Definition
ACN	Australian Company Number
ambient air of a protected area	has the meaning given in clause 5 of the Environmental Protection (Goldfields Residential Areas) (Sulfur Dioxide) Policy 2003.
Annual Audit Compliance Report (AACR)	means a report submitted in a format approved by the CEO (relevant guidelines and templates may be available on the Department's website).
annual period	a 12 month period commencing from 1 January until 31 December of the immediately following year.
AS 3580.1.1	means the Australian Standard AS 3580.1.1 Methods for sampling and analysis of ambient air – Guide to siting air monitoring equipment.
AS 3580.4.1	means the Australian Standard AS 3580.4.1 Methods for sampling and analysis of ambient air - Determination of sulfur dioxide - Direct reading instrumental method.
AS 3580.14	means the Australian Standard AS 3580.14 Methods for sampling and analysis of ambient air - Meteorological monitoring for ambient air quality monitoring applications.
AS 4323.1	means the Australian Standard AS4323.1 Stationary Source Emissions Method 1: Selection of sampling positions.
AS 4439.3	means the Australian Standard AS4439.3 Wastes, sediments and contaminated soils – Preparation of leachates — Bottle leaching procedures.
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples.
AS/NZS 5667.10	means the Australian Standard AS/NZS 5667.10 Water Quality – Sampling – Guidance of sampling of wastewaters.
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 Water Quality – Sampling – Guidance on sampling of groundwaters.
averaging period	means the time over which a limit is measured, or a monitoring result is obtained.
books	has the same meaning given to that term under the EP Act

Term	Definition
CEO	means Chief Executive Officer of the Department. "submit to / notify the CEO" (or similar), means either: Director General Department administering the *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 info@dwer.wa.gov.au
clock hour	means a sixty minute period commencing on the hour.
CN-free	means free cyanide
Department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
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.
environmentally hazardous material	means material (either solid or liquid raw materials, materials in the process of manufacture, manufactured products, products used in the manufacturing process, by-products and waste) which if discharged into the environment from or within the premises may cause pollution or environmental harm. Note: Environmentally hazardous materials include dangerous goods where they are stored in quantities below placard quantities. The storage of dangerous goods above placard quantities is regulated by the Department of Mines and Petroleum.
EP Act	*Environmental Protection Act 1986* (WA)
EPP	means the Environmental Protection (Goldfields Residential Areas) (Sulfur Dioxide) Policy 2003.
EP Regulations	Environmental Protection Regulations 1987 (WA)
freeboard	means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point.
HDPE	means high-density polyethylene with a permeability of at least <10-9m/s or equivalent.
licence	refers to this document, which evidences the grant of a licence by the CEO under section 57 of the EP Act, subject to the specified conditions contained within.
licence holder	refers to the occupier of the premises, being the person specified on the front of the licence as the person to whom this licence has been granted.
mAHD	means metres Australian Height Datum
mBGL	means metres below ground level
Maximum permitted sulfur dioxide concentration	has the meaning given in clause 6 of the Environmental Protection (Goldfields Residential Areas) (Sulfur Dioxide) Policy 2003.
monthly period	means a one-month period commencing from the first day of a month until the last day of the same month.
NATA	means the National Association of Testing Authorities, Australia
NATA accredited	means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis.
normal operating conditions	means any operation of a particular process (including abatement equipment) excluding start-up, shut-down, and upset conditions, in relation to stack

Term	Definition
	sampling or monitoring.
PM	means total particulate matter including both solid fragments of material and minuscule droplets of liquid.
premises	refers to 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 licence.
prescribed premises	has the same meaning given to that term under the EP Act.
Protected Area	has the meaning given in clause 4 of the Environmental Protection (Goldfields Residential Areas) (Sulfur Dioxide) Policy 2003.
quarterly	means the 4 inclusive periods from 1 January to 31 March, 1 April to 30 June, 1 July to 30 September and 1 October to 31 December.
return water	means to the process of recovering, treating, and reusing water that has been used in mining operations, or water that is removed during the dewatering process
RL	means reduced level (or relative level) and means height in meters above sea level.
shut-down	means the period when plant or equipment is brought from normal operating conditions to inactivity.
spot sample	means a discrete sample representative at the time and place at which the sample is taken.
stack test	means a discrete set of samples taken over a representative period at normal operating conditions.
start-up	means the period when plant or equipment is brought from inactivity to normal operating conditions.
STP dry	means standard temperature and pressure (0^{o}Celsius and 101.325 kilopascals respectively), dry.
suitably qualified geotechnical engineer	means a person who: (a) holds a Bachelor of Engineering recognised by the Institute of Engineers (b) has a minimum of 5 years of experience working in the area of geotechnical engineering
suitably qualified hydrogeologist	means a person who holds a tertiary qualification specialising in environmental science or equivalent and has a minimum of five years of experience working in the area of hydrogeology, including investigation and assessment of groundwater resources, or who is otherwise approved by the CEO to act in this capacity
sulfur dioxide concentration	means the sulfur dioxide concentration averaged over one clock hour.
SWL	means standing water level
TSF	means Tailings Storage Facility
USEPA	means United States (of America) Environmental Protection Agency.
USEPA Method 5	means the most recent version and relevant part of USEPA Method 5 – Determination of particulate matter emissions from stationary sources.
USEPA Method 17	means the most recent version and relevant part of the USEPA Method 17 Determination of particulate matter emissions from stationary sources.
USEPA Method 29	means the most recent version and relevant part of the USEPA Method 29 – Determination of metals emissions from stationary sources.

Term	Definition
usual working day	means 0800 – 1700 hours, Monday to Friday excluding public holidays in Western Australia.
waste	has the same meaning given to that term under the EP Act.
zone of influence	means the area of a receiving environment with the potential to be altered or changed as a result of an emission or discharge.

END OF CONDITIONS

Schedule 1: Maps

Premises map

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

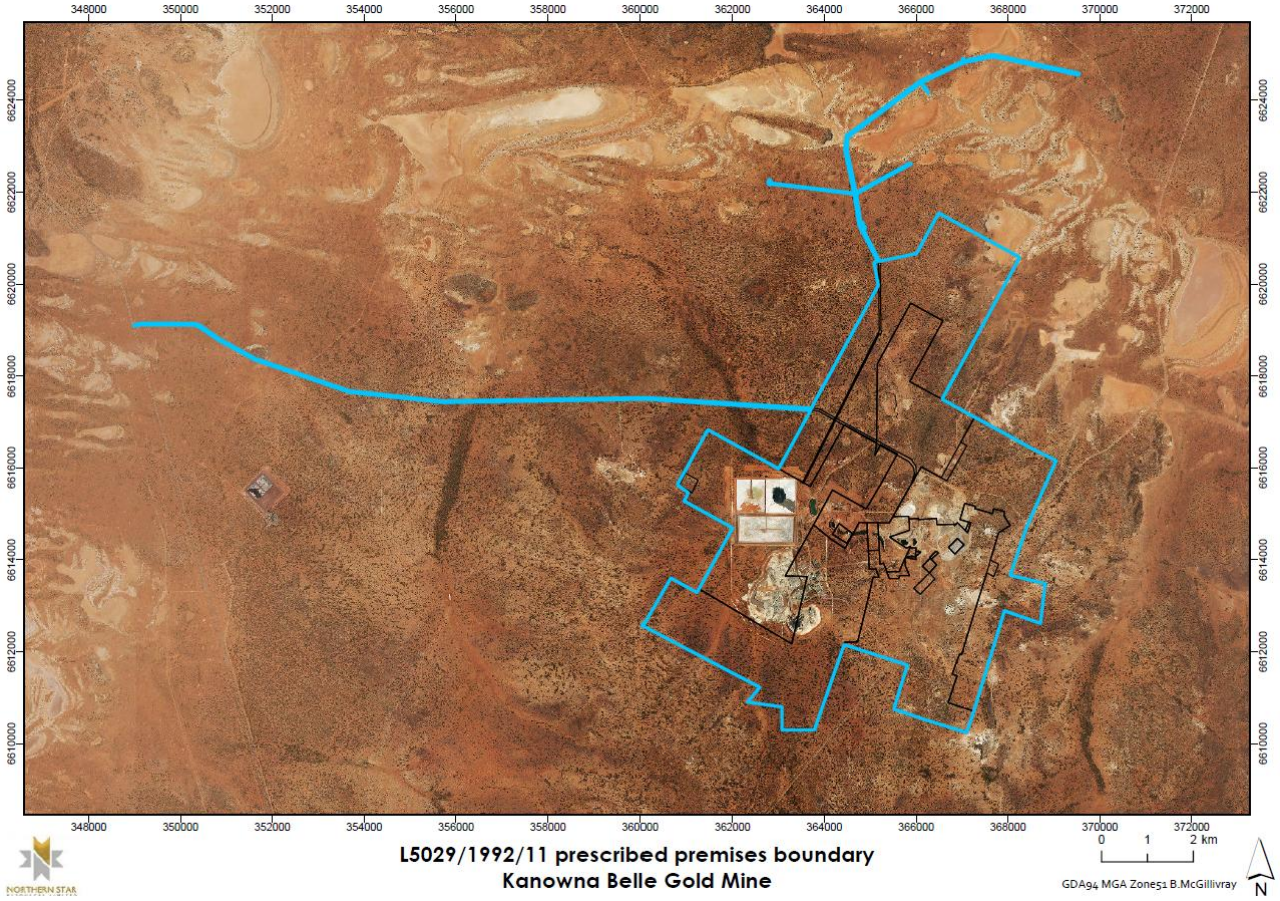


Figure 1: Map of the boundary of the prescribed premises

Emission points and monitoring points

Figure 2: Map of emission points and monitoring of point source emissions to air

Figure 3: Map of meteorological monitoring location 1

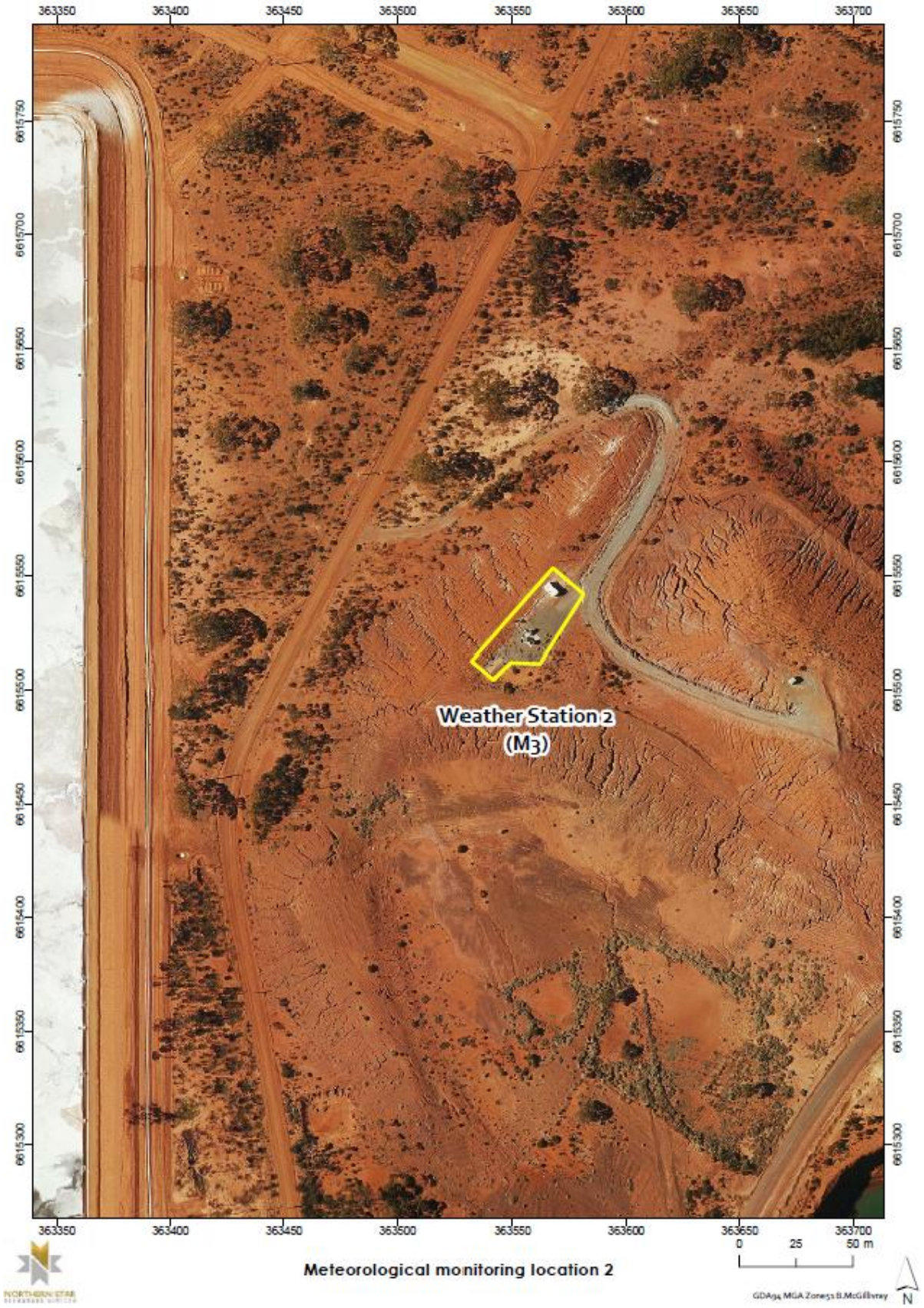
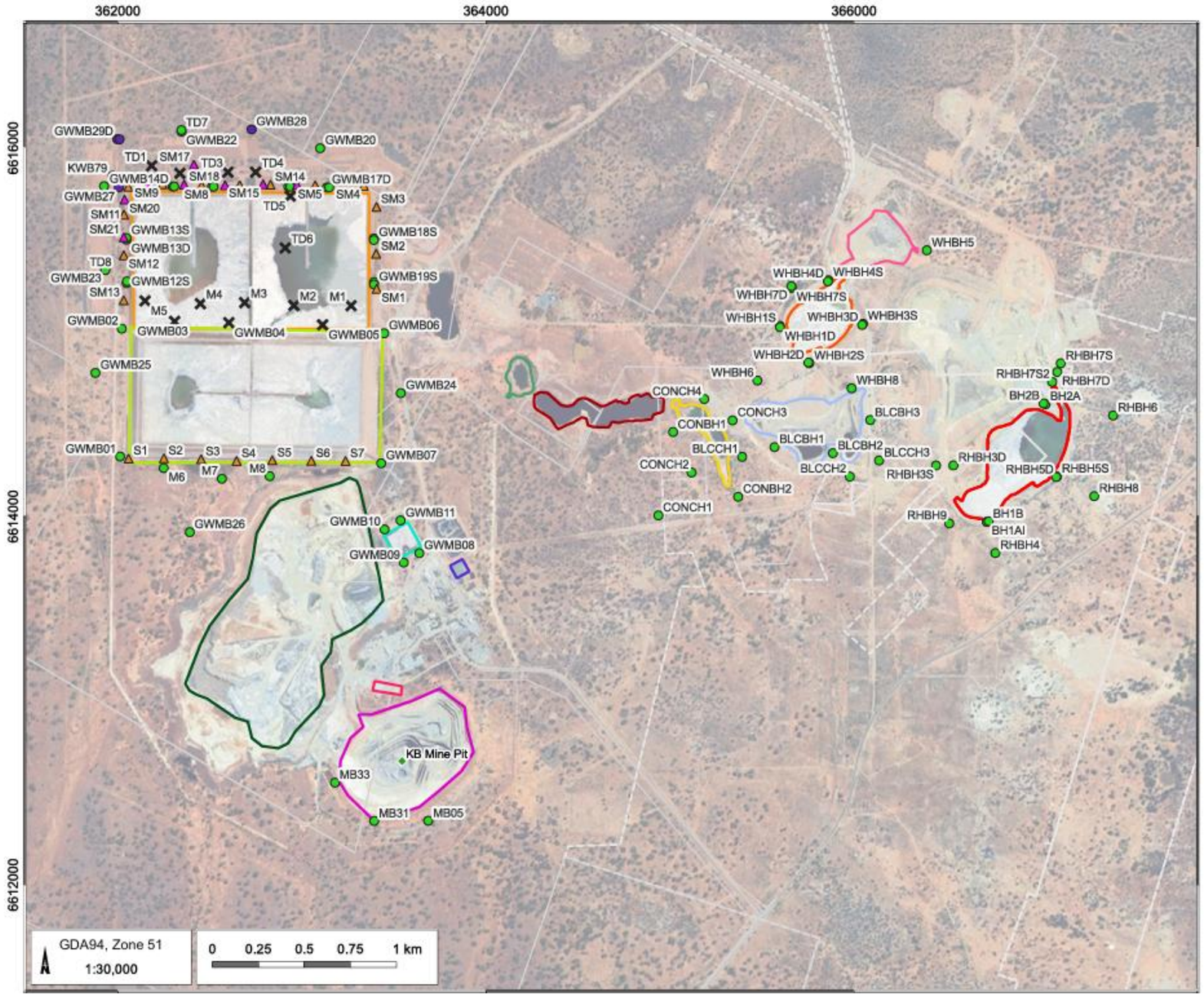


Figure 4: Map of meteorological monitoring location 2

Location of Groundwater Bores



LEGEND

Kanowna Belle bore network

- Monitoring bore
- New monitoring bore
- New seepage management
- Seepage management
- Decommissioned
- Production bore

Mine Infrastructures

- Kanowna Belle Mine
- Mine Surface Dam
- Process Water Dam
- Calcine Dam
- TSF1
- TSF2
- Waldon Pit
- Red Hill Pit
- QED Main Pit
- Lead Pit
- Consol's Pit
- BLC Pit
- WRD
- Robinsons Pit

Mining Leases

- Northern Star (Kanowna) Tenament
- Kanowna Tenament

Kanowna Belle Licence Review 2024
(KNB5013.001)

Mine infrastructure, TSFs, and monitoring network

DATE
30/01/2025

AGE

FIGURE No:
2.1

Figure 5: Groundwater monitoring bores and seepage recovery bores

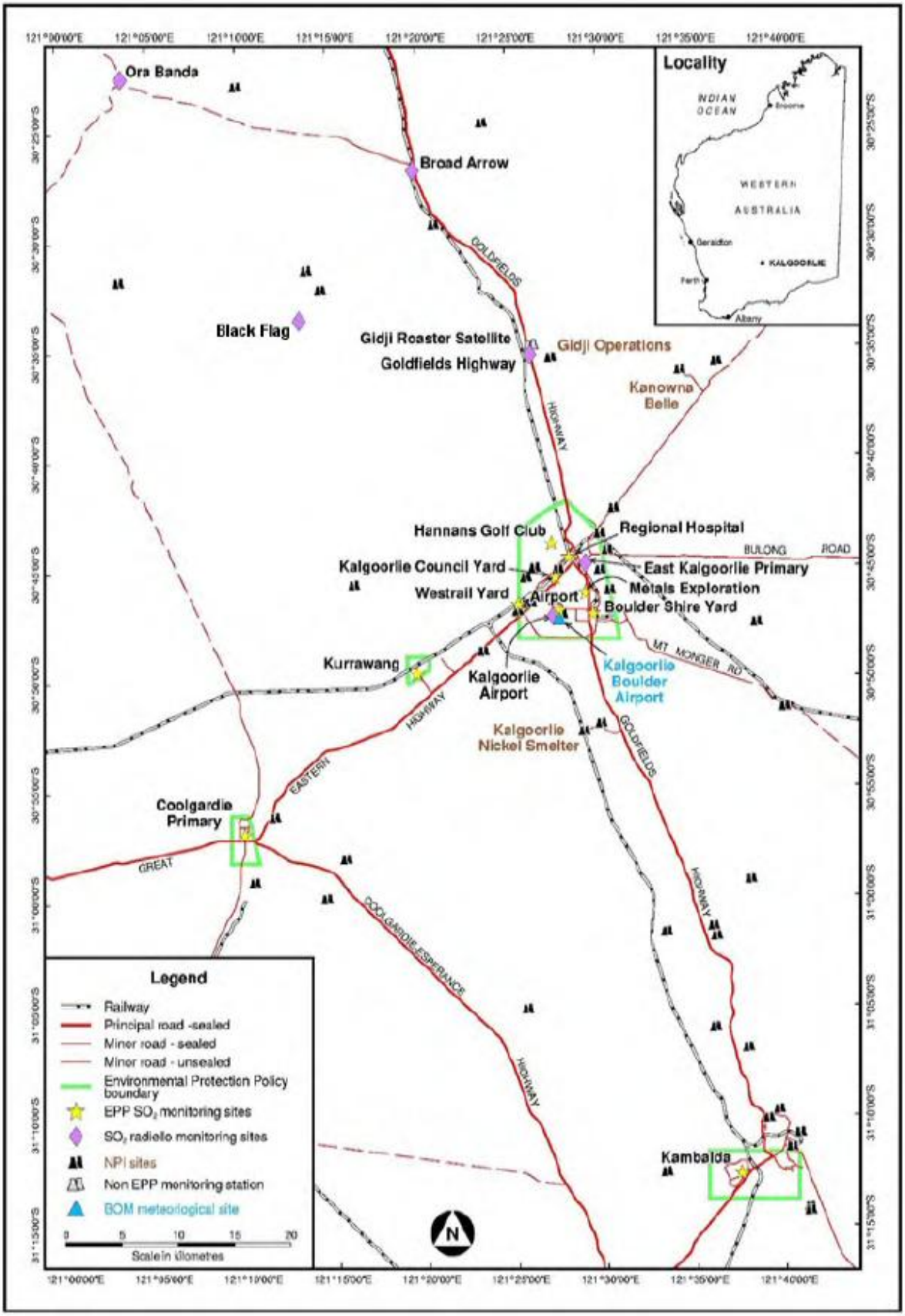


Figure 6: EPP Protected Area- Sulfur dioxide monitoring locations

Maps of containment infrastructure

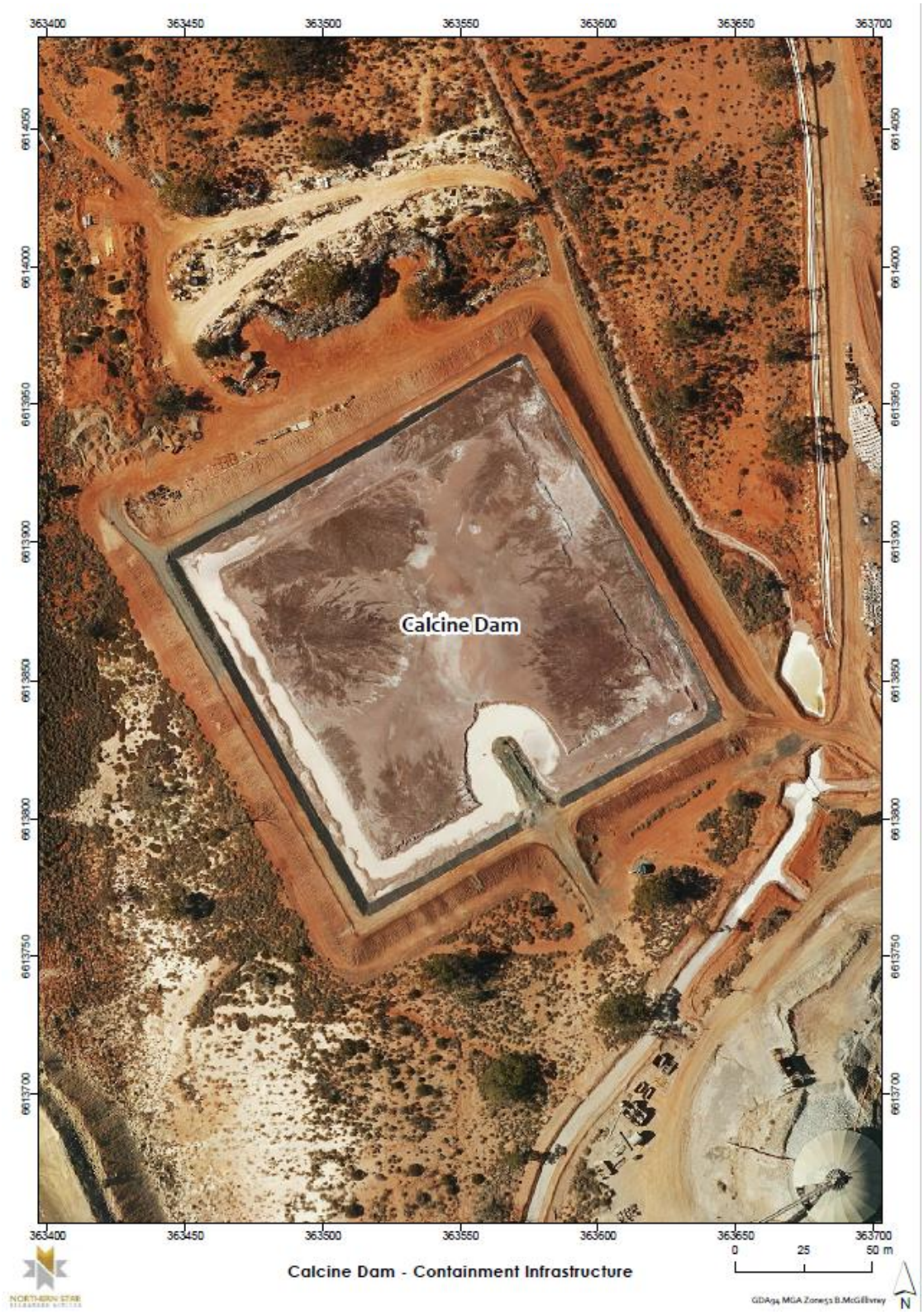


Figure 7: Calcine Dam

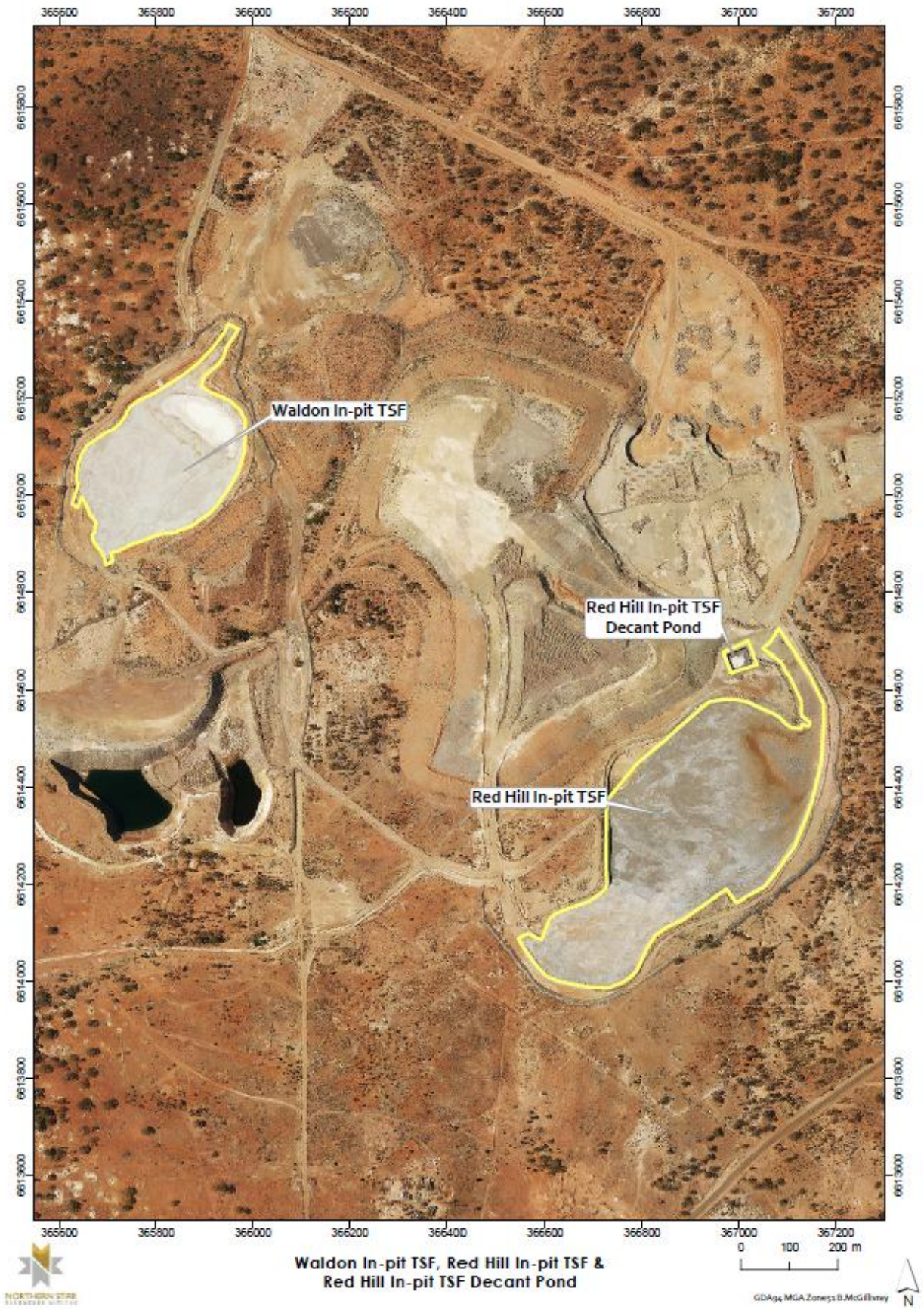


Figure 8: Waldon pit, Red Hill in-pit TSF and Red Hill decant pond

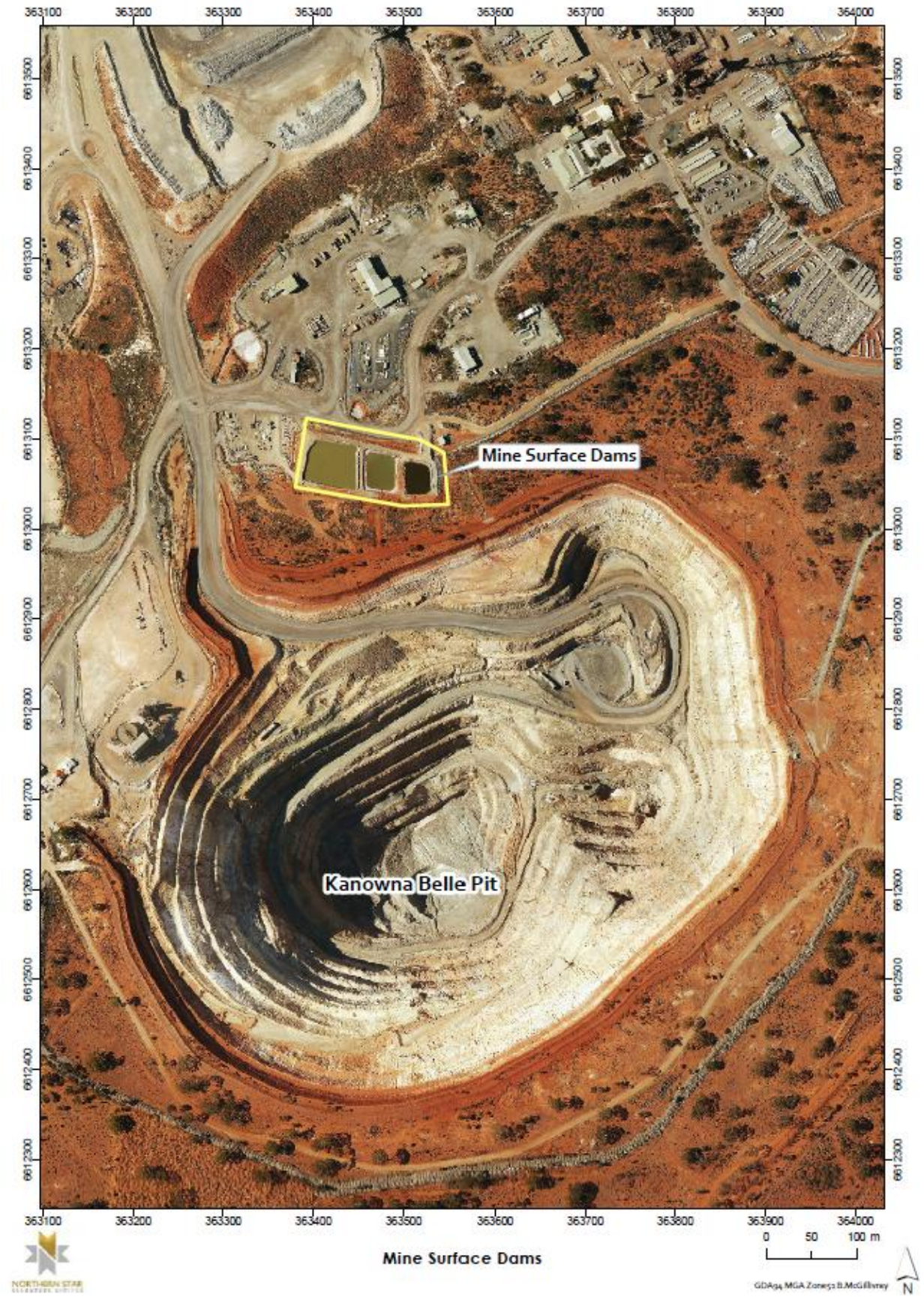


Figure 9: Mine surface dams

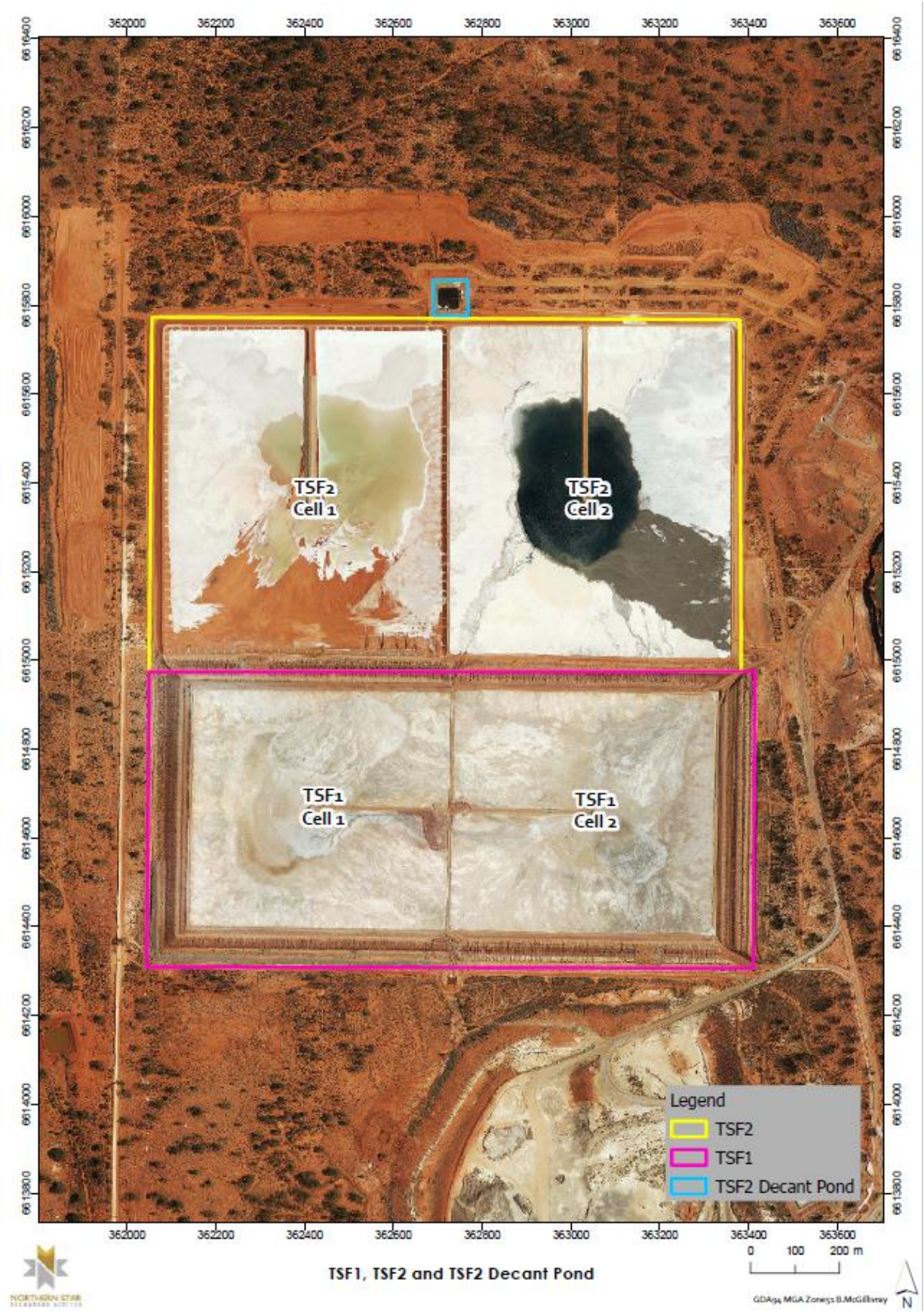


Figure 10: TSF1 and TSF2 decant pond

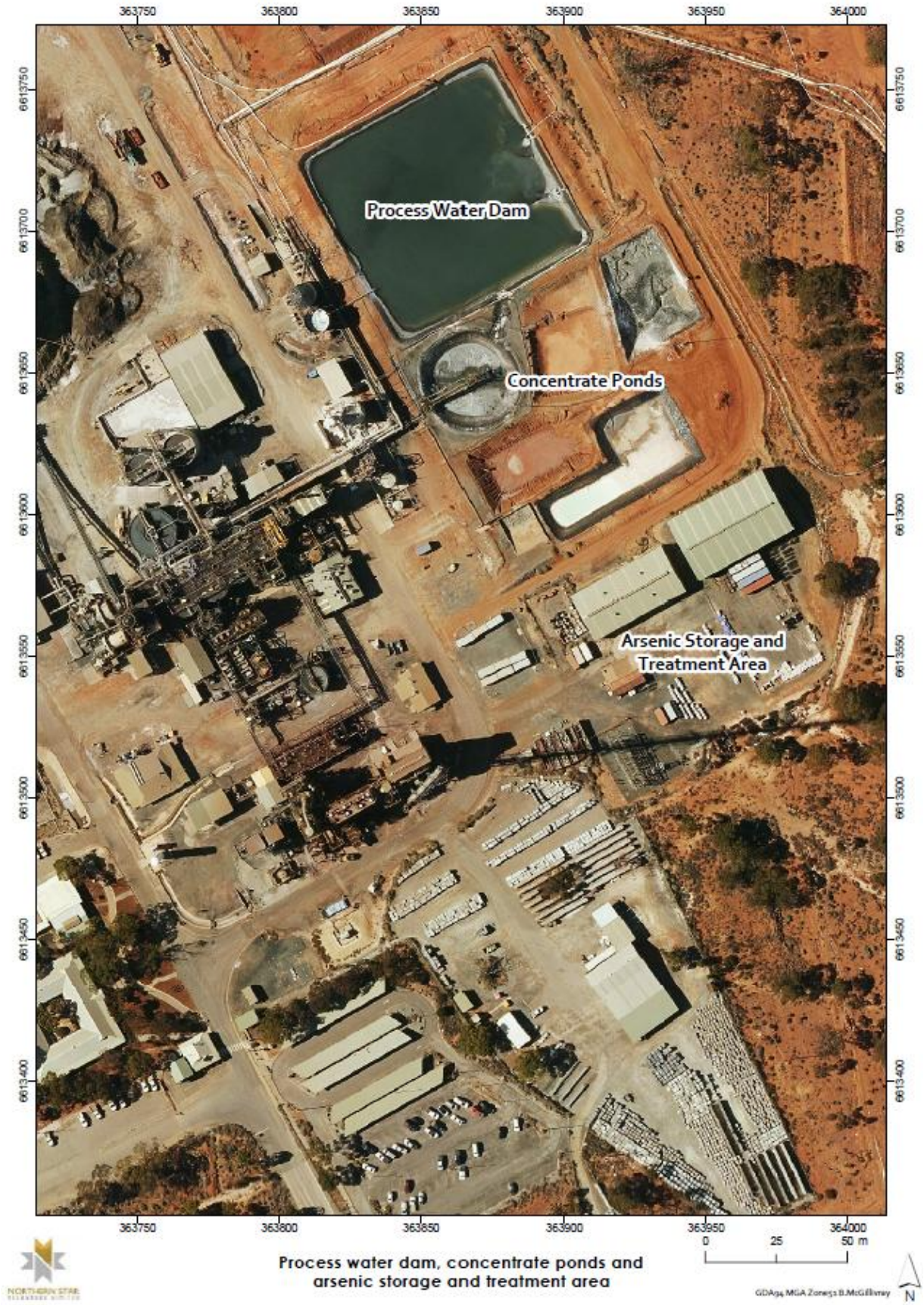


Figure 11: Process water dam, concentrate ponds and arsenic storage and treatment area

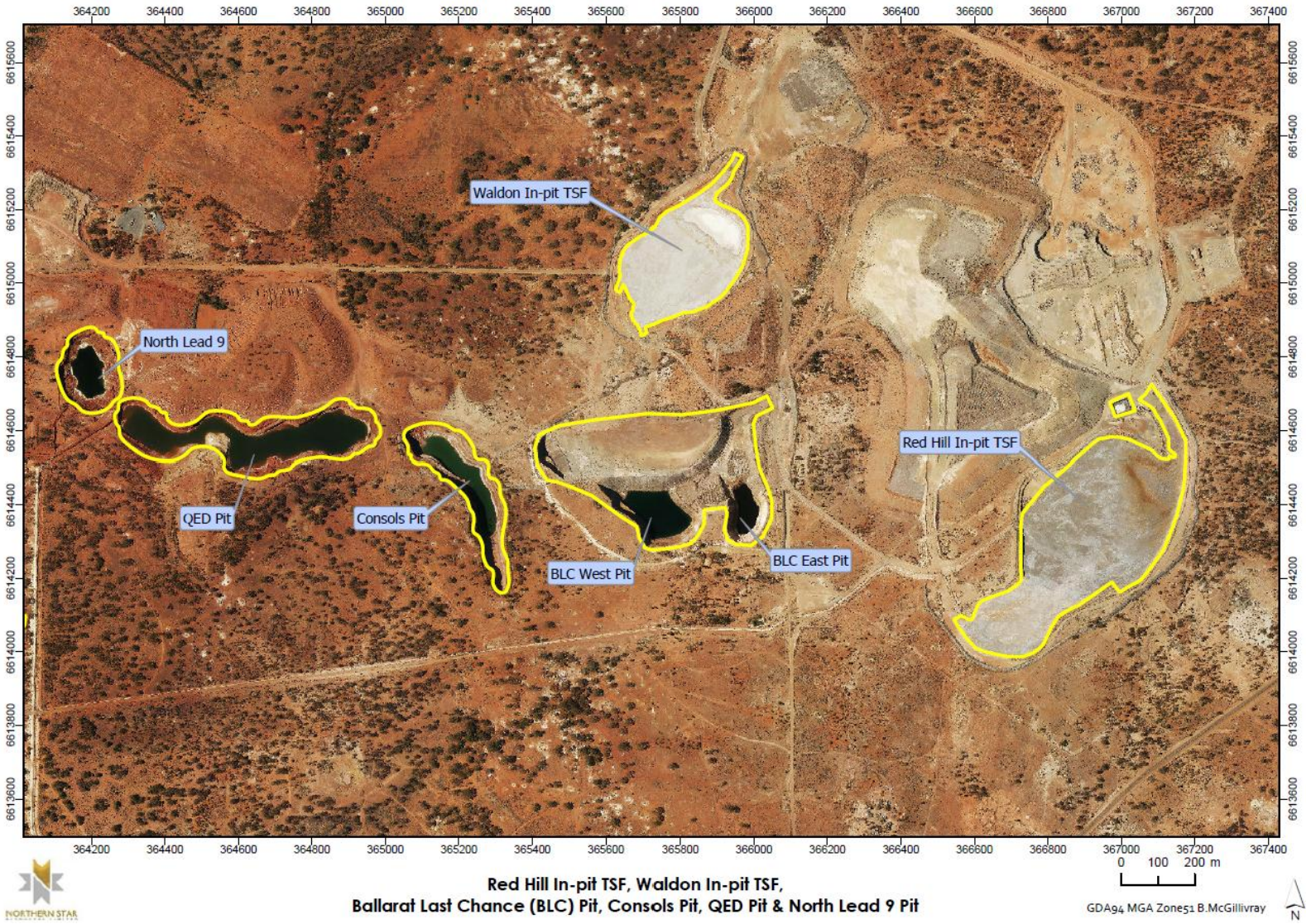


Figure 5: Red Hill In-pit TSF, Waldon Pit, Ballarat Last Chance (BLC) Pits, and Consols Pit

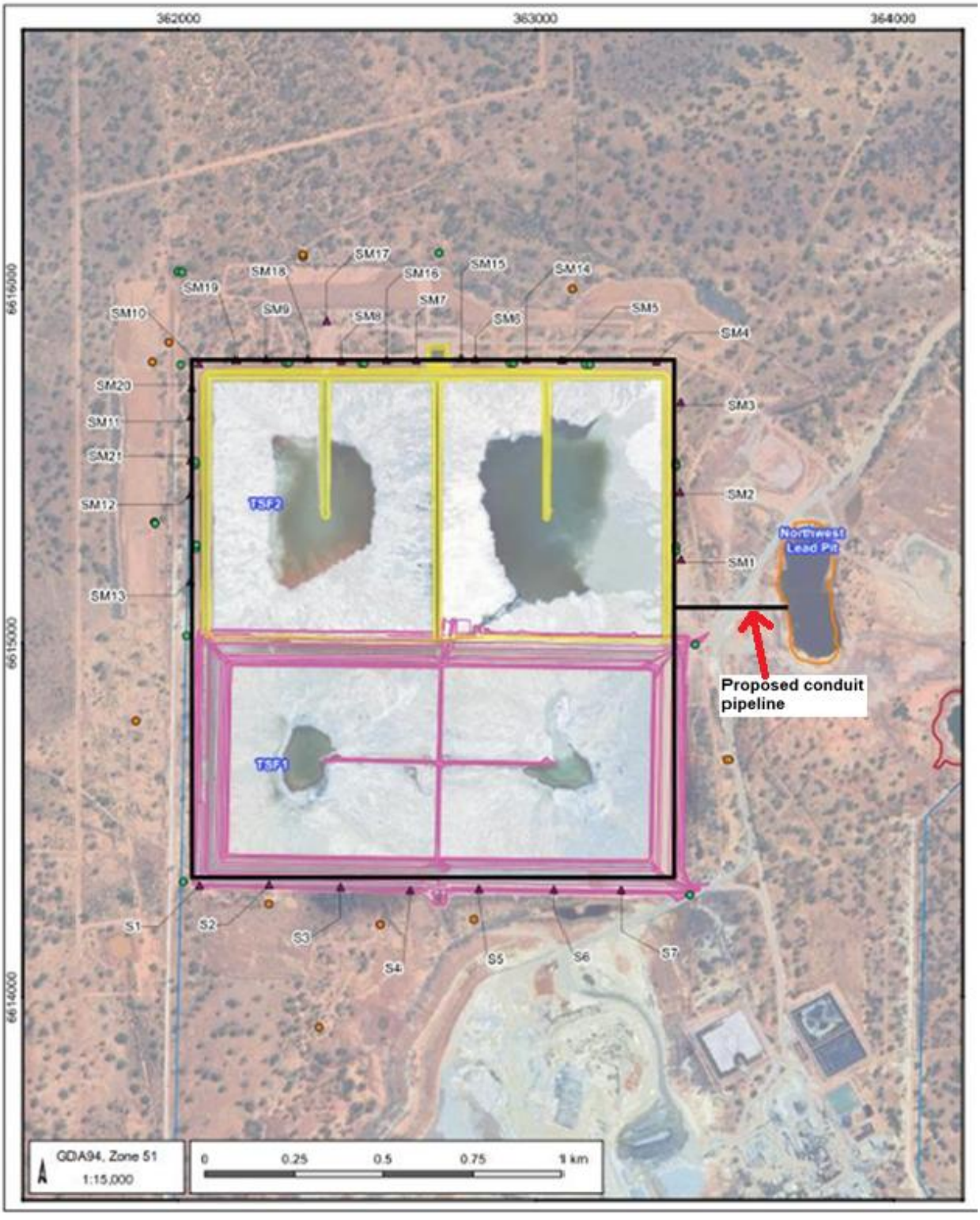


Figure 13: Northwest Lead Pit

Maps of existing and proposed infrastructure

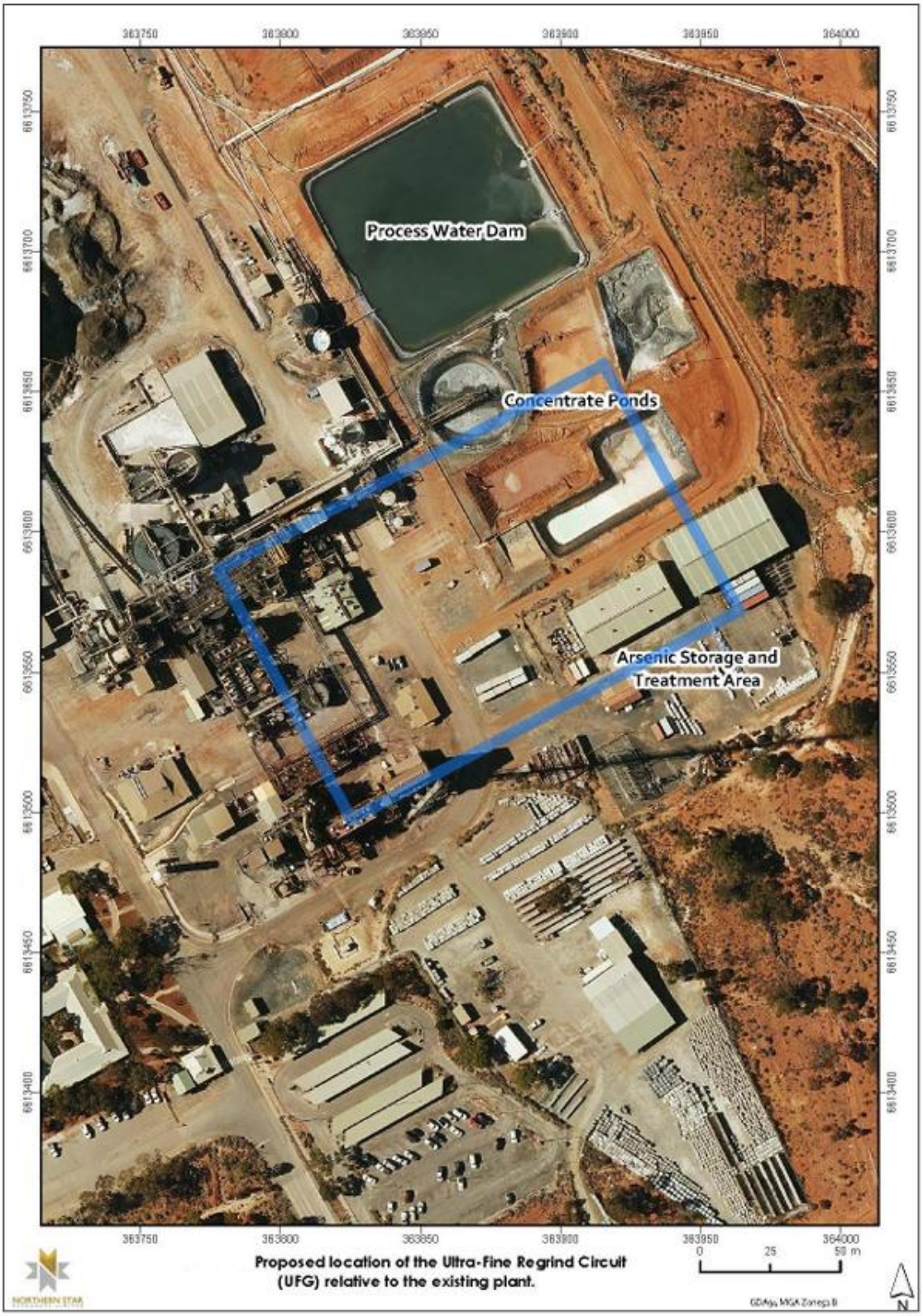


Figure 14: Proposed location of the Ultra-fine Grind Mill (UFG) IsaMill M3000

Figure 15: Proposed location of the Mobile Screening Plant

Figure 16: Current location of the wet paste plant and the proposed location of the dry paste plant

Schedule 2: TSF2 embankment raise design

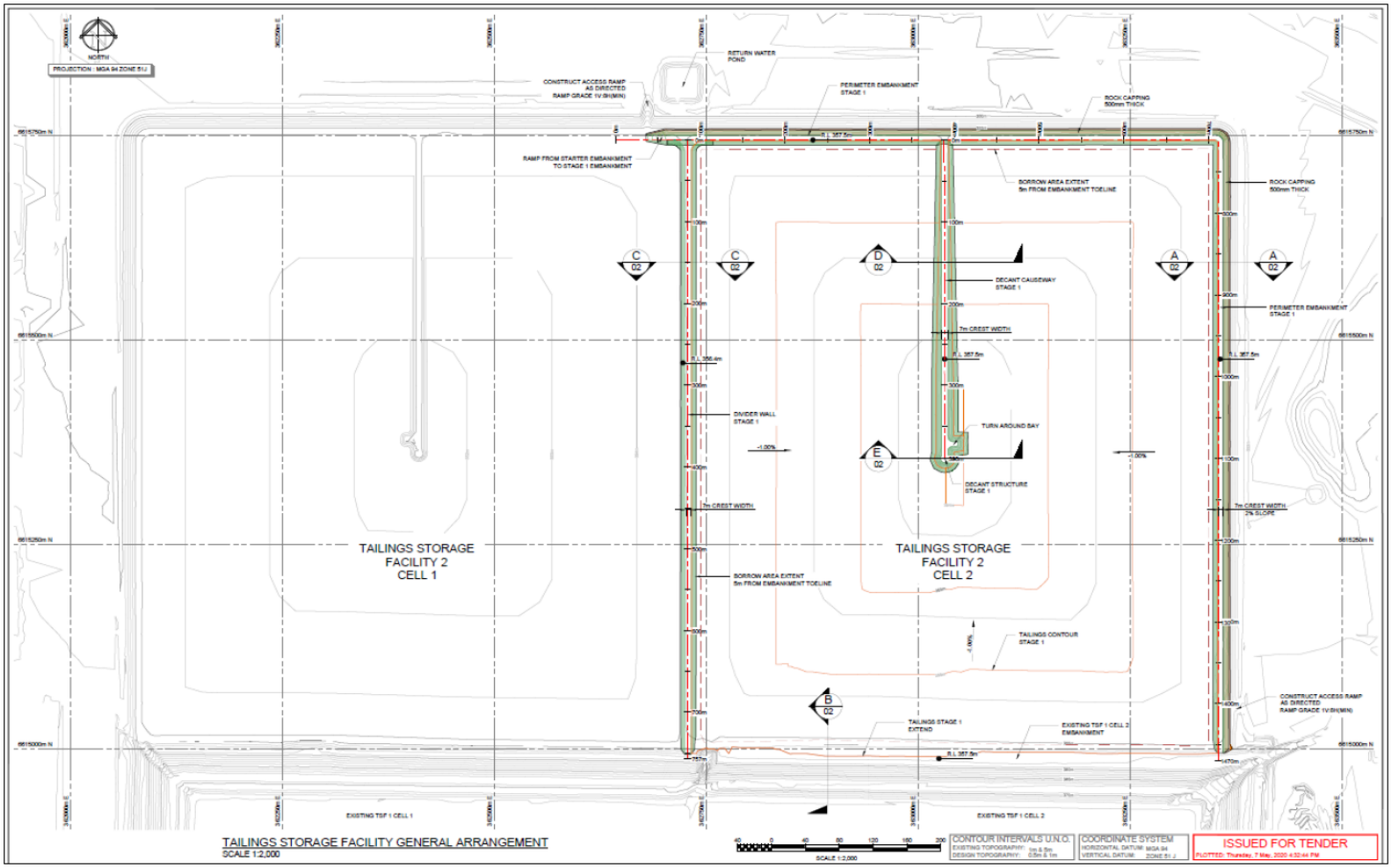


Figure 17: General design of embankment raise

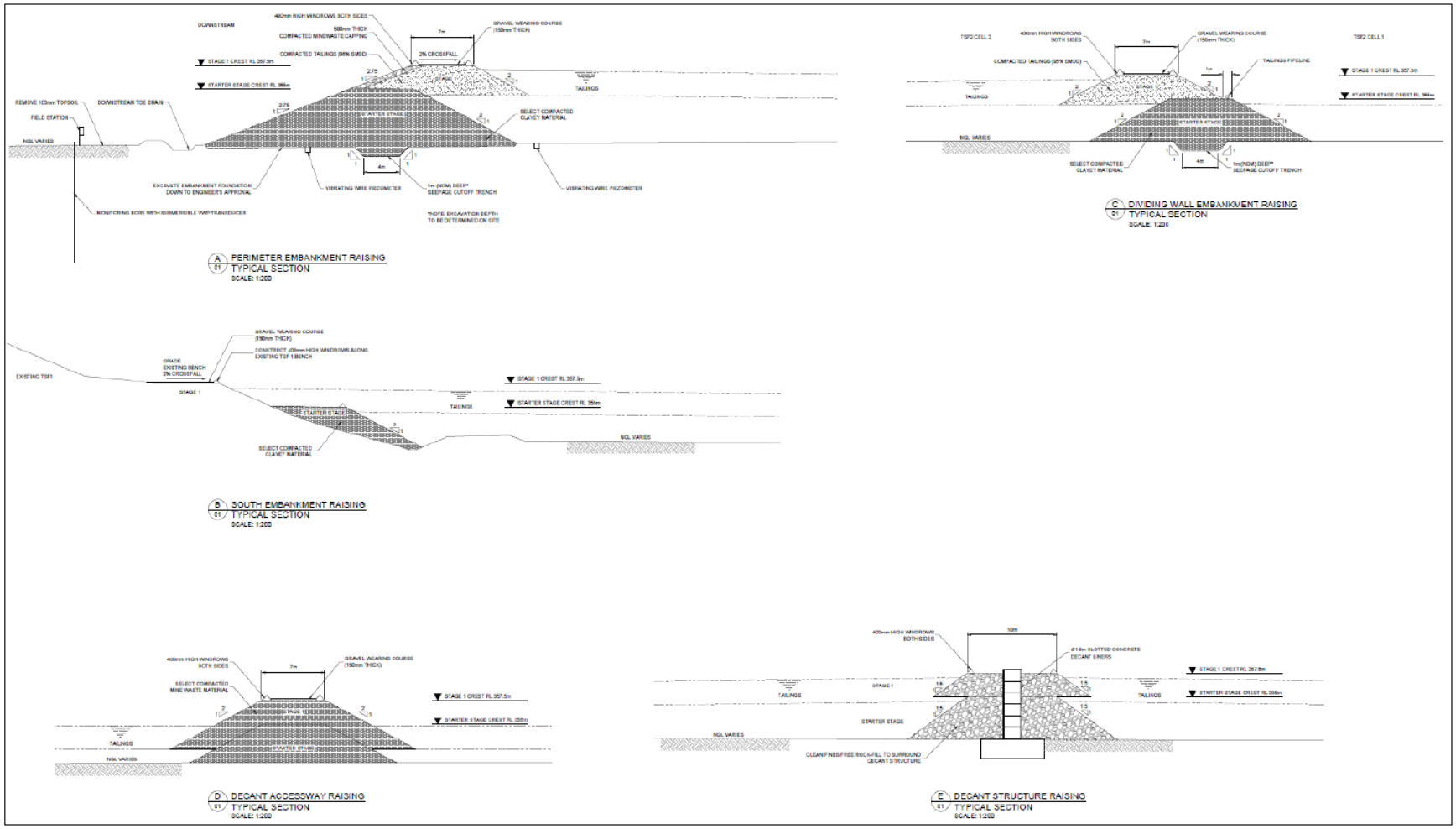


Figure 18: TSF2 typical sections and detail

Schedule 3: Annual reporting

The following schedule outlines the investigation and reporting requirements triggered as a result of Condition 46.

Reporting frequency

Results obtained from monitoring undertaken in accordance with Conditions 32 and 33 are required to be reported and submitted annually to the CEO as an appendix to the Annual Environmental Report as required by Condition 47. The first Annual Environmental Report is due on 30 March 2026 and must include the following information:

- Ambient sulfur dioxide data in the following format:
  - 24-hour averages;
  - Daily maximum 5-minute averages;
  - Daily 5-minute averages;
  - Daily maximum clock hour averages;
  - Summarised in the form of a one-calendar-month table, one for each monitoring station; and
  - Time series listing on an approved computer-readable medium in the format specified in Schedule 4, recorded in parts per million.
- Ambient sulfur dioxide data recovery (%) in the following format:
  - Daily and monthly averages; and
  - Summarised in the form of a one-calendar-month table, one for each monitoring station.
- Total number of hours for each month, when the clock hour average sulfur dioxide concentration exceeded 0.20ppm and total number of hours in the month when the clock hour average sulfur dioxide concentration exceeded 0.25ppm in the following format:
  - Count of clock hours for each month; and
  - Summarised in the form of a one-calendar-month table, one for each monitoring station.
- Meteorological monitoring
  - 10-minute averages; and
  - Time series listing on an approved computer-readable medium in the format specified in Schedule 4.
- Roaster shut-down related to the control of Sulfur Dioxide Concentrations for the following parameters:
  - Roaster shut down and start up times;
  - Identity of the sulphur dioxide monitor which indicated the need for the roaster shut down;
  - Wind speed and wind direction at the time of roaster shut down; and
  - Maximum 1-hour averaged sulphur dioxide concentration recorded at the sulphur dioxide monitor in the hours surrounding the roaster shut down.
- Plant malfunctions, or when the plant is offline from the roaster, or during any planned plant shutdowns in a computer readable format for the following parameters:
  - Roaster shut-down and start-up times, with shut-downs which are related to the control of Sulfur Dioxide concentrations appropriately identified;
  - Tonnage of dry concentrates feed to the roaster each day; and

- Percentage of sulfur in each day's feed of dry concentrates.

Schedule 4: Data format for monitoring data files

Line 1: SITE NAME:XXXXXXXXXXX

Line 2: ---*blank line*-------

Line 3: column description

Line 4: column description

Line 5: ---*blank line*-------

Line 6: ddmmyyyy HHMM xxxx.xx xxxx.xx xxxx.xx . . . . . .

Line 7: ddmmyyyy HHMM xxxx.xx xxxx.xx xxxx.xx . . . . . .

|

|

V

Line n:

where: dd is the two digit day of the month i.e. 01, 02,…….31.

mm is the two digit month code i.e. 01, 02,…….12.

yyyy is the four digit year i.e. 1999, 2000……..

HH is the two digit hour code i.e. 01, 02,……24.

MM is the two digit minute code i.e. 10, 20,……50.

xxxx.xx is the format of the data represented in FORTRAN notation as F7.2

The time period shall represent the end of the data period. Hence the first data period for any day shall be 0010 hours and the data associated with this period shall be the data for the five minutes up to this time. The last time for the same day shall be 2400 and the data associated with this period shall be the data for the ten minutes up to this time.