Government of Western Australia
Department of Water and Environmental Regulation

Licence

Licence number	L9029/2017/2
Licence holder	Karora (Higginsville) Pty Ltd
ACN	108 547 217
Registered business address	15 Altona Street, WEST PERTH WA 6005
DWER file number	DWERVT14264~1
Duration	28/03/2024 to 27/03/2027
Date of issue	27/03/2024
Premises details	Mt Henry Project Legal description - M63/515, L63/64 and G63/7 NORSEMAN WA 6443 As defined by the coordinates in Schedule 2

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed production / design capacity**
Category 6: Mine dewatering	400,000 tonnes per annum

This licence is granted to the licence holder, subject to the attached conditions, on 27 March 2024, by:

Timothy Moran
Digitally signed by Timothy Moran
Date: 2024.03.25 11:38:38 +08'00'

Timothy Moran
A/MANAGER, RESOURCE INDUSTRIES
REGULATORY SERVICES

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

Licence history

Date	Reference number	Summary of changes
14/07/2017	W6028/2017/1	Works Approval to complete construction of dewatering pipeline and minor infrastructure. Instrument expired on 13/07/2019.
28/03/2019	L9029/2017/1	Licence granted after demonstrated compliance with W6028.
03/01/2020	L9029/2017/1	Licence amended to give effect to Ministers determination of 27 November 2019.
27/03/2024	L9029/2017/2	Renew Licence for thirty-six months allowing for a review of the licence to be completed.

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 Emissions

1. The Licence must not cause any emissions from the Premises except for specified emissions described in Column 1 of Table 1 subject to the exclusions, limitations or requirements specified in Column 2 of Table 1.

Table 1: Authorised Emissions table

Column 1	**Column 2**
Emission type	**Exclusions/Limitations/Requirements**
Specified Emissions	
Mine dewater	Must be discharged in a manner that avoids inundation the shoreline, with the pipeline extending 500m from the lake Dundas shoreline. Subject to compliance with the conditions of this licence

Infrastructure and equipment

2. The licence holder must ensure that the site 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

Column 1	**Column 2**	**Column 3**
Site infrastructure and equipment	**Operational requirement**	**Infrastructure location**
Dewatering Pipeline	Daily visual checks of the integrity of the pipeline when in operation.	Orange route as shown in Schedule 1 Premises map
Pipeline anchors	Checks of the integrity of the anchors along the pipeline, especially prior to and following significant rainfall events*.	Orange route as shown in Schedule 1 Premises map
Pipeline bunding capacity	Weekly maintenance of bunds to maintain capacity. Removal of any accumulated sediment/ debris, especially prior to and following significant rainfall events*.	Orange route as shown in Schedule 1 Premises map
Pipeline telemetry	Weekly checks of the integrity of telemetry when dewatering in operation.	Orange route as shown in Schedule 1 Premises map
Access track from pit to Lake Dundas	Monthly maintenance of pipeline access track and after significant rainfall*.	Orange route as shown in Schedule 1 Premises map

* A significant rainfall event is defined based on the Bureau of Meteorology website for the location of Norseman (http://www.bom.gov.au/water/designRainfalls/revised-ifd/?year=2016). A significant rainfall event has been based on Intensity Frequency Duration (IFD), being 24 hours rainfall duration at 20% Annual Exceedance Probability (AEP). Note that a 20% AEP is equivalent to a 4.48 Annual Recurrence Internal (ARI).

General Monitoring

3. The Licence Holder shall record and report the total volume of dewater discharged to Lake Dundas. Records shall include the cumulative monthly volume of water discharged to Lake Dundas per year.

4. The Licence Holder shall complete the monitoring program as specified in Conditions 7, 8, 9, 10, 11 & 12 of this Licence, at the monitoring locations and frequency specified, on the commencement of dewater discharge to Lake Dundas.

5. The Licence Holder must ensure that monitoring is undertaken as required by this Licence, specifically:

(a) All water samples are collected and preserved in accordance with AS/NZS 5667.1, all waste water sampling is conducted in accordance with AS/NZS 5667.10 and all sediment sampling is conducted in accordance with AS/NZS 5667.12;

(b) All laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured, unless indicated otherwise in Schedule 3;

(c) The health of riparian vegetation adjacent to the discharge point shall be monitored by a qualified botanist with a knowledge of the flora of the Coolgardie bioregion;

(d) Monitoring of aquatic biota (algae, invertebrates (including resting stages)) at the discharge site and at least one control site shall be undertaken by a scientist with experience in monitoring aquatic invertebrates and algae of salt lakes.

Reportable Events

6. Any releases of hypersaline water from pipeline leakage or breach shall be notified to DWER within one business day.

Monitoring

Dewater Discharge, Sediment and Vegetation Monitoring

7. The Licence Holder must undertake the following:

(a) Monitoring of water quality discharged and volumes;

(b) Monitoring of receiving surface water quality and metal/metalloids in sediments;

(c) Monitoring of aquatic biota (algae, invertebrates (including resting stages)) at the discharge site and at least one control site; and

(d) Monitoring of riparian vegetation health.

8. The Licence Holder must monitor the parameters specified in Column 1 from the locations specified in Column 2 of Table 3, Table 4, Table 5 and Table 6. The parameters must be sampled at the frequency specified in Column 3, and in accordance with the method specified in Column 4.

9. The water and sediment samples must be analysed at a NATA accredited laboratory.

10. Monitoring of aquatic biota (algae, invertebrates (including resting stages)) shall be undertaken by a qualified scientist experienced in biological sampling from salt lakes, and shall occur at the Mt Henry Discharge Site and at least one control site as shown in the Monitoring locations map. The ecological components monitored will reflect the lake conditions at the time of sampling (i.e. whether wet or dry).

11. Monitoring of riparian vegetation health shall be undertaken by a qualified scientist with experience in the identification of flora of the Coolgardie bioregion and shall occur at the shoreline closest to the Mt Henry Discharge Site where riparian vegetation is found, as shown in the Monitoring locations map.

12. The Licence Holder must ensure the analysis of water and sediment quality is carried out at a sufficient level of detection to allow comparison with relevant default values in the current version of the ANZECC & ARMCANZ (2000) water quality guidelines.

Table 3: Dewater Quality Monitoring Table

Column 1		**Column 2**	**Column 3**	**Column 4**
Parameters		**Location**	**Frequency**	**Method**
Water quality	EC pH Total Dissolved Solids Total Suspended Solids	Groundwater dewatering drawpoint	Monthly	AS/NZS 5667.1 AS/NZS 5667.10
Anions and Cations	Bicarbonate (HCO3) Carbonate (CO3) Calcium (Ca) Chloride (Cl) Magnesium (Mg) Potassium (K) Sodium (Na) Sulfate (SO4)		Six monthly	
Total Metals and Trace Elements	Aluminum (Al) Antimony (Sb) Arsenic (As) Barium (Ba) Beryllium (Be) Boron (B) Cadmium (Cd) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Manganese (Mn) Mercury (Hg) Molybdenum (Mo)		Six monthly	

Column 1		Column 2	Column 3	Column 4
Parameters		**Location**	**Frequency**	**Method**
	Nickel (Ni) Selenium (Se) Silicon (Si) Thallium (Tl) Uranium (U) Vanadium (V) Zinc (Zn)			

Table 4: Lake Dundas Sediment and Water Quality Monitoring Table

Column 1		Column 2	Column 3	Column 4
Parameters		**Location**	**Frequency**	**Method**
Water Quality	EC pH TDS TSS	Mt Henry Discharge Site *Control sites* Selene^ Discharge Site Dundas 1 Dundas 2 Dundas 3 Dundas 4	Monthly	AS/NZS 5667.1 AS/NZS 5667.10
Sediment Quality	Moisture Content Nitrate plus Nitrate (NO2 + NO3) Total Nitrogen Total Phosphorus Total Organic Carbon		Annual	AS/NZS 5677.12
Anions and Cations of Lake Dundas sediment and water	Bicarbonate (HCO3) Carbonate (CO3) Calcium (Ca) Chloride (Cl) Magnesium (Mg) Potassium (K) Sodium (Na) Sulfate (SO4)		Annual	AS/NZS 5667.1 AS/NZS 5667.10 AS/NZS 5677.12
Total Metals and Trace Elements of Lake Dundas sediment and water	Aluminum (Al) Antimony (Sb) Arsenic (As) Barium (Ba) Beryllium (Be) Boron (B) Cadmium (Cd) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe)		Annual	

Column 1		Column 2	Column 3	Column 4
Parameters		**Location**	**Frequency**	**Method**
	Lead (Pb) Manganese (Mn) Mercury (Hg) Molybdenum (Mo) Nickel (Ni) Selenium (Se) Silicon (Si) Thallium (Tl) Uranium (U) Vanadium (V) Zinc (Zn)			

Note: The Selene monitoring location is not currently a discharge site.

Table 5: Lake Dundas Aquatic Biota and Algae Monitoring Table

Column 1		Column 2	Column 3	Column 4
Parameters		**Location**	**Frequency**	**Method**
Aquatic Biota	Surface Aquatic invertebrates (diversity and abundance)	Mt Henry Discharge Site *Control sites* Selene^ Discharge Site Dundas 1 Dundas 2 Dundas 3 Dundas 4 Dundas 5	Annual	Suitably qualified environmental scientist
Algae	Benthic Microalgae Invertebrates (including resting stages)		Annual	

Note: The Selene monitoring location is not currently a discharge site.

Table 6: Riparian Vegetation Monitoring Table

Column 1		Column 2	Column 3	Column 4
Parameters		**Location**	**Frequency**	**Method**
Riparian vegetation	Level 1 vegetation survey/targeted repeat comparison surveys	Mt Henry Shoreline Selene	Annual	Suitably qualified environmental scientist/botanist

Column 1		Column 2	Column 3	Column 4
Parameters		**Location**	**Frequency**	**Method**
	Photo point monitoring/ Riparian vegetation health assessment (rapid assessment method)	Shoreline Dundas 1 Dundas 3 Dundas 4	Annual Initial survey to be undertaken prior to discharge	

Note: Riparian vegetation is to be monitored at the shoreline nearest to the discharge point, as the Mt Henry Discharge Site is situated in an area devoid of riparian vegetation.

Monitoring reports

13. The monitoring reports must contain:

(a) The sampling or measurement date;

(b) The raw monitoring data as required by Condition 7 to 12 in tabulated form;

(c) The data of dewater volumes discharged required by Condition 3;

(d) An assessment of any trends observed from data over time; and

(e) Recommendations to improve the dewater discharge monitoring program or improve operational management of the discharge to reduce impact on the receiving environment.

Record-keeping

14. 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 maintenance of infrastructure required to ensure that it is kept in good working order in accordance with Condition **Error! Reference source not found.** of this Licence;

(c) The Licence Holder must keep a log of all the inspections in Condition 2 Column 2 of Table 2, with each inspection record signed by the responsible person.

(d) Monitoring undertaken in accordance with Conditions 7, 8, 9, 10, 11, & 12 of this Licence;

(e) Reportable Events reported in accordance with Condition 6 of this Licence;

(f) Complaints received under Condition 16 of this Licence;

15. The books specified under Condition 14 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.

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 21 June after the end of that annual period an Annual Audit Compliance Report in the approved form.

(c) The report is to comprise

(i) Discharged water volumes;

(ii) Discharge and receiving water quality data;

(iii) Assessment of riparian vegetation health compared to a baseline vegetation survey (pre-dewatering discharge);

(iv) Assessment of aquatic biota species diversity and abundance within the impacted site (Mt Henry Discharge Site) with a comparison to species in at least one un-impacted (control) site; and

(v) For reports completed in subsequent years, current monitoring results shall be compared to previous monitoring and baseline data.

18. The Licence Holder must comply with a Department Request, within 14 days from the date of the Department Request or such other period as agreed to by the Inspector or the CEO.

Definitions

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

Table 7: Definitions

Term	Definition
ACN	Australian Company Number
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 21 March until 20 March of the immediately following year.
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 *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 or: info@dwer.wa.gov.au
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.
EP Act	*Environmental Protection Act 1986* (WA)
EP Regulations	*Environmental Protection Regulations 1987* (WA)
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.
monthly period	means a one-month period commencing from first day of a month until last day of the immediately following month.
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(s) Figure 1 in Schedule 1 to this licence.
prescribed premises	has the same meaning given to that term under the EP Act.
waste	has the same meaning given to that term under the EP Act.

END OF CONDITIONS

Schedule 1: Maps

Premises map

The Premises is shown in the map below, with the Premises boundary shown as the solid blue line.

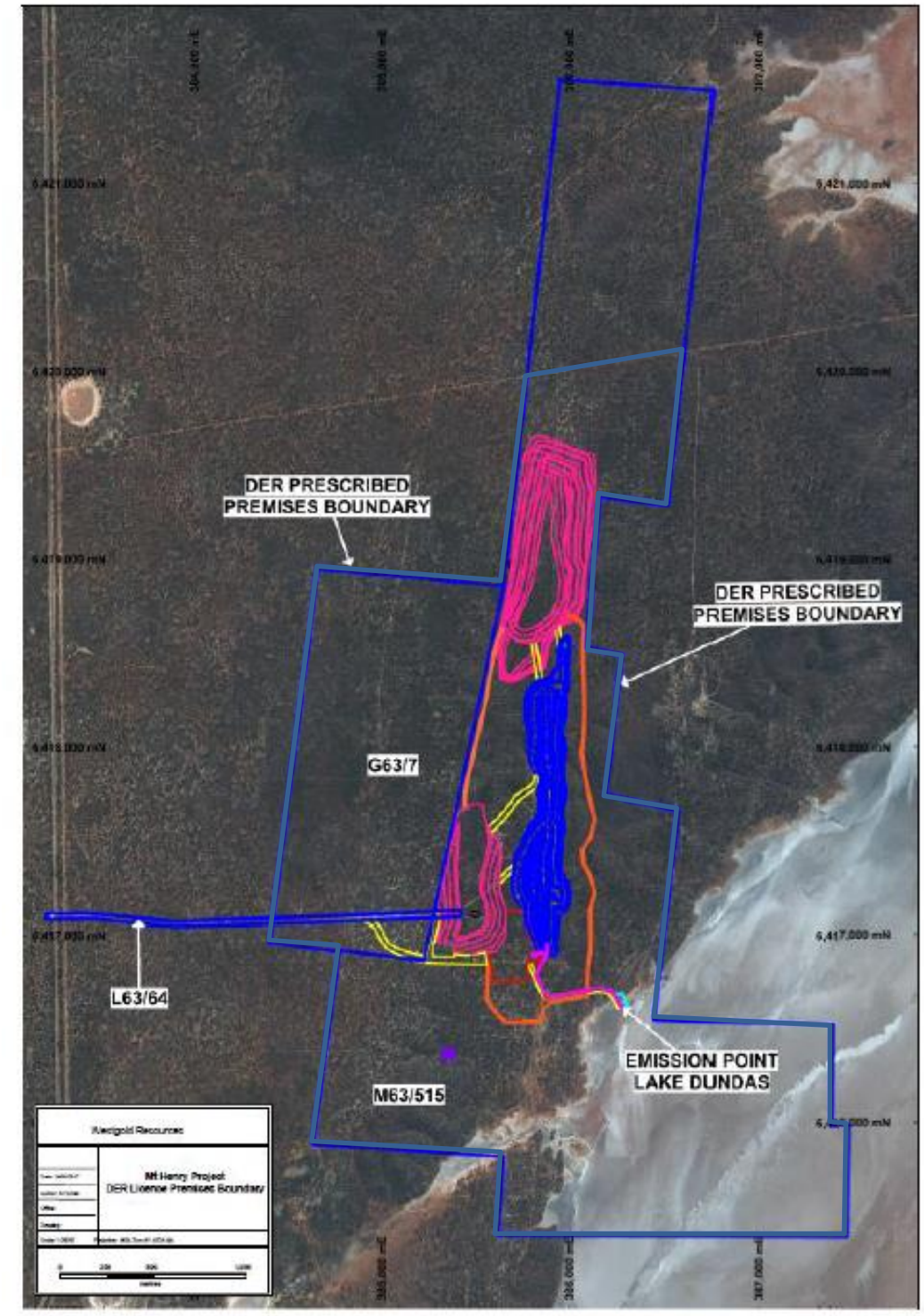

Figure 1: Map of the boundary of the prescribed premises depicted in light blue

Schedule 2: Description of Monitoring Sites

Table 8: Monitoring Sites

Monitoring Sites			
Site	**GPS coordinates**	**Hydroperiod / salt crust**	**Site description**
Mt Henry Discharge Site	32°23'6.97"S 121°47'37.28"E	Unknown	Salt lake
Selene Discharge Site	32°24'15.66"S 121°47'26.34"E	Unknown	Salt lake (*future discharge location*)
Mt Henry Shoreline	32°23'6.97"S 121°47'19.87"E	N/A	Riparian zone dominated by *Tecticornia*
Selene Shoreline	32°24'15.17"S 121°47'9.33"E	N/A	Riparian zone dominated by *Tecticornia*
Dundas 1	32°24'46.18"S 121°47'3.67"E	Dry / Nil	Central western site on Lake Dundas. Open embayment on playa, with no major inflows. Sandy clay substrate with large quartz crystals evident on surface. Riparian zone dominated by *Tecticornia*, transitioning into Eucalypt woodland.
Dundas 2	32°26'14.83"S 121°49'19.13"E	Dry / Speckled	South eastern site on Lake Dundas. Located on edge of embayment, opening to main lake. Several small drainage lines present. Sandy clay substrate mixed with gypsum crystals. Riparian zone dominated by *Tecticornia* and *Frankenia*, with the former showing signs of stress.
Dundas 3	32°24'50.63"S 121°48'37.88"E	Dry / Speckled	Central eastern site on Lake Dundas. Located on edge of embayment. Several small drainage lines present. Sandy clay substrate. *Riparian zone dominated by Tecticornia.*
Dundas 4	32°21'28.75"S 121°49'13.44"E	Moist / Speckled	Northern most site on Lake Dundas. Located on edge of embayment. Sandy clay substrate with speckled salt crust and scattered quartz crystals. Surrounded by irregular dunes with several small drainage lines. *Tecticornia* growing on playa and along dunes in riparian zone.
Dundas 5	32°25'58.67"S 121°46'45.12"E	Dry / Speckled	South western site on Lake Dundas. Located at the mouth of a wide, irregular inlet that drains to the playa. Sandy substrate with scattered gravel. Riparian zone dominated by *Tecticornia*.

Schedule 3: Map of Monitoring Location

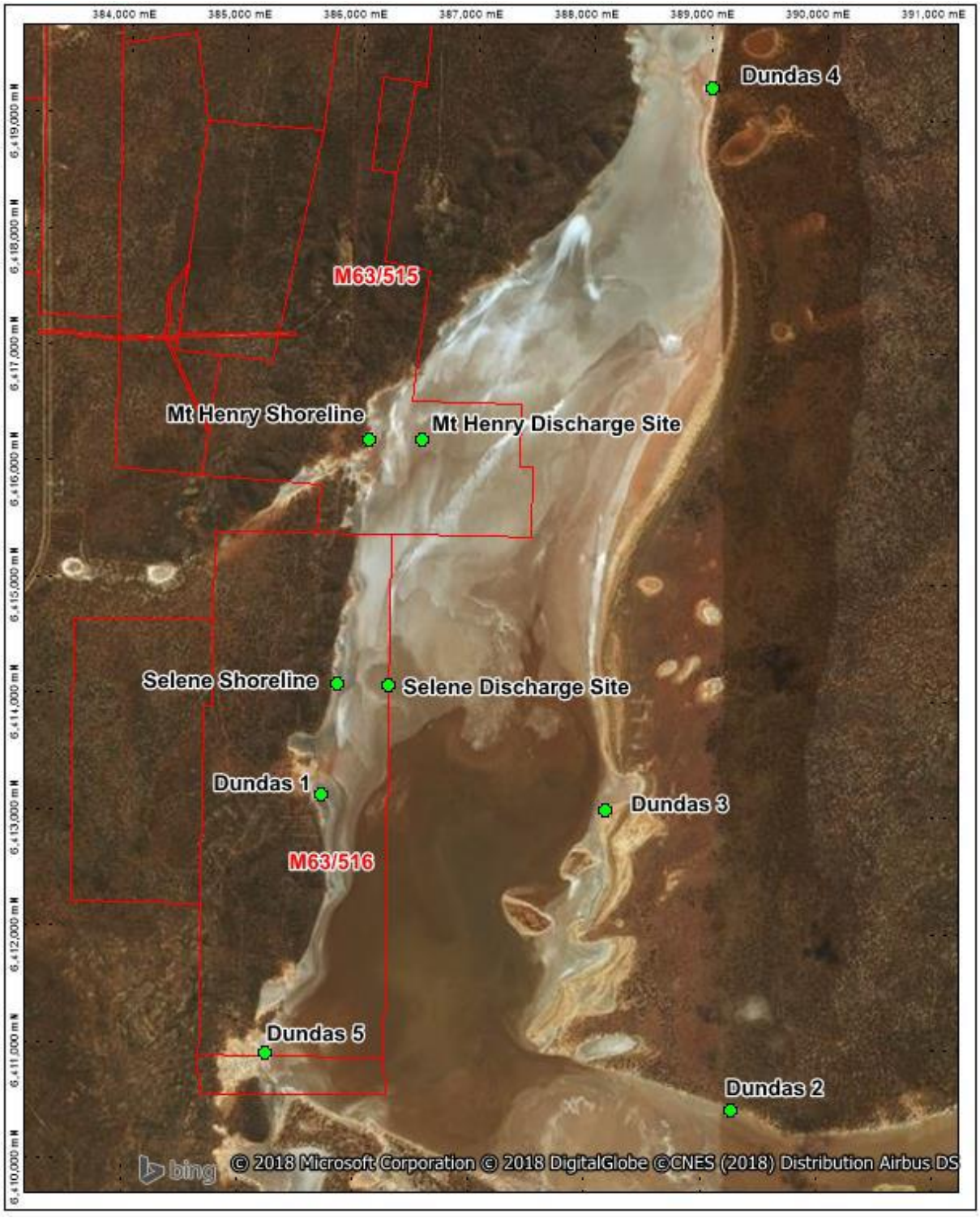

Figure 2: Map of the Monitoring Site locations