Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6389/2020/1
Works approval holder	Polaris Metals Pty Ltd
ACN	085 223 570
Registered business address	20 Walters Drive OSBORNE PARK WA 6017
DWER file number	DER2020/000173
Duration	11/08/2020 to 10/08/2027
Date of issue	11/08/2020
Date of Amendment	30/05/2024
Premises details	Parker Range Iron Ore Project Parker Range Road, Marvel Loch M77/741, M77/742 and M77/764 as depicted in Schedule 1.

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: premises on which — (a) metallic or non-metallic ore is crushed, ground, milled or otherwise processed; or (b) tailings from metallic or non-metallic ore are reprocessed; or (c) tailings or residue from metallic or non-metallic ore are discharged into a containment cell or dam.	5,000,000 tonnes per year
Category 6: Mine dewatering: premises on which water is extracted and discharged into the environment to allow mining of ore.	1,000,000 tonnes per year
Category 12: Screening etc. of material: premises (other than premises within category 5 or 8) on which material extracted from the ground is screened, washed, crushed, ground, milled, sized or separated.	500,000 tonnes per year
Category 89: Putrescible landfill site: premises on which waste (as determined by reference to the waste type set out in the document entitled “Landfill Waste Classification and Waste Definitions 1996” published by the Chief Executive Officer, as amended from time to time) is accepted for burial.	1,250 tonnes per year

This amended works approval was granted to the works approval holder, subject to the attached conditions, on 30 May 2024 by:

Christine Pustkuchen
Digitally signed by Christine Pustkuchen
Date: 2024.05.30 12:13:02 +08'00'

Manager, Resource Industries
REGULATORY SERVICES
Officer delegated under section 20 of the Environmental Protection Act 1986 (WA)

Works approval history

Date	Reference number	Summary of changes
11/08/2020	W6389/2020/1	Works approval granted.
20/08/2021	W6389/2020/1	Works approval amended to add Category 12 mobile screening and crushing plant infrastructure.
31/10/2022	W6389/2020/1	Works approval amended to increase the throughput of Category 12 from 70,000 to 500,000 tonnes per annual period.
02/05/2023	W6389/2020/1	Works approval amendment to extend the expiry date from 10/08/2023 to 10/08/2024
30/05/2024	W6389/2020/1	Works approval amendment to extend the expiry date from 10/08/2024 to 10/08/2027.

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;

(c) at the corresponding infrastructure location; and

(d) within the corresponding timeframe as set out in Table 1 below.

Table 1: Design and construction / installation requirements

	Infrastructure	Design and construction requirements	Infrastructure location	Timeframe
1.	Evaporation Pond	The evaporation pond must be constructed with a design capacity to contain a 1 in 100 year, 72 hour AEP rainfall event. The evaporation pond must be constructed with a design capacity to maintain at least 1 m operational freeboard. The crest at the top surface of the evaporation pond and turkeys nest embankment must be graded inwards to drain water into the evaporation pond. A visual marker on the dam wall must be installed and surveyed to enable visual check of freeboard and water level. Evaporation pond must be lined with HDPE liner at least 1.5 mm thickness and permeability of less than $1x10^{-9}$m/s All HDPE joint seams must be leak tested post installation and any perforations must be repaired. The downstream embankments must be armoured to resist erosion from surface water runoff. A perimeter drain, with indicative dimensions of 2m wide and 1 m deep, and sump system must be constructed downstream of the embankment to collect rainfall runoff water shedding and sediment from the outer surface of the evaporation pond embankments. The sump system volume must be sized to retain a 1 in 50 year ARI rainfall event.	Schedule 1: Figure 2	N/A
2.	Dewatering Pipeline	Constructed to meet the requirements of the following standards:		

	Infrastructure	Design and construction requirements	Infrastructure location	Timeframe
		• AS/NZS 2033; • AS/NZS 4129; • AS/NZS 4130; and • AS/NZS 4131. Provided with secondary containment adequate to contain any spill for a period equal to the time between routine inspections. Installed with an appropriate pressure indicator system capable of providing auto shut-off and detection and control of leaks. Installed with flow meters at discharge points to turkeys nest and outflow points.		
3.	Modular crushing and screening plant (Category 5)	Must be installed in the general area as identified in the infrastructure location map specified. Crusher must be installed with appropriate water sprays to reduce dust generation. Dust suppression sprinklers and sprays must be installed at the Run of Mine (ROM) feed hopper, transfer points and on the product stockpile to control levels of fugitive dust. The crushing and screening plant must be designed to comply with the *Environmental Protection (Noise) Regulations 1997*. A diversion drain must be constructed to direct stormwater away from the crushing screening plant. The diversion drain must run at natural grade in a northerly direction into a sedimentation/evaporation dam. This sedimentation/evaporation dam must be designed to accommodate up to a 1:50 yr ARI rainfall event. A spillway must be incorporated into the sedimentation/evaporation dam to provide controlled release. Chemical and hydrocarbon storage areas must be constructed in compliance with AS 1940.	Schedule 1: Figure 2 and Figure 4.	N/A
4.	Landfill	Must be constructed in the general area as specified in Schedule 1 Figure 2. A fence must be installed around the boundary of the landfill and secured by lockable gate. Earthen bunding must be installed around the perimeter of the landfill to prevent surface water inflows of up to a 1% AEP rainfall event. A minimum separation distance between the	Schedule 1: Figure 1 and Figure 2.	N/A

	Infrastructure	Design and construction requirements	Infrastructure location	Timeframe
		base of the landfill and the highest groundwater level must not be less than 10 metres.		
5.	Monitoring Bore/ Piezometers	Monitoring bores/ piezos surrounding the evaporation pond must be installed in the general area as specified in Schedule 1 Figure 2 and Figure 3. Location: Must be sited in accordance with *Water Quality Protection Note 30: Groundwater Monitoring Bores, February 2006, Government of Western Australia.* 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.	Schedule 1: Figure 2	Must be constructed and determined to be operational prior to commencement of time limited operations under condition 4
6.	Mobile crushing and screening plant (Category 12)	Mobile crushing and screening plant to be installed as per manufacture's specifications. Temporary bunds to be installed around mobile crushing and screening plant to retain contaminated stormwater onsite.	Within the premises boundary as outlined in Schedule 1, Figure 1.	N/A

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

Compliance reporting

2. The works approval holder must within 60 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 civil or geotechnical engineer that the landfill or component(s) thereof, as specified in condition 1, have been constructed in accordance with the relevant requirements specified in condition 1;

(b) certification by the Engineering Manager or their equivalent that the modular crushing and screening plant, as specified in condition 1, have been constructed in accordance with the relevant requirements specified in condition 1;

(c) a Quality Control / Quality Assurance Certificate from a suitably qualified person which demonstrates that the HDPE liner and dewatering pipeline system meets construction specification/s and condition 1;

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

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

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

Time limited operations phase

Commencement and duration

4. The works approval holder may only commence time limited operations for an item of infrastructure identified in condition 1 once the Environmental Compliance Report as required by condition 2 has been submitted by the works approval holder for that item of infrastructure.

5. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 1 (as applicable):

(a) for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 4 (as applicable) 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*.

Time limited operations requirements

6. 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.	Modular crushing and screening plant (Category 5)	• Dust suppression sprays, installed at the ROM feed hopper, transfer points and on the product stockpile, must be operational. • Water trucks must be available and used around the plant and on the ROM and roads as required to minimise fugitive dust emissions. • Moisture content of at least 8% must be maintained to minimise fugitive dust generation.	Schedule 1: Figures 1 and 2
2.	Landfill	• Authorised waste types include Putrescible Waste, Inert Waste Type 1, Inert Waste Type 2 and treated hydrocarbon contaminated soil meeting waste acceptance criteria for contaminated solid waste in Class II landfills as specified in the DWER *Landfill waste classification and waste definitions (December 2019)*. • Disposal of waste must only occur in defined trench	Schedule 1: Figures 1 and 2

	Site infrastructure and equipment	Operational requirement	Infrastructure location
		within an area enclosed by the fence and earthen bunds. • Putrescible waste must be covered with at least 300 mm of inert and incombustible material at a minimum of once per week during operations. • Waste with the potential to become windblown must be covered as soon as practicable after disposal. • Contaminated, hazardous and hydrocarbon waste must be disposed offsite at an authorised facility. • No waste shall be burnt on the premises. • Earthen bunding must be maintained around the perimeter of the landfill to prevent surface water inflows of up to a 1% AEP rainfall event. • Tyres shall only be landfilled[1]: – in batches separated from each other by at least 100mm of soil and each consisting of not more than 40 cubic metres of tyres reduced to pieces; or – in batches separated from each other by at least 100mm of soil and each consisting of not more than 1,000 whole tyres.	
3.	Evaporation Pond	• Operational freeboard of at least 1m must be maintained. • A freeboard marker must be maintained on the evaporation pond wall. • Integrity of the HDPE liner must be maintained to meet permeability of less than $1x10^{-9}$ m/s. • A fence must be maintained around the dam to prevent fauna ingress.	Schedule 1: Figures 1 and 2
4.	Dewatering pipelines	• Provided with secondary containment adequate to contain any spill for a period equal to the time between routine inspections. • Daily documented visual inspections of the pipeline must be carried out when the pipeline is in use.	Schedule 1: Figures 1 and 2
5.	Mobile crushing and screening plant (Category 12)	• Water trucks must be available and used around the mobile plant and on material stockpiles as required to minimise fugitive dust emissions. • Feed stockpiles to be sprayed with water prior to screening to minimise fugitive dust emissions. • Clean stormwater to be diverted away from mobile screening plant and material stockpiles.	Within the premises boundary as outlined in Schedule 1: Figure 1.

Note [1]: Requirements for landfilling tyres are set out in Part 6 of the *Environmental Protection Regulations 1987*

Monitoring during time limited operations

7. The works approval holder must monitor the emissions during time limited operations in accordance with Table 3.

Table 3: Monitoring during time limited operations

Discharge point	Monitoring location	Parameter	Unit	Frequency	Method
Turkey's Nest	Schedule 1: Maps (labelled Discharge Point) Flow meter on dewatering discharge pipeline	Volumetric flow	m^3	Continuous	Calibrated flow meter
Evaporation Pond	Schedule 1: Maps Freeboard marker	Freeboard	m	Daily	Visual inspection

8. The works approval holder must ensure that all monitoring equipment used to comply with condition 7 is operated and calibrated in accordance with the manufacturer's specifications.

9. The works approval holder must record the results of all monitoring activities required by condition 7.

10. The works approval holder must monitor groundwater standing water levels in piezometers, located as specified in Schedule 1 Figure 2 and Figure 3, monthly during time limited operations.

11. The works approval holder must undertake visual monitoring of vegetation health, at locations specified in Schedule 1 Figure 2, monthly during time limited operations.

12. The works approval holder must record the results of all monitoring activities required by conditions 7, 10 and 11.

13. The works approval holder must undertake monitoring of the water balance for the evaporation pond each monthly period, and (as a minimum) record the following information:

(a) site rainfall;
(b) evaporation rate;
(c) water abstraction from the turkeys nest and evaporation pond;
(d) volume of mine dewater abstraction;
(e) volume mine dewater inflow to the evaporation pond; and
(f) estimate of seepage losses.

Compliance reporting

14. 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.

15. The works approval holder must ensure the report required by condition 14 includes the following:

(a) a summary of the time limited operations, including timeframes;
(b) a summary of all monitoring results obtained during time limited operations under conditions 7, 10 and 11;
(c) a summary of the environmental performance of all infrastructure as constructed or installed;

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

16. 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.

17. 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 condition 6;

(c) monitoring programmes undertaken in accordance with conditions 7, 10 and 11; and

(d) complaints received under condition 16.

18. The books specified under condition 17 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 4 have the meanings defined.

Table 4: Definitions

Term	Definition
AS1726	means the Australian Standard for *Geotechnical site investigations* (Designation: AS1726), as amended from time to time.
AS/NZS 5667.11	means the Australian Standard/ New Zealand Standard for *Water quality – Part 11: Sampling Guidance on sampling of groundwaters (Designation: AS/NZS 5667.11),* as amended from time to time
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)*, as amended from time to time
Assessment of Site Contamination NEPM	means the *National Environment Protection (Assessment of Site Contamination) Measure 1999*, as amended from time to time
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
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).
HDPE	means high density polyethylene
Inert Waste (Type 1 and Type 2)	has the meaning defined in the Landfill Definitions
Landfill Definitions	means the document titled “Landfill Waste Classification and Waste Definitions 1996” published by the Chief Executive Officer of the Department of Environment as amended from time to time.

Term	Definition
monthly period	means a one-month period commencing from day 7 of a month until day 6 of the immediately following month. *e.g. "means a one-month period commencing from the seventh day of a month until the sixth day of the immediately following month."*
premises	the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map (Figure 1) in Schedule 1 to this works approval.
prescribed premises	has the same meaning given to that term under the EP Act.
Putrescible Waste	has the meaning defined in the Landfill Definitions
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.
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).

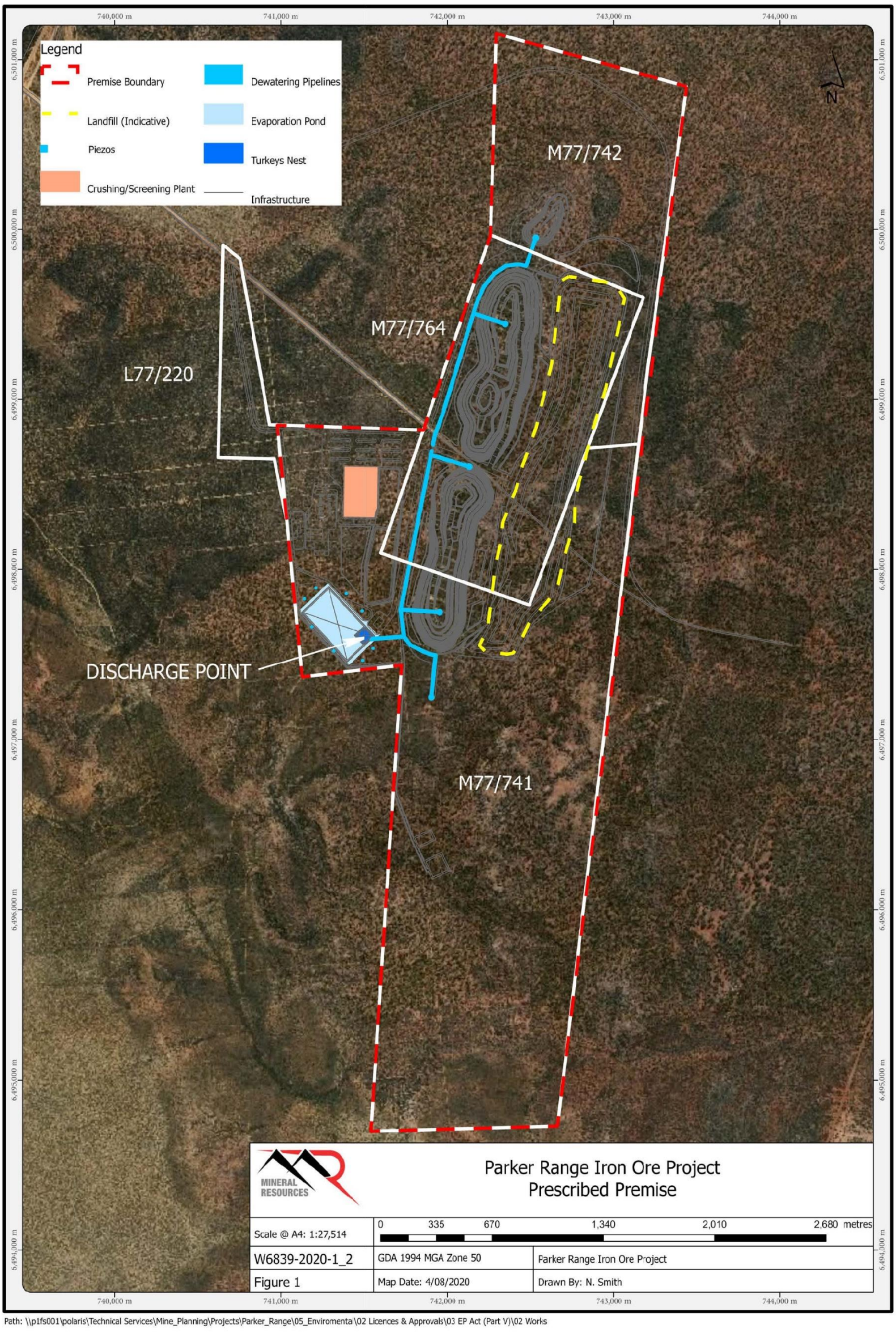

Figure 1: Map of the boundary of the prescribed premises

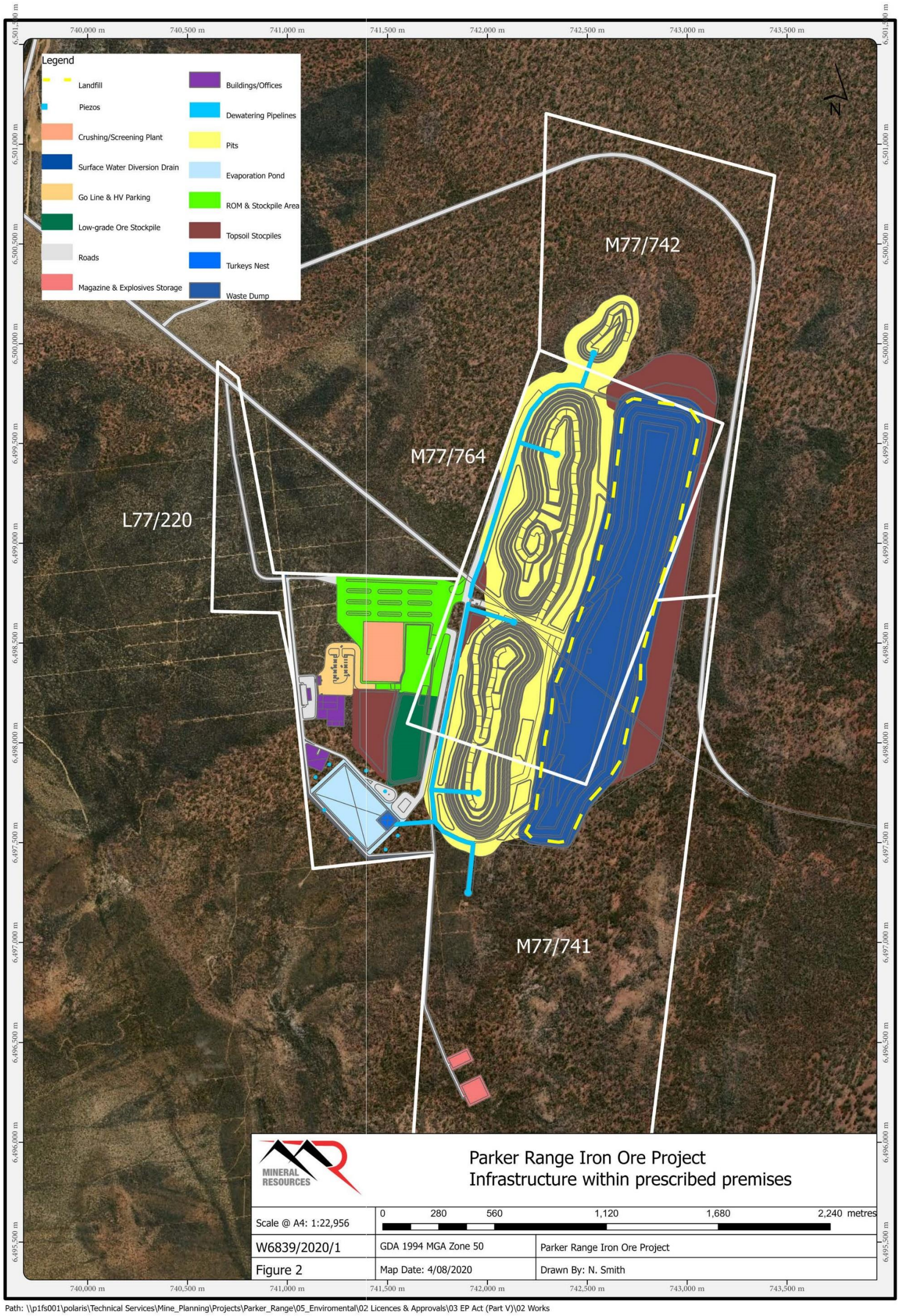

Figure 2: Location of proposed infrastructure on the prescribed premises. Indicative vegetation monitoring sites near piezometers are shown with a

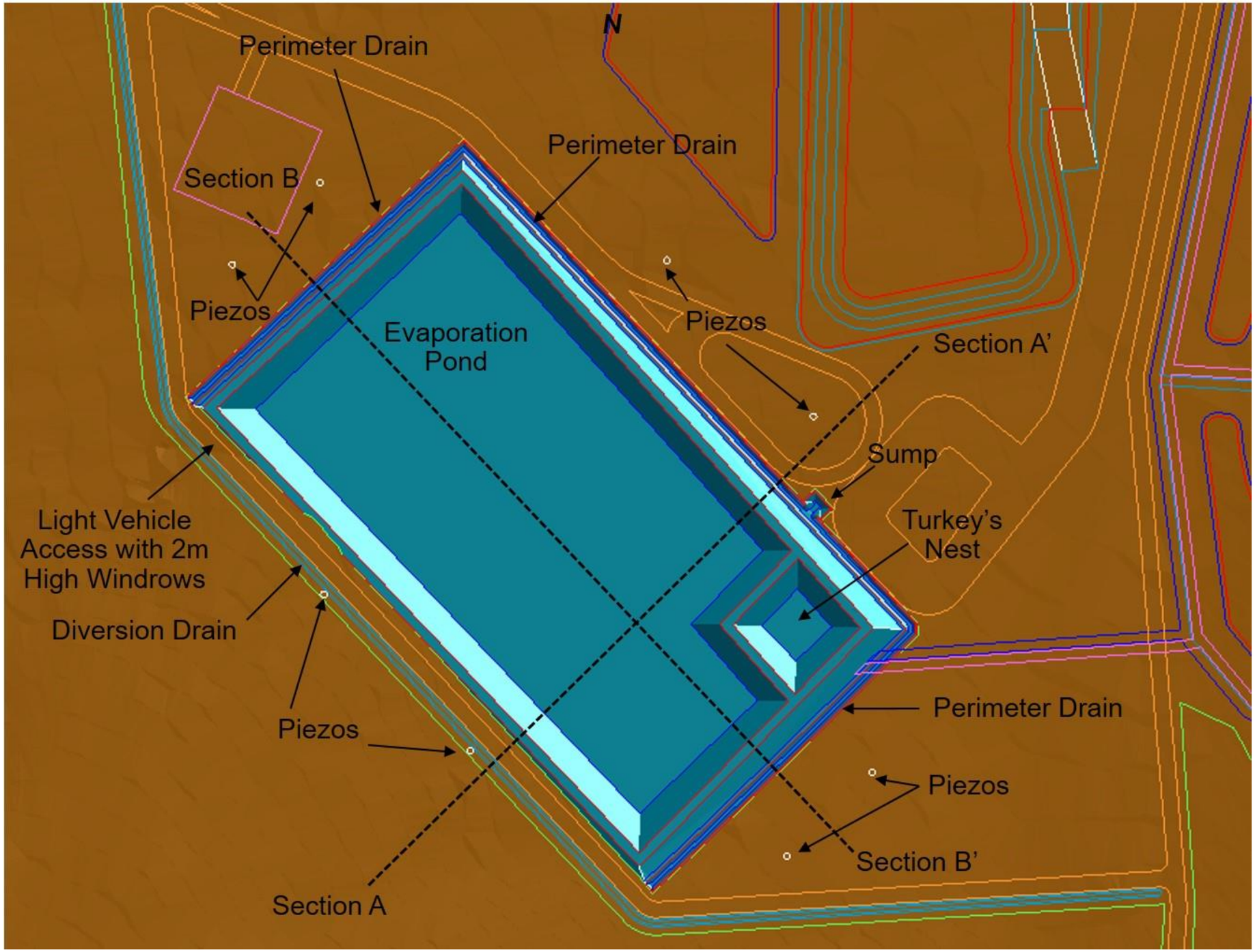

Figure 3: Location of proposed monitoring bores/piezometers.

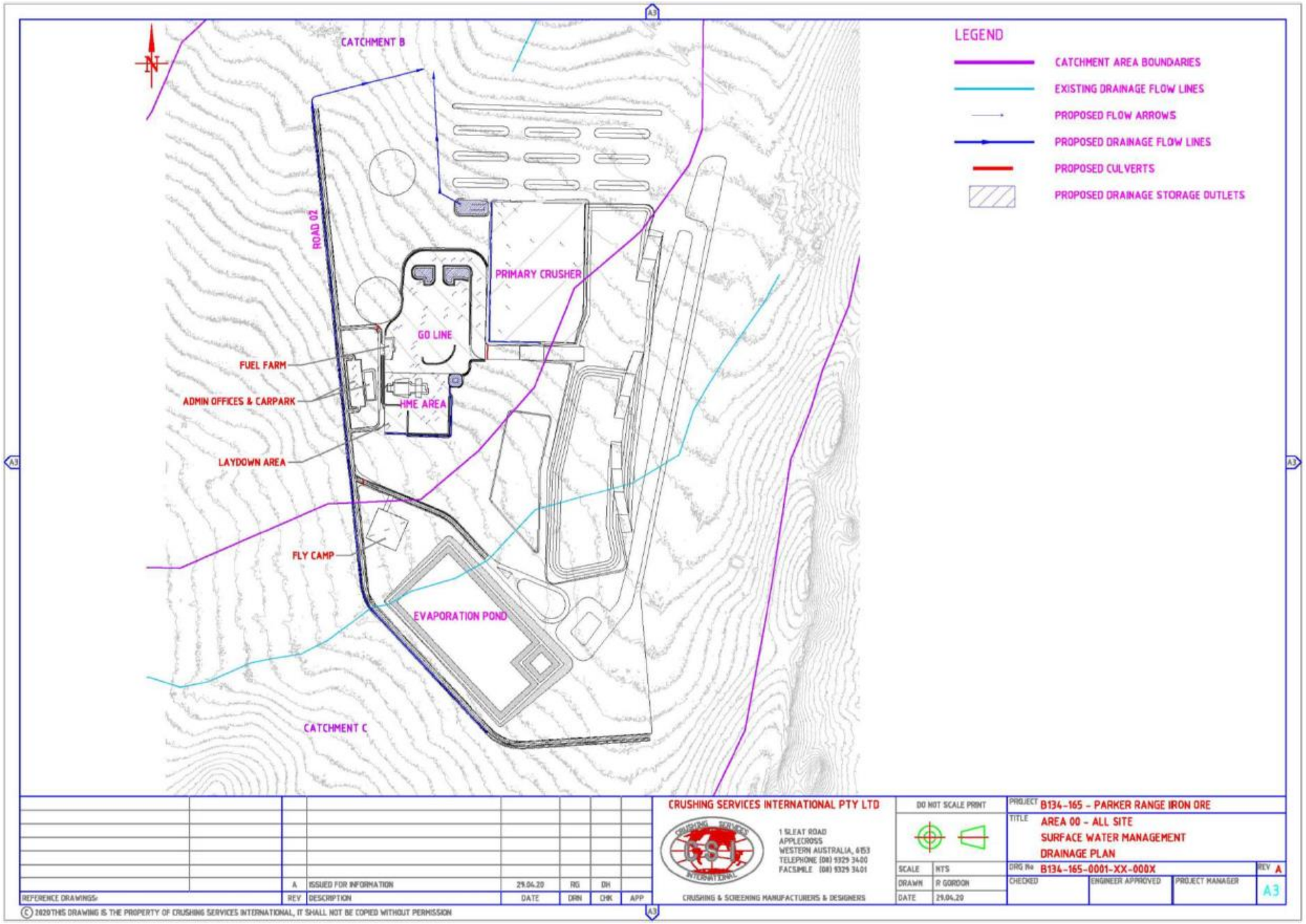

Figure 4: Surface water drainage infrastructure