



Licence number	L7712/2001/8
Licence holder	Doral Mineral Sands Pty Ltd
ACN	096 342 451
Registered business address	1 Alumina Road EAST ROCKINGHAM WA 6168
DWER file number	DER2015/000766-1
Duration	05/09/2014 to 04/09/2034
Date of amendment	30/04/2021
Premises details	<p>Picton Mineral Separation Plant Lot 6, 500 and 501 Harris Road PICTON WA 6229</p> <p>Legal description - Lot 6 on Diagram 61381, Lot 500 on Diagram 75572 and Lot 501 on Diagram 75572</p> <p>Certificate of Title Volume 1837 Folio 366, 368 and 369</p> <p>As defined by the Premises maps and coordinates in Schedule 1 and 2</p>

Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations 1987</i>)	Assessed production capacity
Category 8: mineral sands mining or processing	350,000 tonnes per annual period

This licence is granted to the licence holder, subject to the attached conditions, on 30 April 2021, by:

**A/MANAGER WASTE INDUSTRIES
REGULATORY SERVICES**

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

Licence history

Date	Reference number	Summary of changes
05/09/2014	L7712/2001/8	Renewed licence granted
29/04/2016	L7712/2001/8	Notice of Amendment of Licence Expiry Dates
02/02/2018	L7712/2001/8	Amendment Notice 1 to include plant upgrade works completed under W5412/2013/1
30/04/2021	L7712/2001/8	Amendment to remove an ambient dust monitoring location. Amalgamation of amendment notices and update to current licence format.

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:

Premises operations

Infrastructure and equipment

- The licence holder must ensure that the site infrastructure and equipment listed in Table 1 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 1.

Table 1: Infrastructure and equipment requirements

Site infrastructure and equipment	Operational requirement	Infrastructure location
Process water ponds (3)	(a) Lined to achieve a permeability of at least 1×10^{-9} m/s; (b) A minimum top of embankment freeboard of 300 mm is maintained; and (c) Must be inspected daily to confirm integrity and required freeboard capacity is available.	As shown in Figure 2
Biofilter dam	(a) Earthen lined.	As shown in Figure 2
Drop-out sump	(a) Weir boards on overflow point, to control (if required) flow and/or storage capacity; and (b) Earthen lined.	As shown in Figure 2
HMC, product and tailings storage areas	(a) Must maintain mechanisms to ensure that stormwater is diverted to either the biofilter dam or the drop-out sump for treatment and disposal or reuse.	As shown in Figure 2
Sealed plant, workshop and laboratory areas		
HMC unloading road hopper ramp		
Groundwater monitoring bores (GQ1, GQ2, GQ3)	(a) Must be maintained free from blockages and in working order.	As shown in Figure 2
Dust monitoring equipment (AQ2 and AQ3)	(a) Must be sited in accordance with AS 3580.1.1.	As shown in Figure 2

- Where any inspection set out in Table 1 identifies that an appropriate level of environmental protection is not being maintained, the licence holder must take corrective action to mitigate adverse environmental consequences as soon as practicable.

Waste processing

3. The licence holder must ensure that the waste types specified in Table 2 are only subjected to the corresponding processes, subject to the corresponding process limits and specifications.

Table 2: Waste processing

Waste type	Processes	Process limits and specifications
Process water	Containment, treatment and disposal or reuse	(a) Must only be discharged into the process water ponds, biofilter dam or drop-out sump.
Contaminated stormwater		

Emissions and discharges

Point source emissions

4. The licence holder must ensure that the emissions specified in Table 3, are discharged only from the corresponding discharge point, at the corresponding discharge point height and only at the corresponding discharge point location.

Table 3: Authorised discharge points

Emission	Discharge point	Discharge point height (m)	Discharge point location
Dust from dry separation plant	Baghouse exhaust stack 1	4.8	A1 in Figure 2
Exhaust and dust from the primary dryer and secondary reheater	Baghouse exhaust stack 2	3.0	A2 in Figure 2
Stormwater treated in bio filter dam and drop-out sump	Discharge pipe from drop-out sump	-	W1 in Figure 2

5. The licence holder must ensure that emissions from the discharge point listed in Table 4 for the corresponding parameter do not exceed the corresponding limit when monitored in accordance with condition 11.

Table 4: Emission and discharge limits

Discharge point	Parameter	Limit ¹	Averaging period
Baghouse exhaust stack 1	TSP	30 mg/m ³	60 minutes
Baghouse exhaust stack 2			
Discharge pipe from drop-out sump	EC	1,500 µS/cm	Spot sample
	TSS	80 mg/L	
	pH	6.5 (lower limit) 8 (upper limit)	

Note 1: Baghouse exhaust stack units are referenced to STP dry and 18% O₂

Fugitive emissions

6. Subject to condition 7, the licence holder must ensure that ambient concentrations at the monitoring locations listed in Table 5 for the corresponding parameter do not exceed the corresponding trigger value when monitored in accordance with condition 12.

Table 5: Ambient air quality trigger values

Monitoring locations	Parameter	Trigger value
AQ2; and AQ3 in Figure 2	TSP	260 µg/m ³

Emissions and discharge management

7. The licence holder must, in the event of a parameter in condition 6 exceeding the corresponding trigger value specified in that condition, undertake the management actions that correspond with the relevant parameter and corresponding monitoring locations within the corresponding timeframe as specified in Table 6.

Table 6: Management actions required in the event of a trigger value exceedance

Monitoring locations	Parameter	Management actions	Timeframe
AQ2; and AQ3 in Figure 2	TSP	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.	As soon as is practicable after the detection of an exceedance.

8. The licence holder is exempt from compliance with the limit specified in Table 5 if in the case of an event in Table 6;
- (a) the corresponding management action is taken; and
 - (b) there is sufficient evidence to demonstrate that the exceedance is not attributed to operations on the premises.
9. The licence holder must record and investigate the exceedance of any descriptive or numerical limit specified in Table 4 and Table 5.

Monitoring

Process monitoring

10. The licence holder must record the total amount of processing occurring on the premises, for each parameter listed in Table 7, in the corresponding unit, and for each corresponding time period, as set out in Table 7.

Table 7: Process monitoring

Parameter	Unit	Time period
Amount of ore processed	tonnes	Annually
Amount of MZI final tails dispatched from the premises		Monthly

Point source monitoring

- 11.** The licence holder must monitor emissions in accordance with the requirements specified in Table 8.

Table 8: Monitoring of point source emissions

Discharge point	Discharge point location	Parameter	Units ¹	Averaging period	Frequency ²	Method	
						Sampling	Analysis
Baghouse exhaust stack 1 and 2	A1; and A2 in Figure 2	TSP	mg/m ³	60 minutes	Annually	AS 4323.1 or USEPA Method 1	USEPA Method 5
		SO ₂					USEPA Method 6
		NO _x					USEPA Method 7E
Discharge pipe from drop-out sump	W1 in Figure 2	EC	µS/cm	Spot sample	Weekly while discharging	AS/NZS 5667.1 ³	-
		TSS	mg/L				
		pH ⁴	-				

Note 1: Concentration units for A1 and A2 are referenced to STP dry and 18% O₂

Note 2: Monitoring shall be undertaken to reflect normal operating conditions

Note 3: Non-NATA accredited sampling is permitted.

Note 4: In-field non-NATA accredited analysis is permitted.

Ambient monitoring

- 12.** The licence holder must monitor the ambient environment for concentrations of the parameter listed in Table 9:

- at the corresponding monitoring location;
- in the corresponding unit;
- at no less than the corresponding frequency;
- for the corresponding averaging period; and
- using the corresponding method,

as set out in Table 9.

Table 9: Monitoring of ambient environmental quality

Monitoring point location	Parameter	Units ¹	Averaging period	Frequency	Method
AQ2; and AQ3 in Figure 2	TSP	µg/m ³	24 hours	Monthly ²	AS 3580.9.3

Monitoring point location	Parameter	Units ¹	Averaging period	Frequency	Method
GQ1; GQ2; and GQ3 in Figure 2	SWL ⁴	m AHD	Spot sample	Quarterly	AS/NZS 5667.11 ³
	pH ⁴	-			
	EC	µS/cm			
	TRH	mg/L			
	Ra ²²⁶				
	Ra ²²⁸				
			Annually		

Note 1: Concentration units for AQ2 and AQ3 are referenced to STP dry.

Note 2: Monthly during the period 1 September to 31 May the following year.

Note 3: Non-NATA accredited sampling is permitted.

Note 4: In-field non-NATA accredited analysis is permitted.

General monitoring requirements

13. The licence holder must ensure that all non-continuous sampling and analysis pursuant to conditions 11 and 12 is undertaken by a holder of a current accreditation from NATA for the methods of sampling and/or analysis relevant to the corresponding relevant parameter, unless indicated otherwise in Table 8 and Table 9.
14. 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 annual period such that there are at least 9 months in between the days on which samples are taken in successive years.
15. The licence holder must ensure that all monitoring equipment used to comply with conditions 10, 11, and 12 is operated and calibrated in accordance with the manufacturer's specifications.

Records and reporting

16. 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.

- 17.** 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 100 days after the end of that annual period an Annual Audit Compliance Report in the approved form.
- 18.** The licence holder must submit to the CEO by no later than 100 days after the end of each annual period, an Annual Environmental Report for that annual period for the conditions listed in Table 10, and which provides information in accordance with the corresponding requirement set out in Table 10.

Table 10: Annual Environmental Report

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.
2	A summary of any corrective actions undertaken during the annual period pursuant to the condition.
9	A summary of investigations into exceedances of any descriptive or numerical limit specified in the conditions.
10	A summary of the process monitoring undertaken at the premises presented in table format.
11 and 12	<ul style="list-style-type: none"> (a) Tabulated monitoring data results and time-series graphs in Microsoft Excel format for each monitoring location showing concentrations of all parameters over a minimum three year period (where sufficient data allows). (b) A description of the scope of work carried out and the field methodologies employed. (c) Copies of the field monitoring records and field QA/QC documentation. (d) An interpretation of monitoring data results including comparison to historical trends and emission limits. (e) A tabulated summary of emission limit exceedances, investigations and actions undertaken in response to the exceedances, events which were exempt to the emission limit and management actions undertaken. (f) Trend graphs to provide a graphical representation of historical results and to support the interpretive summary. (g) A diagram with aerial image overlay showing all monitoring locations and depicting groundwater level contours and flow direction (relevant site features including discharge points and other potential sources of contamination must also be shown). (h) Laboratory certificates of analysis for the monitoring in accordance with Table 8 and Table 9.
10 - 15 (Monitoring)	Where the requirements for calibration of monitoring equipment cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, summarise these issues including details of any modifications to the methods.

Condition	Requirement
16	Summary of complaints received and any action taken to investigate or respond to any complaint.

- 19.** 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) any maintenance of infrastructure that is performed in the course of complying with condition 1 of this licence;
 - (c) any inspections that are performed in the course of complying with condition 1 and 2 of this licence;
 - (d) monitoring programs undertaken in accordance with conditions 10, 11 and 12 of this licence; and
 - (e) complaints received under condition 16 of this licence.
- 20.** The books specified under condition 19 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 11 have the meanings defined.

Table 11: Definitions

Term	Definition
ACN	Australian Company Number
AHD	Australian height datum
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 same year.
AS 3580.1.1	means Australian Standard <i>AS/NZS 3580.10.1 Methods for sampling and analysis of ambient air - Guide to siting air monitoring equipment</i> .
AS 3580.9.3	means Australian Standard <i>AS/NZS 3580.10.1 Methods for sampling and analysis of ambient air - Determination of suspended particulate matter – Total suspended particulate (TSP) – High volume sampler gravimetric method</i> .
AS 4323.1	means Australian Standard <i>AS 4323.1 Stationary source emissions - selection of sampling positions</i> .
AS/NZS 5667.1	means the Australian Standard <i>AS/NZS 5667.1 Water quality - sampling - guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples</i> .
AS/NZS 5667.11	means the Australian Standard <i>AS/NZS 5667.11 Water quality - sampling - guidance on sampling of groundwater</i> .
books	has the same meaning given to that term under the EP Act.
CEO	means Chief Executive Officer of the Department. “submit to / notify the CEO” (or similar), means either: Director General Department administering the <i>Environmental Protection Act 1986</i> Locked Bag 10 Joondalup DC WA 6919 or: info@dwer.wa.gov.au
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (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.

Term	Definition
EC	electrical conductivity
emission	has the same meaning given to that term under the EP Act.
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i>
freeboard	means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point.
HMC	heavy mineral concentrate
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.
NATA	National Association of Testing Authorities
normal operating conditions	means any operation of a particular process (including abatement equipment) excluding start-up, shutdown and upset conditions, in relation to stack sampling and monitoring.
NO _x	Nitrogen oxides
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.
Ra	Radium
SO ₂	Sulfur dioxide
SWL	standing water level
TRH	total recoverable hydrocarbons
TSP	total suspended particulates
TSS	total suspended solids
USEPA	United States (of America) Environmental Protection Agency
USEPA Method 1	means USEPA Method 1 <i>Sample and velocity traverses for stationary sources</i> .
USEPA Method 5	means USEPA Method 5 <i>Determination of particulate matter emissions from stationary sources</i> .

Term	Definition
USEPA Method 6	means USEPA Method 6 <i>Determination of sulfur dioxide emissions from stationary sources</i> .
USEPA Method 7E	means USEPA Method 7E <i>Determination of nitrogen oxides emissions from stationary sources (instrumental analyser procedure)</i> .
waste	has the same meaning given to that term under the EP Act.

END OF CONDITIONS

Schedule 1: Maps

Premises map

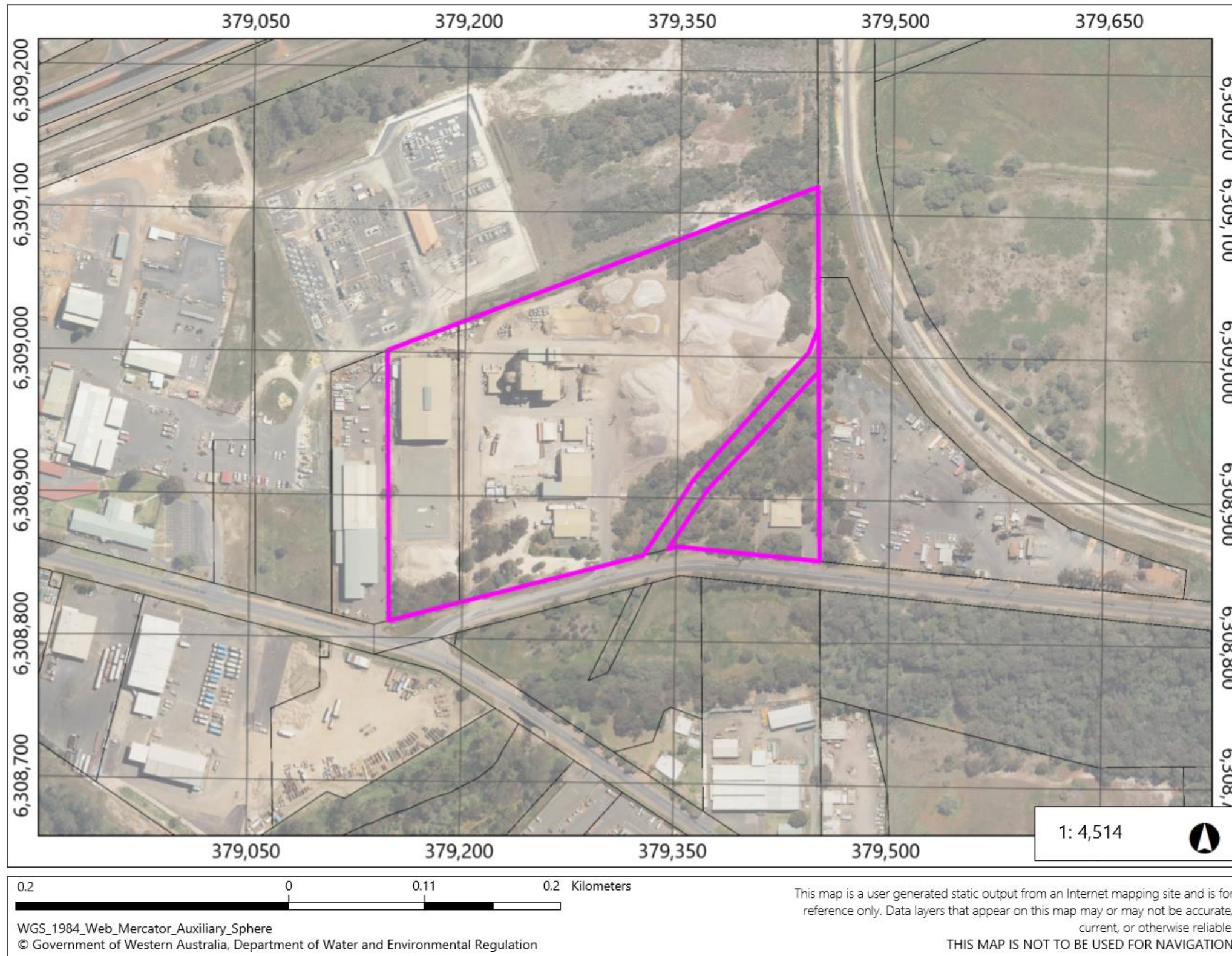


Figure 1: Map of the boundary of the prescribed premises shown in pink.

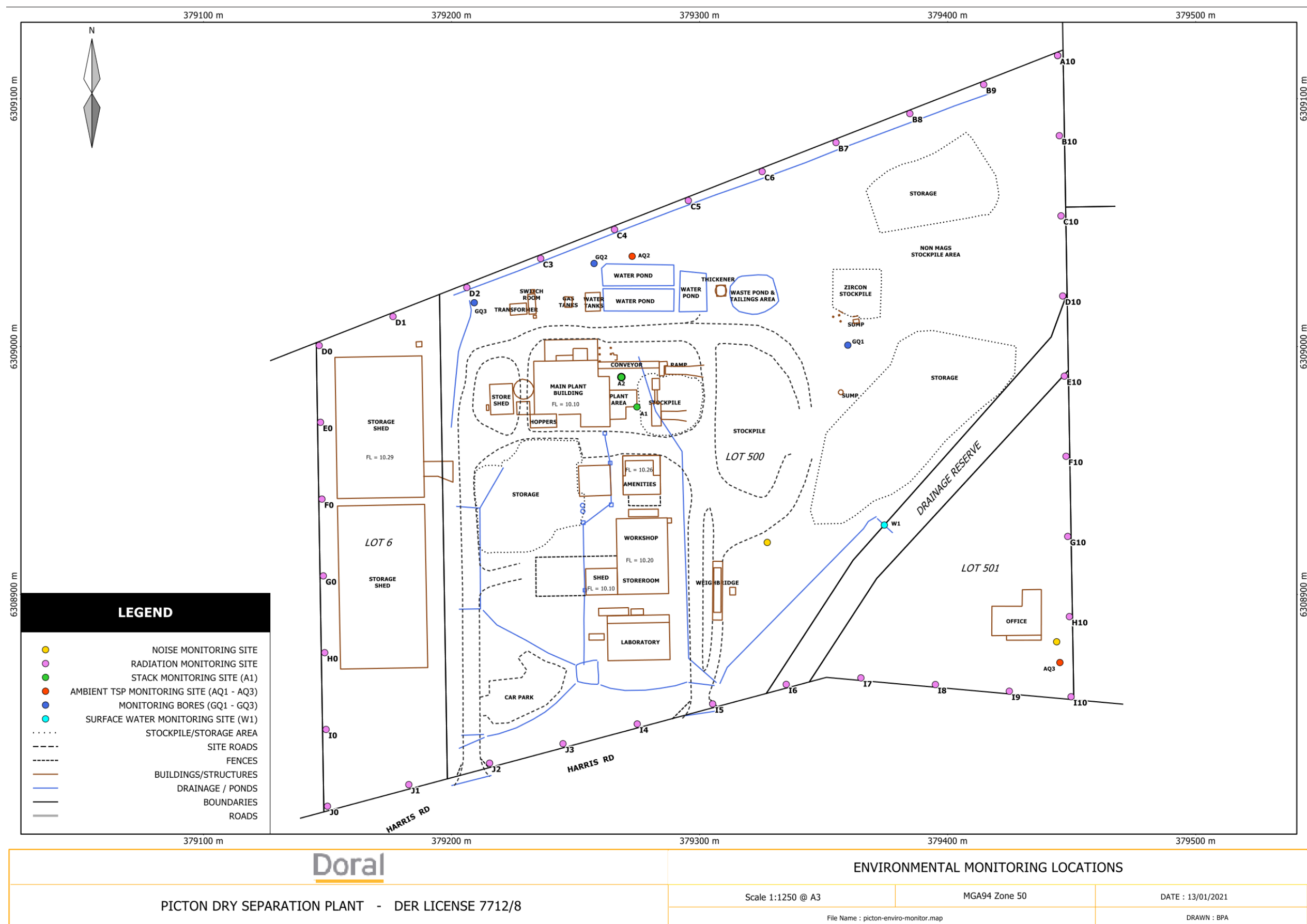


Figure 2: Map of discharge points and monitoring locations

L7712/2001/8 Amendment date:30 April 2021

IR-T06 Licence template (v7.0) (February 2020)

Schedule 2: Premises boundary

The premises boundary is defined by the coordinates in Table 12.

Table 12: Premises boundary coordinates (GDA94 MGA Zone 50)

Point number	Eastings	Northings
1	379441.56	6309003.77
2	379361.71	6308913.73
3	379326.74	6308859.99
4	379198.16	6308825.55
5	379148.38	6308812.22
6	379145.33	6309001.45
7	379195.01	6309020.92
8	379446.40	6309119.48
9	379447.45	6309056.09
10	379448.03	6309021.25
11	379448.54	6308990.26
12	379450.74	6308857.44
13	379350.95	6308866.47
14	379344.07	6308864.63
15	379371.22	6308906.34