Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6558/2021/1
Works approval holder	Doral Mineral Sands Pty Ltd
ACN	096 342 451
Registered business address	1 Alumina Road, EAST ROCKINGHAM WA 6168
DWER file number	DER2021/000318
Duration	07/10/2021 to 06/10/2026
Date of amendment	08/12/2022
Premises details	Yalyalup Mineral Sands Mine YALYALUP WA Legal description - Tenement M70/1400 excluding lots 758 and 843 Yalyalup Road, as shown in Figure 1

Prescribed premises category description (Schedule 1, Environmental Protection Regulations 1987)	Assessed production capacity
Category 8: Mineral sands mining or processing: premises on which mineral sands ore is mined, screened, separated or otherwise processed.	3,500,000 tonnes per year
Category 6: Mine dewatering: premises on which water is extracted and discharged into the environment to allow mining of ore.	750,000 tonnes per year

This works approval is granted to the works approval holder, subject to the attached conditions, on 8 December 2022, by:

Tanya Fyfe

Digitally signed by Tanya Fyfe
Date: 2022.12.08 14:11:59 +08'00'

Tanya Fyfe

A/SENIOR ENVIRONMENTAL OFFICER, INDUSTRY REGULATION
REGULATORY SERVICES

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

Works approval history

Date	Reference	Summary of Changes
7/10/2021	W6558/2021/1	Works Approval issued.
8/12/2022	W6558/2021/1	Works approval amended to extend time limited operations. Minor changes to table 11 to align with process improvements identified by applicant during time limited operations.

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;

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

(c) at the corresponding infrastructure location,

as set out in Table 1.

Table 1: Design and construction / installation requirements

	Infrastructure	Design and construction / installation requirements	Infrastructure location
1.	Stripping and stockpiling of subsoil and overburden for initial mining area[1]	Area cleared at any given time to be minimised	Within the areas listed as 'orebody' or 'orebody deep strand' or 'other supporting infrastructure' in Schedule 1
2.	Process water dam and drop-out dam (includes pre-mining to create voids)	No processing is authorised prior to submission of Construction Compliance Report	Shown as 'process water dam' and 'drop out dam' in Schedule 1
3.	Stormwater diversion	Surface water entering site from upstream of the premises boundary must be diverted so it does not mix with operational site water.	Upstream of initial operating area
4.	Drainage and sumps	As required to manage stormwater within the operational area	Within the premises, as required
5.	Feed prep plant (contains apron feeder, scalping screen, trommel, double deck screen, scrubber)	• Feed Prep floor 2m below the natural ground surface • Surrounded by a 6m L-shaped noise bund and a 6m ore stockpile • Insulate or partly enclose the apron feeder, scalping and double-deck screens	Shown as 'Feed prep' in Schedule 1
6.	Tails booster pump	N/A	Within the areas listed as 'orebody' or 'orebody deep strand' or 'other supporting infrastructure' in Schedule 1
7.	Wet Concentrator Plant	Install noise insulating drapes on the ground level	Shown as 'Concentrator' in Schedule 1.

	Infrastructure	Design and construction / installation requirements	Infrastructure location
8.	Heavy mineral concentrate pad	• Constructed of compacted crushed limestone of at least 300mm thickness • Graded to ensure good drainage • All sides bunded with alkaline material to a minimum height of 150mm above the surface of the pad • Have a leachate collection system to manage run-off	Shown as 'HMC pad' in Schedule 1.
9.	Solar evaporation ponds	In accordance with a Mining Proposal approved by the Department of Mines, Industry Regulation and Safety	Shown as 'SEP/Tails storage dam' in Schedule 1
10.	Initial ore and tailings pipelines	(a) equipped with automatic cut-outs in the event of a pipe failure; or (b) provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections; or (c) equipped with telemetry systems and pressure sensors along pipelines to allow the detection of leaks and failures.	Within the area listed as 'orebody' or 'orebody deep strand' in Schedule 1
11.	Mobile mining unit (In pit Mining Unit, screen), pit generator, feed pump	• Screener modified to electric power, and a silencer fitted to the exhaust outlet; • Silencer on pit generator	Within the area listed as 'orebody' or 'orebody deep strand' in Schedule 1

Note 1: stripping and stockpiling of topsoil falls outside the scope of category 8 of the Environmental Protection Regulations 1987, so is not considered in this assessment.

Compliance reporting

2. The works approval holder must within 60 calendar days of all items of infrastructure required by condition 1 being constructed and/or installed:

(a) undertake an audit of their compliance with the requirements of condition 1; and

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

3. The Environmental Compliance Report required by condition 2, must include as a minimum the following:

(a) certification by a Suitably Qualified Engineer that the items of infrastructure or component(s) thereof, as specified in condition 1, have been constructed in accordance with the relevant requirements specified in condition 1;

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

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

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 6:

(a) where 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 6 (as applicable):

(a) for a period not exceeding 270 calendar days from the day the works approval holder meets the requirements of condition 4 for that item of infrastructure; or

(b) until such time as a licence for that item of infrastructure is granted in accordance with Part V of the *Environmental Protection Act 1986*, if one is granted before the end of the period specified in condition 5(a)

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.	Tailings and return water pipelines	• equipped with automatic cut-outs in the event of a pipe failure; OR • provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections; OR • equipped with telemetry systems and pressure sensors along pipelines to allow the detection of leaks and failures.	Throughout the premises. Pipelines may be realigned and extended as required as mining progresses
2.	Solar evaporation ponds	• Decant weir boxes and overflow drains to the process water dam; • Depth markers are maintained; and • Water levels to be maintained at least 500 mm below the top of the wall.	Shown as 'SEP/Tails storage dam' in Schedule 1
3.	Process water dam, drop out dam	Flow metering device on overflow point.	Shown as 'process water dam' and 'drop out dam' in Schedule 1.

7. During time limited operations, the works approval holder must ensure that the emission(s) specified in Table 3, are discharged only from the corresponding discharge point(s) and only at the corresponding discharge point location(s).

Table 3: Authorised discharge points

	Emission	Discharge point	Discharge point location
1.	Clay fines	Solar evaporation ponds	Shown as 'SEP/Tails storage dam' in Schedule 1
2.	Process water[1] and harvested stormwater	Process water dam, drop out dam	Shown as 'process water dam' and 'drop out dam' in Schedule 1
3.	Sand and clay tailings	Mine voids	Within the area listed as 'orebody' or 'orebody deep strand' in Schedule 1
4.	Dried clay slimes from solar evaporation ponds		
5.	Process water[1] and harvested stormwater	Licence discharge point	Shown as 'Licence Discharge Point' in Schedule 1
6.		Emergency Discharge point 1, 2 or 3[2]	Shown as 'Emergency Discharge Point 1' to 'Emergency Discharge Point 3' in Schedule 1

Note 1: Dewatering water, tails return water, recycled process water.

Note 2: Emergency discharge points may only be used to prevent overtopping when all water storages are full and discharge through the licence discharge point is insufficient. Only one emergency discharge point may be in use at any stage of mining.

8. During time limited operations, the works approval holder must ensure that the emissions from the discharge point listed in Table 4 do not exceed the corresponding limit(s) when monitored in accordance with condition 14.

Table 4: Emission and discharge limits during time limited operations

	Discharge point	Parameter	Limit
1.	Licence discharge point; Emergency Discharge points 1, 2 or 3	pH	5.5 (lower)
			8.5 (upper)
2.		Electrical conductivity @ 25°C	2,500 µS/cm
3.		Total dissolved solids	1,500 mg/L (upper)
4.		Total suspended solids	80 mg/L (upper)
5.		Total titratable acidity	65 mg/L (upper)
6.		Total alkalinity	10 mg/L (lower)

9. During time limited operations, the works approval holder shall:

(a) undertake inspections as detailed in Table 5.
(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 5: Inspection of infrastructure

	Scope of inspection	Type of inspection	Frequency of inspection
1.	Sand and clay tailings pipelines	Visual integrity and leak assessment	Each daily period whilst operating. Each monthly period if not operating.
2.	Return water pipelines		
3.	Solar evaporation ponds, process water dam, drop out dam		

General conditions – applicable to all phases of this works approval

Monitoring - general

10. The works approval holder shall ensure that:

a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;

b) all surface water sampling is conducted in accordance with AS/NZS 5667.6;

c) all groundwater sampling is conducted in accordance with AS/NZS 5667.11;

d) all noise measurements are carried out in accordance with Part 3 of the Environmental Protection (Noise) Regulations 1997 (as applicable); and

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

11. The licence holder must ensure that:

(a) monitoring is undertaken in each weekly period such that there are at least 4 days in between the days on which samples are taken in successive weeks;

(b) monitoring is undertaken in each monthly period such that there are at least 15 days in between the days on which samples are taken in successive months;

(c) monitoring is undertaken in each quarterly period such that there are at least 45 days in between the days on which samples are taken in successive quarters;

(d) monitoring is undertaken in each six-monthly period such that there are at least 5 months in between the days on which samples are taken in successive periods of six months; and

12. The works approval holder shall ensure that all monitoring equipment used on the Premises to comply with the conditions of this works approval is calibrated in accordance with the manufacturer's specifications.

13. The works approval holder shall, 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 – point source discharge of water

14. The works approval holder must monitor emissions in accordance with Table 6.

Table 6: Emissions and discharge monitoring

Discharge point	Parameter	Unit	Frequency
Licence Discharge Point Emergency Discharge Point 1 Emergency Discharge Point 2 Emergency Discharge Point 3	Volumetric flow rate	m^3/d	Continuous when discharging
	pH[1]	No unit	On the first day of discharge then three times per week during discharge
	Electrical conductivity (EC) [1]	µS/cm	
	total titratable acidity (TTA), total alkalinity, total suspended solids (TSS), Total Dissolved Solids (TDS) [1]	mg/L	
	aluminium, arsenic, chromium, copper, nickel, cobalt, selenium zinc, uranium[2]	mg/L	Each weekly period, if TTA>Total alkalinity for any sample in that week
	pH	No unit	On the first day of discharge then each monthly period during discharge
	EC	µS/cm	
	TTA, total alkalinity, TSS, TDS sodium, chloride, sulphate, nitrate, aluminium, arsenic, chromium, copper, nickel, cobalt, selenium zinc, uranium[2] total recoverable hydrocarbons	mg/L	

Note 1: In-field non-NATA accredited analysis permitted.
Note 2: Analysis of total metals required.

15. The works approval holder must record the results of all monitoring activity required by condition 14.

Monitoring – ambient meteorological conditions

16. The works approval holder must monitor the ambient meteorological conditions at the premises in accordance with the requirements specified in Table 7 and record the results of all such monitoring.

Table 7: Monitoring of ambient meteorological conditions

Parameter	Unit	Monitoring location(s)	Height	Frequency	Averaging period	Method
Wind speed	m/s	AQ1, AQ2, AQ3	4.5 m above ground level	Continuous	15 minute average	AS 3580.14
Wind direction	degrees					
Wind direction (standard deviation)						

Monitoring – ambient dust and noise

17. The works approval holder must monitor for ambient dust for the identified parameters in accordance with Table 8.

Table 8: Monitoring of ambient dust concentrations

Purpose	Parameter	Monitoring location[1]	Unit	Frequency [2,3]	Averaging period	Target (upper)
Receptors	PM_{10}	AQ2-AQ3	$\mu g/m^3$	3 continuous days per month[4,5]	15min	50 $\mu g/m^3$ (24-hour average)
	Dust deposition	AQ1, AQ2, AQ3	$g/m^2/30days$	Continuous	Month	$4g/m^2/month$
Informing dust management	TSP	AQ1, AQ2, AQ3	$\mu g/m^3$	3 continuous days per month[4,5]	15min	-
Indicator of dust composition	High Volume Air Sampler filter analysed for standard laboratory metals suite	AQ2	mg/m^3	Once, within the first 2 months of time limited operations	Minimum 24 Hours	-

Note 1: Monitoring locations as shown in Schedule 1.
Note 2: During the period 1 October to 31 May of the following year
Note 3: Availability ≥90% of the measurement intervals on a monthly basis.
Note 4: During period outside of required 3d/month at each site, continuous monitoring to continue at monitoring point AQ2. Minimum of 22 days/month required at AQ2.
Note 5: Additional monitoring, up to and including continuous is required to commence within 7 days at AQ1, AQ2, AQ3 or to the north of the premises, if requested by the CEO in response to a dust complaint from a member of the public. To continue until issue is resolved and approval given by the CEO.

18. The works approval holder must monitor for ambient noise in accordance with Table 9.

Table 9: Monitoring of ambient noise concentrations

Parameter	Monitoring location	Unit	Frequency	Averaging period
$L_{AS\ 90,\ 30min}$	AN1, AN2, AN3 - as shown in Schedule 1	dB	3 days per month[2,3]	Continuous[1] logging with 30 minute averages
$L_{AS\ 10,\ 30min}$				
$L_{Aeq(20Hz-500Hz),\ 30min}$				

Note 1: Availability ≥90% of the measurement intervals on a monthly basis.
Note 2: During period outside of 3d/month continuous monitoring to continue at monitoring point where mining activities most closely approach residential receptors.
Note 3: Continuous monitoring is required to commence within 7 days, if requested by the CEO in response to a noise complaint from a member of the public. To continue until issue is resolved and approval given by the CEO.

19. The works approval holder must record the results of all monitoring activity required by conditions 17 and 18.

20. Where any target in Table 8 is exceeded, the works approval holder shall investigate and record the cause of the exceedance.

21. Where the monitored ambient noise levels required by Table 9 indicate an exceedance of an assigned level specified in Table 1, Regulation 8 of the

Environmental Protection (Noise) Regulations 1997, the Licence Holder shall undertake an investigation of the exceedance, including but not limited to:

(a) the root cause analysis for the exceedance; and

(b) any common or contributory factors for the exceedance.

Monitoring – ambient surface water quality

22. The works approval holder must monitor the surface water for concentrations of the parameter listed in Table 10:

(a) at the corresponding monitoring location;

(b) in the corresponding unit;

(c) at no less that the corresponding frequency; and

(d) for the corresponding averaging period

as set out in Table 10.

Table 10: Monitoring of ambient surface water

Parameter	Monitoring location	Unit	Frequency	Averaging period
pH[1]	YALSW03, YALSW05, YALSW11, YALSW12, YALSW13, YALSW15	No unit	Each monthly period when flowing	Spot sample
Electrical conductivity @ 25°C		µS/cm		
Total dissolved solids (TDS)		mg/L		
Total suspended solids (TSS)				
Sulphate				

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

23. The works approval holder must record the results of all monitoring activity required by condition 22

Monitoring – ambient groundwater

24. The works approval holder must conduct a groundwater monitoring programme in accordance with the requirements specified in Schedule 2 and record the results of all monitoring activity conducted under that programme.

25. The works approval holder must adhere to the field quality assurance and quality control procedures specified in Schedule 2 for the monitoring required by condition 24.

Management conditions

26. The works approval holder shall ensure noise emissions are managed in accordance with the requirements specified in Table 11.

Table 11: Management of noise and vibration emissions

	Control
1.	• Use the quietest equipment reasonably available; • Install silencers where practicable to reduce exhaust noise of machines; • Maintain sound suppression matting over scalping screen; • No mining activities may occur outside the hours of 0700 – 1900 hours Monday to Saturday; and 0900-1900 hours on Sunday and public holidays.

	Control
	• Water cart and grader used only during the hours of 0700 – 1900 hours Monday to Saturday; and 0900-1900 hours on Sunday and public holidays. • Restrict the operation of machinery, particularly the operation of bulldozers, relative to worst case weather conditions on Sundays and Public holidays to minimise potential noise impacts; • No dozer activity before 9am on weekends; • When wind is from a northerly direction, dozer operation is to be minimised. If a noise complaint is received from receptors to the south during this time, dozer operation is to cease until the wind is no longer from a northerly direction. • Night operations restricted to single loader; • Restrict the operation of ancillary machinery (water cart and grader) to operate during day-time only; • Monitor earthworks machines for evaluation of suitability with regards to the noise model; • Establish preventative maintenance schedules for all vehicles, fixed plant and mobile equipment to maintain performance and therefore low noise emission; • Utilise broad band reversing (squawkers) as opposed to reversing beepers; • Educate employees and contractors on the importance and requirements for noise management prior to commencing work on the mine; • Insulate or partly enclose the apron feeder, scalping and double-deck screens; • No mining within 300m of a residence while occupied by a member of the public, unless an amenity agreement is in place; • Equipment shall be relocated if noise monitoring indicates activities on the Premises are significantly contributing to noise levels that are likely to exceed the Noise Regulations at nearby receptor(s); and • Operations to be suspended if equipment relocation or adjustment fails to reduce the likelihood of noise non-compliance at nearby receptor(s) • Minimise truck and excavator fleets on Sundays. • In hopper vibrators to be operated manually only when needed, and operate for a maximum of 2 minutes at a time.

27. The works approval holder shall ensure fugitive dust emissions are managed in accordance with the requirements specified in Table 12.

Table 12: Management of fugitive dust emissions

	Control
1.	• Minimising disturbed area at any given time • Stripping operations to be suspended under particularly high wind conditions, if management controls are inadequate • Use of water carts on high traffic and haulage areas • Spreading stockpiles, noise control bunds and pond embankments with fine clay solution or PVA sealant • Minimising the number and size of stockpiles, by the direct use of overburden as backfill and the direct replacement of topsoil wherever possible; • Encouraging vegetative cover on stockpiles, especially the topsoil stockpiles. Many of these vegetative species generate from stored seed. • Spraying HMC stockpiles at the mine with water if they dry to the extent dust generation occurs. • No mining within 300m of a residence while occupied by a member of the public, unless an amenity agreement is in place.

Compliance reporting

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

29. The works approval holder must ensure the report required by condition 28 includes the following:

(a) a summary of the time limited operations, including timeframes and volume of overburden removed, ore processed, Picton tails returned to the processing plant, HMC produced, tails returned to mine voids;

(b) A summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during time limited operations and any action taken;

(c) a summary of discharge water quality results obtained during time limited operations under condition 14;

(d) a summary of ambient dust results obtained during construction and time limited operations under condition 17, including assessment under condition 20

(e) a summary of ambient noise results obtained during construction and time limited operations under condition 18 and the assessment under condition 21;

(f) a summary of ambient surface water quality results obtained during time limited operations under condition 22;

(g) a summary of ambient groundwater results obtained during time limited operations under condition 24;

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

(i) 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)

30. 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.

31. 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 condition 17 and 18; and

(d) complaints received under condition 30.

32. The books specified under condition 31 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 13 have the meanings defined.

Table 13: Definitions

Term	Definition
AS 3580.14	AS/NZS 3580.14:2014 *Methods for sampling and analysis of ambient air – meteorological monitoring for ambient air quality monitoring applications*, 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
condition	A condition of this works approval.
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V Division 3 of the EP Act.
discharge	has the same meaning given to that term under the EP Act.
emission	has the same meaning given to that term under the EP Act.
Environmental Compliance Report	means a report to satisfy the CEO that the conditioned infrastructure and/or equipment has been constructed and/or installed in accordance with the works approval.
EP Act	means the *Environmental Protection Act 1986* (WA).
EP Regulations	means the Environmental Protection Regulations 1987 (WA).
$L_{AS\ 90,30min}$ and $L_{AS\ 10,30min}$	means the A-weighted level exceeded for more than 90% and 10%, respectively, of the time over 30 minutes with the sound level meter set to 'Slow' time weighting.
$L_{Aeq(20Hz-500Hz),30min}$	means the A-weighted equivalent noise level between 20 Hz and 500 Hz (one-third octave bands inclusive) averaged over 30 minutes.

Term	Definition
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.
mbgl	Meters below ground level
monthly period	means a one-month period commencing from the first day of a calendar month until the last day of that calendar month.
PM_{10}	means particles with an aerodynamic diameter of less or equal to 10 µm.
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.
Six-monthly	means a six-month period • from the first day of January until the last day of June; or • from the first day of July until the last day of December of that same year.
spot sample	means a discrete sample representative at the time and place at which the sample is taken.
Suitably Qualified Engineer	suitably qualified engineer who holds as a minimum a Bachelor of Engineering recognised by the Australian Institute of Engineers and has a minimum professional experience of three years.
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.
TSP	means total suspended particles each having an equivalent aerodynamic diameter of less than 50 micrometres.
µS/cm	means microSiemens per centimetre.
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 maps

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

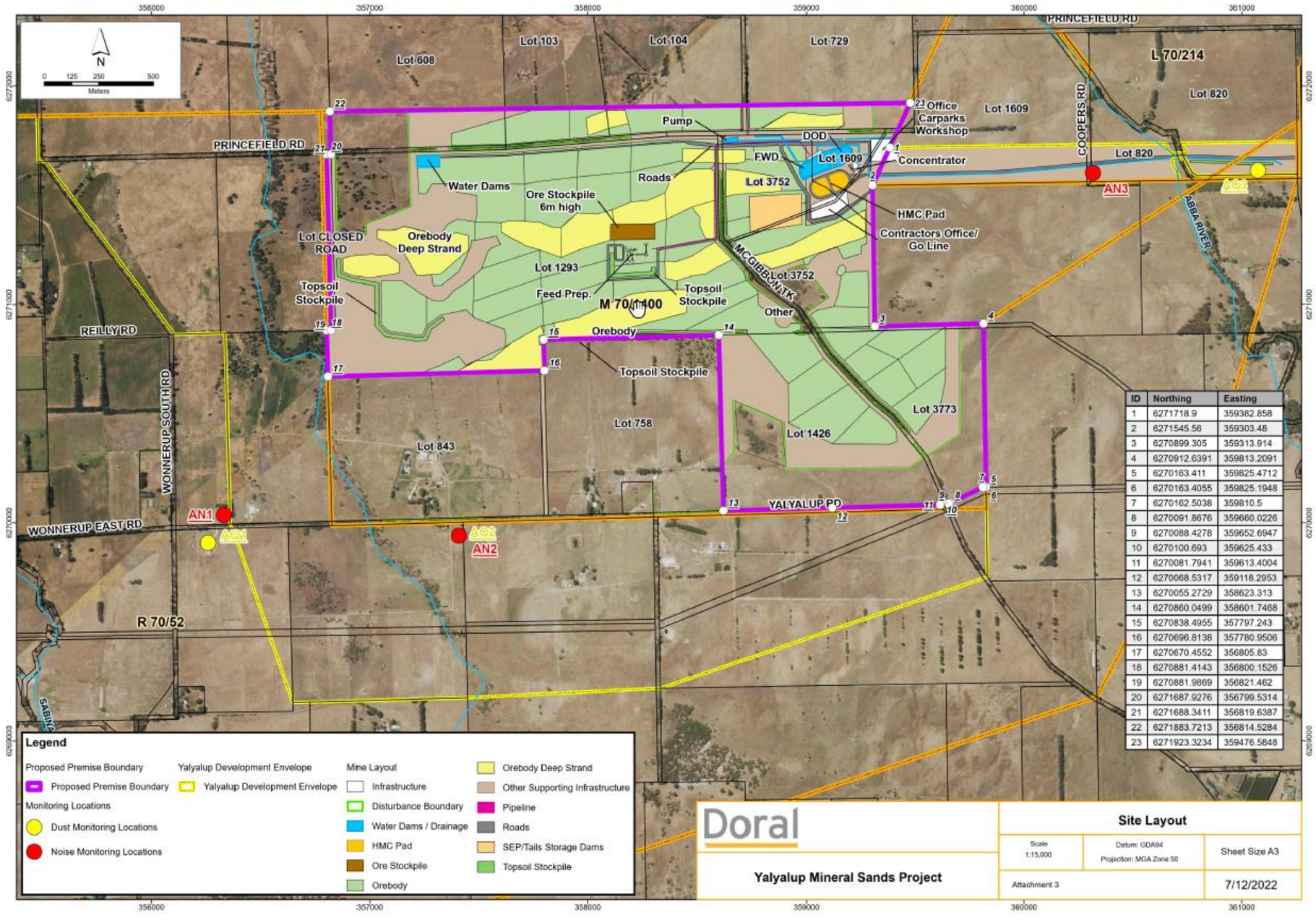


Figure 1: Map of the boundary of the prescribed premises, showing noise and dust monitoring points

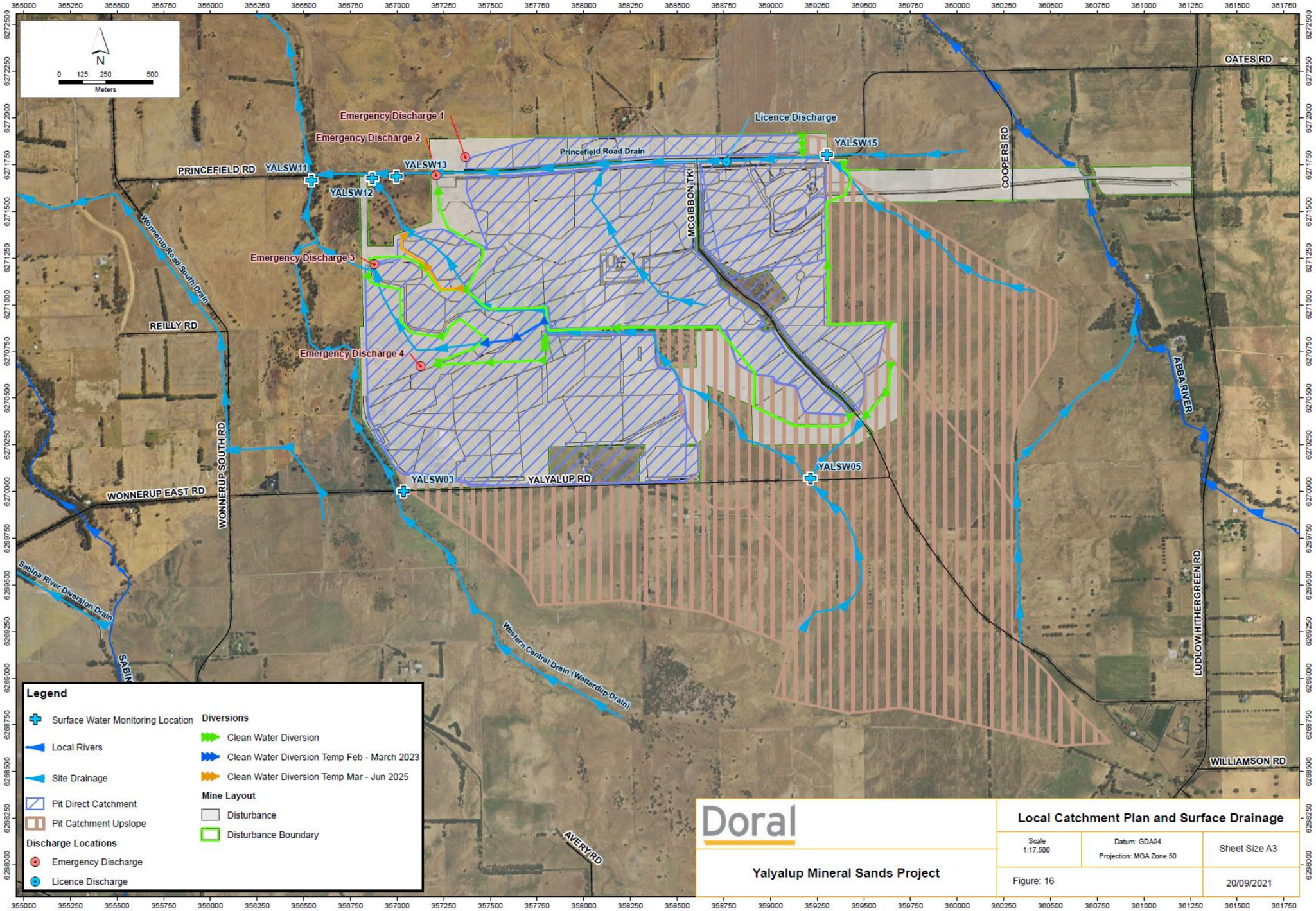
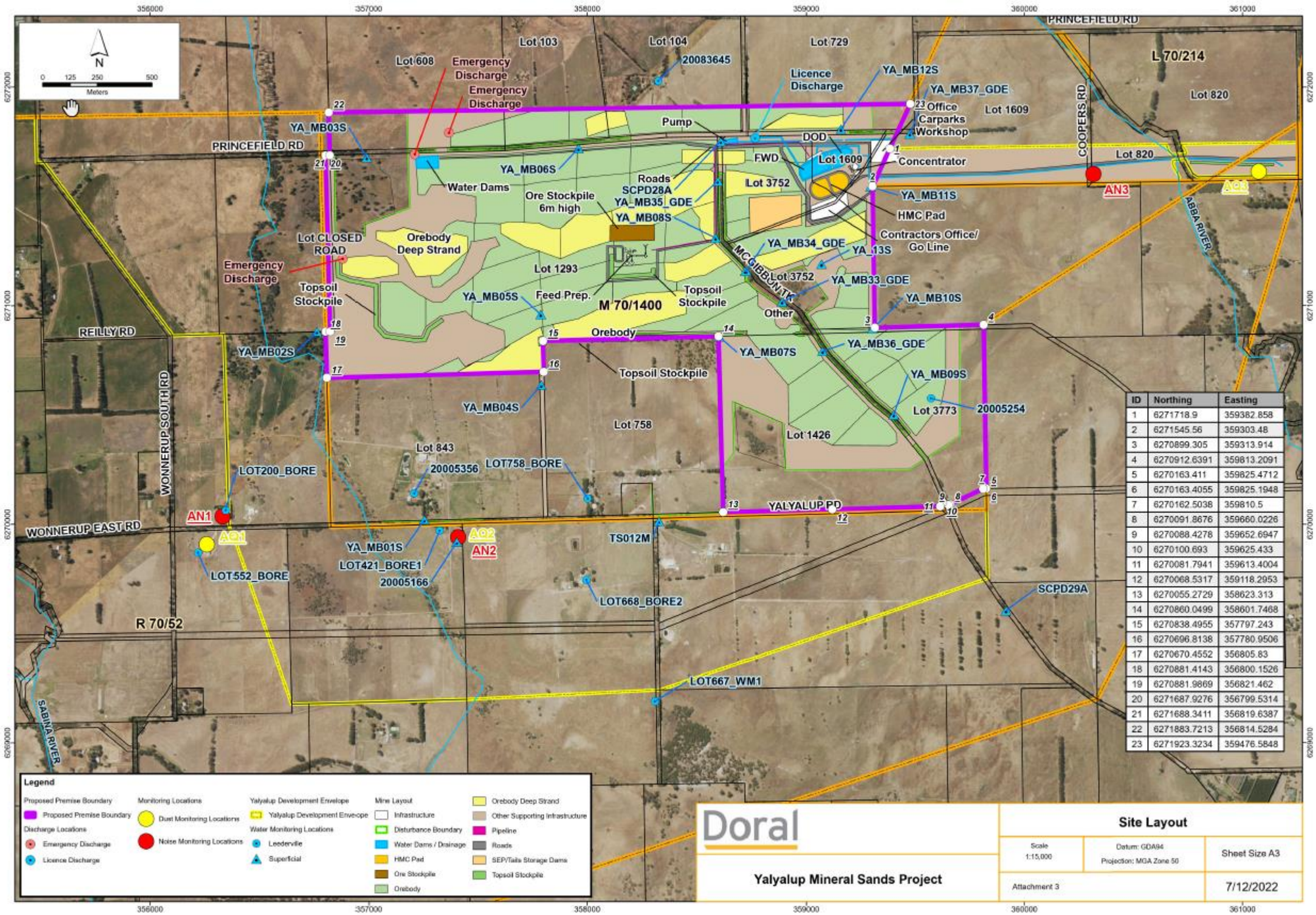


Figure 2: Premises map showing discharge and monitoring locations.



ID	Northing	Easting
1	6271718.9	359382.858
2	6271545.56	359303.48
3	6270899.305	359313.914
4	6270912.6391	359813.2091
5	6270163.411	359825.4712
6	6270163.4055	359825.1948
7	6270162.5038	359810.5
8	6270091.8676	359660.0226
9	6270088.4278	359652.6947
10	6270100.693	359625.433
11	6270081.7941	359613.4004
12	6270068.5317	359118.2953
13	6270055.2729	358623.313
14	6270860.0499	358601.7468
15	6270838.4955	357797.243
16	6270696.8138	357780.9506
17	6270670.4552	356805.83
18	6270881.4143	356800.1526
19	6270881.9869	356821.462
20	6271687.9276	356799.5314
21	6271688.3411	356819.6387
22	6271883.7213	356814.5284
23	6271923.3234	359476.5848

Figure 3: Premises map showing discharge and monitoring locations.

Schedule 2: Monitoring

Groundwater monitoring

1. The licence holder must monitor groundwater for concentrations of the identified parameter(s) in accordance with Table 14.

Table 14: Groundwater monitoring of ambient concentrations

Monitoring well location	Parameter	Unit	Frequency	Method
YA_MB01S to YA_MB12S, TSO12M, SCPD28A, SCPD29A	Standing water level[1]	m AHD, and mbgl	Each monthly period	Spot sample
	pH[1]	-		Spot sample, in accordance with AS/NZS 5667.11.
	Electrical conductivity @ 25°C[1]	µS/cm		
	Redox potential (Eh)	mV		
	Major ions: bicarbonate, calcium, chloride, magnesium, potassium, sodium, sulfate, total dissolved solids	mg/L		
	Total titratable acidity (TTA)			
	Total alkalinity (TAlk)			
SCPD28A, YA_MB07S, YA_MB10S	aluminium, arsenic, cadmium, chromium (both as Cr VI and total Cr), cobalt, copper, iron, mercury, nickel, selenium, thallium, uranium, zinc[2]	mg/L	Each six-monthly period	
	Radium-226, radium-228	Bq/L		

Note 1: In-field non-NATA accredited analysis permitted.
Note 2: Analysis of total metals required.

Quality assurance and quality control requirements

2. The licence holder must adhere to the following field quality assurance and quality control procedures, as specified in Schedule B2 of the Assessment of Site Contamination NEPM, and must include as a minimum:

(a) decontamination procedures for the cleaning of tools and sampling equipment before sampling and between samples;

(b) field instrument calibration for instruments used on site;

(c) blind replicate samples and rinsate blanks must be collected in the field and sent to the primary laboratory to determine the precision of the field sampling and laboratory analytical program;

(d) completed field monitoring sheets / sampling logs for each sample collected, showing:

(i) time of collection;

(ii) location of collection;

(iii) initials of sampler;

(iv) sampling method;

(v) field analysis results;

(vi) duplicate type / location (if relevant); and

(vii) site observations and weather conditions, and

(e) chain-of-custody documentation must be completed which details the following information:

(i) site identification;

(ii) the sampler;

(iii) nature of the sample;

(iv) collection time and date;

(v) analyses to be performed;

(vi) sample preservation method;

(vii) departure time from site;

(viii) dispatch courier(s); and

(ix) arrival time at the laboratory.