



Northern  
Territory  
Government

## WASTE DISCHARGE LICENCE

(Pursuant to section 74 of the *Water Act 1992*)

<b>Licensee</b>	Thessally Resources Pty Ltd
<b>Licence Number:</b>	<b>WDL250</b>
Registered Business Address:	Level 16/19 Smith St Darwin NT 0800
ACN:	140 005 643
ABN:	63 140 005 643
Commencement Date:	22.. February 2023
Expiry Date:	21.. February 2025
<b>Licensed Action:</b>	The controlled discharge of wastewater from Huandot Pit to Paperbark Creek (Adelaide River catchment) for the purposes of bulk sampling works via the authorised discharge point and subject to the conditions of this licence.

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# WASTE DISCHARGE LICENCE (WDL250)

## INFORMATION ABOUT THIS LICENCE

This waste discharge licence is granted pursuant to section 74 of the *Water Act 1992* (NT) (*Water Act*), which empowers the Controller of Water Resources to, in accordance with the *Water Act*, grant a licence to a person to carry out an action that would otherwise be an offence against this Act.

## Responsibilities of Licensee

- In addition to the conditions set out in this licence, general responsibilities of licensees are set out in the *Waste Management and Pollution Control Act 1998* (NT) (*WMPC Act*), the *Water Act* and the *Water Regulations 1992* (NT) (*Water Regulations*).
- It is an offence under the *Water Act*, if the holder of a waste discharge licence contravene or cause, suffer or permit a person to contravene a term or condition to which the waste discharge licence is subject (s 76 *Water Act*).
- Except as expressly provided for in this licence or applicable law, it is an offence under section 16 of the *Water Act* to wilfully cause or cause, directly or indirectly:
  - waste to come into contact with water; or
  - water to be polluted.

## Duration of Licence

- This licence will remain in force until its Expiry Date, it is surrendered by the licensee, or until it is suspended or revoked by the Controller of Water Resources.
- A licensee may surrender its licence at any time (s 94 *Water Act*).
- If the licensee wishes to surrender its licence it should complete the notification form available from the Administering Agency.
- Once a licence is surrendered, the authority to allow waste to come into contact with water or water to be polluted ends, and causing waste to come into contact with water or water to be polluted is an offence pursuant to section 16 of the *Water Act*.

## Amendment, Modification or Revocation of Licence

- As set out in section 93 of the *Water Act*, the Controller of Water Resources may, by notice served on the holder of the licence:
  - amend or modify the terms and conditions of a licence; or
  - where the Controller of Water Resources is satisfied that the holder of the licence has contravened or failed to comply with a term or condition of the licence or of any other licence previously held by the person for a similar purpose during the 12 months immediately preceding the grant of the first-mentioned licence, the Controller of Water Resources may:
    - revoke a licence; or
    - suspend a licence.

## Transfer of Licence

- Where a waste discharge licence is granted to a person in relation to the person's use of land and, during the period of this licence, the person's interest in the land is transferred to another person,

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the waste discharge licence shall be deemed to have also been transferred to the other person (s 92 Water Act).

- The licensee must ensure the contact details recorded with the Administering Agency for the licence are correct at all times in accordance with condition 6. Accordingly, it is recommended the transferee complete the notification of transfer of a waste discharge licence form available from the Administering Agency.

### Public Register

- A copy of this Licence will be placed on the Register in accordance with section 95 of the Water Act.
- A copy of plans for environmental management, reports, submissions or documents provided at Schedule 1 Item 14 will be placed on the Register.
- The Register is freely available from the Northern Territory Environment Protection Authority (NT EPA) website.

### Water Quality Standards

- The Administrator may declare, by notice in the *Gazette*, a beneficial use, quality standard, criteria or objectives which apply in relation to any waste or class of waste, or water or class of water (s 73 Water Act).
- A water or waste beneficial use, quality standard, criteria or objectives declared under s 73 of the Act and in force is an Environment Protection Objective for the purposes of the WMPC Act (s 18 WMPC Act).
- An Environment Protection Objective is a statutory instrument to establish principles on which:
  - Environmental quality is to be maintained, enhanced, managed or protected;
  - Pollution, or environmental harm resulting from pollution, is to be assessed, prevented, reduced, controlled, rectified or cleaned up; or
  - Effective waste management is to be implemented or evaluated.
- Schedule 1 Item 1 specifies the beneficial use, quality standard, criteria or objective relevant to this licence at the date of issue.

### Environmental Interests

- Environmentally sensitive or significant areas may be captured by and protected under the *Environment Protection Act 2019* (NT) and/or the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). As such, and to best protect and regulate our waterways, waste discharge licences must identify the sensitivity of the environment surrounding the location of the Licensed Action.
- Schedule 1 Item 2 specifies the sites of conservation significance (if any) relevant to this licence at the date of issue.
- Schedule 1 Item 3 specifies the Ramsar wetlands (if any) relevant to this licence at the date of issue.

### Cultural Interests

- Under Commonwealth and Northern Territory laws it can be an offence to enter or remain on or damage a sacred site.

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- Sites of Aboriginal significance including registered and recorded Aboriginal sacred sites may exist in the vicinity of the Licensed Action.
- It is the licensee's responsibility to contact the Aboriginal Areas Protection Authority, appropriate land council or other governing body and ensure that any authority certificates required as a result of conducting the Licensed Action are obtained and complied with.
- Further specific advice on any cultural requirement or implication of the Licensed Action should be sought from the relevant land council and the Aboriginal Areas Protection Authority.

### **END NOTES**

NIL

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### SCHEDULE 1 - ITEMS

Item	Detail	
<b>1. Beneficial uses (condition 19)</b>	Declaration of Beneficial Uses Coomalie Creek Catchment (Gazette No. 9, 11 March 1998)- Aquatic ecosystem protection, recreational water quality and aesthetics and agricultural water use	
<b>2. Sites of conservation significance (condition 19)</b>	Adelaide River Coastal Floodplain SOCS is located downstream of the project area	
<b>3. Ramsar wetlands (condition 19)</b>	Not applicable	
<b>4. Licence Documents (condition 13)</b>	(a) Emergency Response Plan; (b) Consultation and Communication Plan; (c) Monitoring Plan.	
<b>5. Authorised Discharge Point(s) (condition 20)</b>	DP1 as shown on the plan at Appendix 1.	Latitude: -13.002248 °S Longitude: 131.109756 °E
<b>6. Source(s) of waste (condition 21)</b>	Wastewater in Huandot Pit consisting of surface and groundwater inflows.	
<b>7. Trigger values (condition 21)</b>	The limits for parameters listed in Appendix 2.	
<b>8. Compliance point (condition 21)</b>	TRLHW007 as shown on the plan at Appendix 1.	Latitude: -13.011629 °S Longitude: 131.116746 °E
<b>9. Limitations on discharge (condition 21)</b>	Any authorised discharge must: (a) Occur only when there is sufficient natural continuous flow present in Paperbark Creek to connect to Coomalie Creek; and (b) Not exceed a rate of flow of 35 L/second.	
<b>10. Notifiable incidents (conditions 25 and 26)</b>	(a) An exceedance of a trigger value specified in Item 7 at the compliance point in Item 8, on three consecutive sampling occasions; (b) A measurement outside the range for pH or DO specified in Item 7 at the compliance point in Item 8, on three consecutive sampling occasions; (c) An exceedance of three or more times a trigger value specified in Item 7 at the compliance point in Item 8; (d) A discharge at a point not specified in Item 5; (e) A discharge from a source not specified in Item 6; or (f) A failure to comply with condition 23.	
<b>11. Monitoring Program (condition 27)</b>	Surface water monitoring in accordance with Appendix 2.	
<b>12. Annual Return (condition 38)</b>	The Annual Return is due on 1 June each year for the preceding period 1 May to 30 April during the term (or part thereof).	

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Item	Detail
<b>13. Monitoring Report (condition 39)</b>	The Monitoring Report is due on: (a) 1 June each year for the period 1 May to 30 April; and (b) the Expiry Date of this licence; and (c) in the event the licensee applies to renew the licence, 90 days prior to the Expiry Date.
<b>14. Documents placed on Register (condition 42)</b>	The following documents will be placed on the Register: (a) The Licence Documents specified in Item 4; (b) The Monitoring Report provided in accordance with condition 39; and (c) The Annual Return in accordance with condition 38.
<b>15. Special conditions (condition 43)</b>	Not applicable.

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### LICENCE CONDITIONS

#### RULES FOR INTERPRETING THE CONDITIONS OF THIS LICENCE

1. Where there is a discrepancy between the conditions of this licence and any plan, standard, guideline or other document referred to in this licence, the conditions of this licence prevail to the extent of the inconsistency.
2. Any reference to any standard, guideline or code of practice (Australian or international) in this licence means the relevant parts of the current version of that standard, guideline or code of practice.
3. In this licence, unless the contrary intention appears, words that are defined in the Water Act are intended to have the meaning given to them in that Act.
4. In this licence, unless a contrary intention appears, terms are defined in the Definitions at the end of this licence.
5. In this licence a reference to an Item is a reference to an Item specified in Schedule 1.

#### GENERAL

6. The licensee must ensure the contact details recorded with the Administering Agency for this licence are correct at all times.
7. The licensee must at all times have a 24 hour emergency contact.
8. The licensee must notify the Administering Agency prior to making any operational change that will cause, or is likely to cause, an increase in the potential for environmental harm.
9. The licensee must display clear and legible signage, in English, in a prominent location at each public entrance to the premises of the Licensed Action that includes the following details:
  - 9.1. waste discharge licence number issued under the Water Act; and
  - 9.2. 24 hour emergency contact details.
10. The licensee must cause a hard copy of this licence to be available for inspection, at the premises of the Licensed Action, by any person on request.
11. Unless otherwise specified, within 10 business days of a request, the licensee must provide to the Administering Agency a copy of any record, document, monitoring data or other information in relation to the Licensed Action in electronic form by emailing [environmentalregulation@nt.gov.au](mailto:environmentalregulation@nt.gov.au).
12. All notices, reports, documents or other correspondence required to be provided as a condition of this licence, unless otherwise specified as a condition of this licence, must be provided in electronic form by emailing [environmentalregulation@nt.gov.au](mailto:environmentalregulation@nt.gov.au).
13. The licensee must maintain, implement and comply with the current version of the documents specified in Item 4.
14. Within 10 business days of any amendment being made to a document listed specified in Item 4, the licensee must provide the amended document to the Administering Agency, along with:
  - 14.1. a tabulated summary of the amendment(s) with document references;
  - 14.2. reasons for the amendment(s); and
  - 14.3. an assessment of environmental risk associated with the amendment(s).
15. The Administering Agency may require the licensee to revise or amend and resubmit any document provided in accordance with this licence. Where the Administering Agency requires any document to be revised or amended, the licensee must submit it to the Administering Agency by the date specified by the Administering Agency.
16. The licensee must operate and maintain a community feedback telephone number enabling members of the public to contact, at any time, a person or voice mail system that can accept, on behalf of the licensee, enquiries or complaints about the Licensed Action, and to which the licensee must respond. The community feedback telephone number must be displayed:

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- 16.1. where the licensee has a website, in a prominent location on the licensee's website;
  - 16.2. in the Consultation and Communication Plan; and
  - 16.3. in other publicly available documents relating to the Licensed Action.
17. The licensee must maintain a register of complaints that records the details of each complaint received in relation to the Licensed Action and provide a copy to the Administering Agency on request. Details of the complaints must (as is reasonably practicable) include, the following information:
- 17.1. the person to whom the complaint was made;
  - 17.2. the person responsible for managing the complaint;
  - 17.3. the date and time the complaint was reported;
  - 17.4. the date and time of the event(s) that led to the complaint;
  - 17.5. the contact details of the complainant if known, or where no details are provided a note to that effect;
  - 17.6. the nature of the complaint;
  - 17.7. the nature of event(s) giving rise to the complaint;
  - 17.8. prevailing weather conditions at the time (where relevant to the complaint);
  - 17.9. the action taken in relation to the complaint, including any follow-up contact with the complainant; and
  - 17.10. if no action was taken, why no action was taken.

### OPERATIONAL

18. Without limiting the conditions of this licence, in conducting the Licensed Action, the licensee must do all things reasonable and practicable to:
- 18.1. minimise the likelihood of waste coming into contact with water or water being polluted as a result of, or in connection with, the Licensed Action;
  - 18.2. prevent and minimise the likelihood of environmental harm occurring as a result, or in connection with, the Licensed Action;
  - 18.3. effectively investigate, monitor and report on water being polluted as a result of, or in connection with, the Licensed Action;
  - 18.4. effectively investigate, monitor and report on environmental harm and the risk of environmental harm occurring as a result of or in connection with the Licensed Action; and
  - 18.5. apply the principles of ecologically sustainable development.
19. The licensee must, without limiting any other condition of this licence, in conducting the Licensed Action do all things reasonable and practicable to minimise adverse effects to any:
- 19.1. declared beneficial use, quality, standard or objectives declared under section 73 of the Water Act;
  - 19.2. sites of conservation significance; or
  - 19.3. designated Ramsar wetlands,
- including, but not limited to, those specified in Items 1, 2 and 3.

### DISCHARGES

20. The licensee must only discharge waste to water from the authorised discharge points specified in Item 5.

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21. Discharges from each authorised discharge point must:
  - 21.1. consist only of waste from the source(s) specified in Item 6;
  - 21.2. not exceed the trigger value limits specified in Item 7 at the compliance point specified in Item 8; and
  - 21.3. comply with the limitations specified in Item 9.
22. The licensee must, for each authorised discharge point, install, operate and maintain a device to measure and record, for each discharge event:
  - 22.1. the time the discharge commenced and the duration of the discharge;
  - 22.2. the discharge rate of flow; and
  - 22.3. the discharge volume.
23. Discharges from each authorised discharge point must not:
  - 23.1. contain any floating debris, oil, grease, petroleum hydrocarbon sheen, scum, litter or other objectionable matter;
  - 23.2. cause or generate odours which would adversely affect the use and amenity of surrounding waters;
  - 23.3. cause algal blooms in the receiving water;
  - 23.4. pollute groundwater;
  - 23.5. cause visible change in the behaviour of fish or other aquatic organisms in the receiving water;
  - 23.6. cause mortality of fish or other aquatic organisms;
  - 23.7. cause erosion or degradation to the beds and banks of a watercourse; or
  - 23.8. cause adverse impacts on plants or animals.

### INVESTIGATIONS AND NOTIFICATIONS

24. Following any exceedance of a trigger value limit specified in Item 7 at the compliance point specified in Item 8, the licensee must:
  - 24.1. investigate the exceedance, including undertaking targeted monitoring, in addition to routine monitoring; and
  - 24.2. take corrective action to mitigate any environmental harm and ensure the exceedance does not reoccur; and
  - 24.3. make a record of:
    - 24.3.1. when the exceedance was detected and by whom;
    - 24.3.2. the date and time of the exceedance;
    - 24.3.3. the actual and potential causes and contributing factors to the exceedance;
    - 24.3.4. the risk of environmental harm arising from the exceedance;
    - 24.3.5. exceedances and details of the investigation and corrective action taken; and
    - 24.3.6. if no action was taken, why no action was taken.
25. If one of the incidents specified in Item 10 occurs, the licensee must notify the Administering Agency by emailing [environmentalregulation@nt.gov.au](mailto:environmentalregulation@nt.gov.au) as soon as practicable after (and in any case within 24 hours after) first becoming aware of the incident, including the following information:
  - 25.1. when the incident was detected and by whom;
  - 25.2. the date and time of the incident;

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- 25.3. whether discharge was occurring at the time of the incident and the source of the discharge;
  - 25.4. whether discharge is still occurring; and
  - 25.5. a date (within 10 business days of the incident) when an investigation report will be submitted to the Administering Agency.
26. Within 10 business days of notifying the Administering Agency of an incident specified in Item 10, the licensee must provide the Administering Agency an investigation report that includes:
- 26.1. when the incident was detected and by whom;
  - 26.2. the date and time of the incident;
  - 26.3. whether discharge was occurring at the time of the incident and the source of the discharge;
  - 26.4. the actual and potential causes and contributing factors to the incident;
  - 26.5. monitoring data of the discharge, and upstream and downstream water of the incident, collected for the date the incident was detected and three sampling rounds prior;
  - 26.6. available flow rates to demonstrate any influence streams and rivers may have had on the incident;
  - 26.7. rainfall recorded at the site prior to the incident;
  - 26.8. the risk of environmental harm arising from the incident;
  - 26.9. the action(s) that have or will be undertaken to mitigate any environmental harm arising from the incident;
  - 26.10. corrective actions that have or will be undertaken to ensure the incident does not reoccur; and
  - 26.11. if no action was taken, why no action was taken.

### MONITORING

27. From the Commencement Date of this licence, the licensee must implement and comply with the Monitoring Program specified in Item 11.
28. The licensee must to the extent practicable collect samples that are representative of discharge conditions that maximises the ability to detect potential impact from the Licenced Action, including collecting samples at sampling points.
29. In implementing the Monitoring Program the licensee must to the extent practicable that samples collected at the sampling points are collected:
  - 29.1. on the same date as discharge event; and
  - 29.2. from the part of the waterway that provides representative (well mixed) samples.
30. If a sample is missed or cannot be collected at a sampling point at a frequency set in the Monitoring Program for any reason, the licensee must revisit the sampling point to collect a sample as soon as possible after the missed collection.
31. The licensee must ensure that all samples and field environmental data are collected in accordance with recognised Australian Standards and guidelines (such as AS/NZS 5667.1 1998, ANZG (2018), as updated from time to time).
32. For the parameters that require analysis at a laboratory, the licensee must ensure that:
  - 32.1. all samples are analysed at a laboratory with current NATA accreditation or equivalent for the relevant parameters; and
  - 32.2. detection and reporting limits are appropriate to determine compliance with this licence.
33. The licensee must ensure any samples collected in accordance with the Monitoring Program or in connection with the Licensed Action or this licence, are obtained by, or under the supervision of a qualified sampler.

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34. The licensee must ensure any plant and equipment used by the licensee in conducting the Monitoring Program:
  - 34.1. is reasonably fit for the purpose and use to which it is put, including that it is properly calibrated;
  - 34.2. is maintained and operational; and
  - 34.3. is operated by a person trained to use the plant and equipment.
35. The licensee must ensure that, for each sample collected in accordance with the Monitoring Program or the Licensed Action, the following information must be recorded and retained:
  - 35.1. the date on which the sample was collected;
  - 35.2. the time at which the sample was collected;
  - 35.3. the location at which the sample was collected;
  - 35.4. the name of the person who collected the sample;
  - 35.5. the chain of custody forms relating to the sample;
  - 35.6. the field measurements (if any) and analytical results (if any) relating to the sample; and
  - 35.7. laboratory quality assurance and quality control documentation.
36. The licensee must for all land based monitoring points specified in the Monitoring Program:
  - 36.1. install and maintain appropriate identification signage so that they are reasonably identifiable at all times; and
  - 36.2. maintain safe access and egress, as is reasonably practicable.

### RECORDING AND REPORTING

37. The licensee must keep records of all contraventions with this licence. These records must be adequate to enable the licensee to comply with the notification and reporting conditions of this licence.
38. The licensee must submit a completed Annual Return, by emailing [environmentalregulation@nt.gov.au](mailto:environmentalregulation@nt.gov.au) as specified in Item 12.
39. The licensee must complete and provide to the Administering Agency a report of data and information obtained through the implementation and performance of the Monitoring Program (the Monitoring Report), as prescribed by this licence, on the dates specified in Item 13.
40. The licensee must ensure that each Monitoring Report:
  - 40.1. is prepared in accordance with the requirements of the Administering Agency 'Guideline for Reporting on Environmental Monitoring' (or any other guideline as adopted by the Administering Agency from time to time);
  - 40.2. includes a tabulation, in Microsoft® Excel® format or another format requested by the Administering Agency, of all monitoring data required to be collected in accordance with this licence for the preceding 12 month period;
  - 40.3. includes a tabulation of monthly and annual contaminant loads discharged from the authorised discharge point specified in Item 5 for the preceding 12 month period. Contaminant loads must be calculated for metals, metalloids, nutrients and other parameters (excluding field parameters) listed in the monitoring program specified in Item 11. The calculations must be based on the daily discharge volume and the concentration of contaminant present in the discharge on that day. On the days when a sample was not taken then the concentration of the contaminant must be estimated using Linear Interpolation methodology;
  - 40.4. includes long term trend analysis of monitoring data to demonstrate any environmental impact associated with the Licensed Action over a minimum period of three years (of part thereof);

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- 40.5. includes a summary of any investigations undertaken by the licensee in accordance with this licence for the preceding 12 month period; and
- 40.6. includes an assessment of environmental impact from the Licensed Action.
- 41. If the licence expires or is otherwise surrendered, suspended or revoked and the licence contained a condition that the licensee provide a notice, report, record or other information after that date, the licensee must provide any report, record, information or data available to the licensee up to and including the date the licence expired or was surrendered, suspended or revoked.
- 42. A copy of the documents listed specified in Item 14 will be placed on the Register.

### **SPECIAL CONDITIONS**

- 43. The licensee must comply with the conditions specified in Item 15.

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**END OF LICENCE CONDITIONS**

This licence is not valid unless signed below:

A handwritten signature in black ink, appearing to read 'Joanne Townsend', is written over a horizontal line.

JOANNE TOWNSEND

Controller of Water Resources

Dated the 22 FEBRUARY 2023

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### DEFINITIONS

In this licence, unless a contrary intention appears:

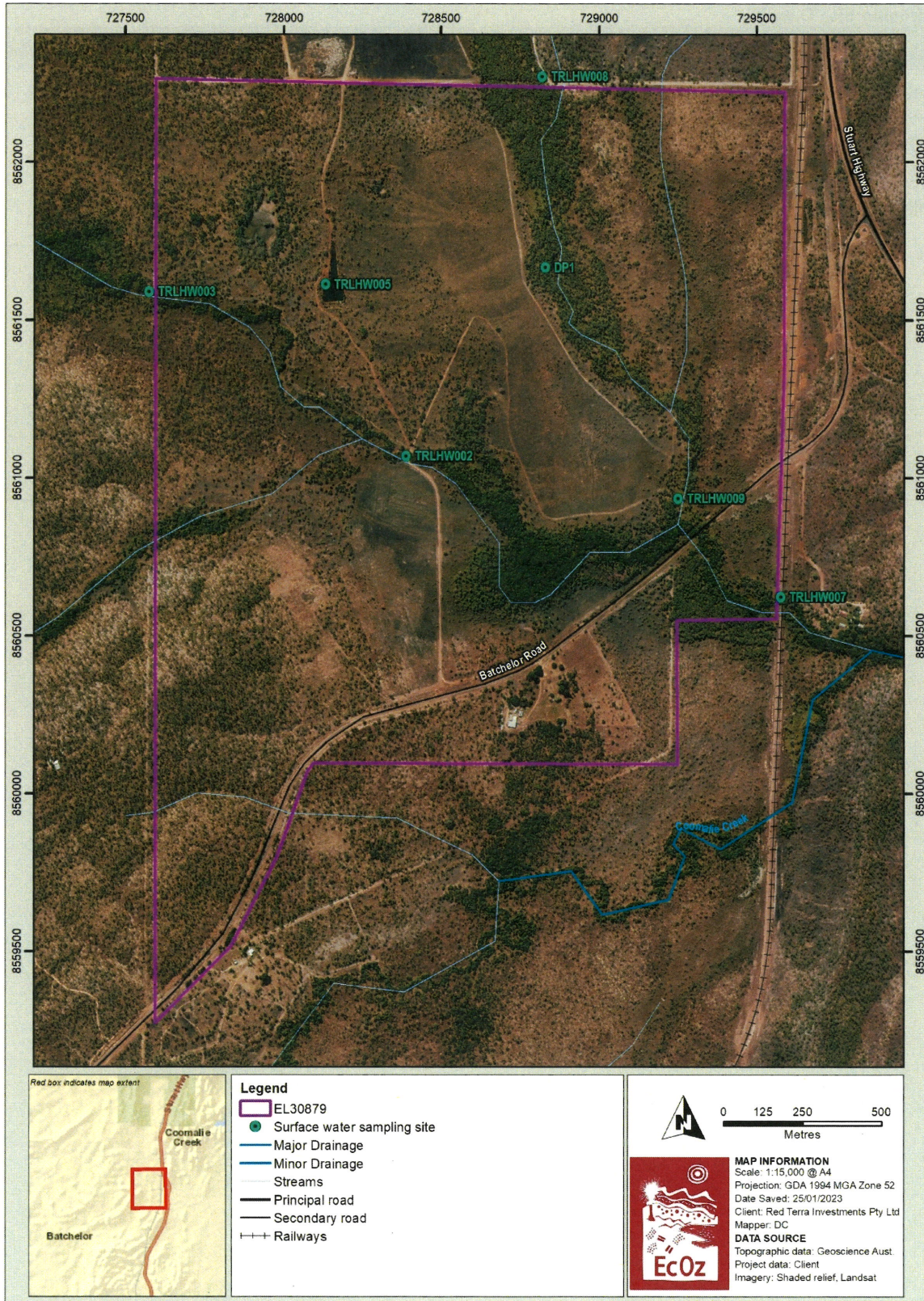
Term	Definition
24 hour emergency contact	the phone number of a person who can be contacted at any time and be capable of responding to and providing information about any incident associated with the Licensed Action.
Administering Agency	means the NT Government Department with responsibility for administering the Water Act.
Anniversary Date	annual anniversary of the Commencement Date.
Annual Return	an Administering Agency prescribed format for demonstrating and reporting compliance with the conditions of this licence.
ANZG (2018)	Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia. Available at <a href="http://www.waterquality.gov.au/anz-guidelines">http://www.waterquality.gov.au/anz-guidelines</a> .
business days	a day not Saturday, Sunday or a public holiday, in Darwin, Northern Territory.
Consultation and Communication Plan	a written plan documenting proposed consultation and communications for the Licensed Action before, during and after the Licensed Action which includes a strategy for communicating with members of the public who are likely to have a real interest in, or be affected by, the Licensed Action.
contact details	includes the 24 hour emergency contact, and name, position title and phone number of a representative of the licensee who can be contacted about the licence and Licensed Action.
discharge	releasing or allowing a liquid, gas or other substance to flow out from where it has been confined.
Dry season	means 1 May to 31 October.
Emergency Response Plan	a written plan documenting the licensee's procedures for responding to emergencies caused by, resulting from or associated with the Licensed Action and that may cause environmental harm.
Licensed Action	the Licensed Action as described on the covering page of this licence.
Linear Interpolation	<p>a method to construct new data points within the range of known data points.</p> $y = y1 + ((x - x1) * ((y2 - y1) / (x2 - x1)))$ <p>y is the unknown concentration between known concentrations y1 and y2 y1 is the first known concentration y2 is the second known concentration x is the day of the unknown concentration y x1 is the day of the first known concentration y1 x2 is the day of the second known concentration y2</p>
litter	litter, garbage, rubbish, refuse or waste matter, and includes the body of a dead animal.
NATA	National Association of Testing Authorities, Australia.

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<b>Term</b>	<b>Definition</b>
plant and equipment	all material items used in association with the Licensed Action, including (but not limited to) storage vessels and containers, pipe work and hosing, vehicles (including vessels), tools, and measuring equipment.
pollution	has the same meaning as <i>pollute</i> as defined in 4 of the Water Act.
public entrance	access to the licensed premises that is utilised by the public.
qualified sampler	a person who has training and experience in obtaining samples from the relevant environmental medium.
Register	the register available at the website of the Northern Territory Environment Protection Authority (NT EPA).
wastewater	water that contains a waste.
Water Act	<i>Water Act 1992</i> (NT).
Wet season	means 1 November to 30 April.

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## APPENDIX 1: Site Plan



Path: Z:\01 EcOz\_Documents\04 EcOz Vantage\GIS\EZ22236 - Huandot Magnesite Project Stage 1 Approvals\1 Project Files\2\_Report Maps\Surface water sampling sites.mxd

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### APPENDIX 2: Monitoring Program

Table 1. Monitoring Site Details

Type	Code	Description	Latitude	Longitude
Source Location	TRLHW005	Huandot Pit	-13.002784	131.103339
Authorised Discharge Point	DP1	Discharge outlet to Paperbark Creek	-13.002248	131.109756
Environmental Monitoring Points	TRLHW008	Paperbark Creek upstream of discharge	-12.996798	131.109609
	TRLHW009	Paperbark Creek 850 m downstream of discharge	-13.008832	131.113735
	TRLHW003	Coomalie Creek upstream of project area	-13.00304	131.098205
	TRLHW002	Coomalie Creek downstream of project area	-13.007684	131.105769
Compliance Point	TRLHW007	Coomalie Creek at mining lease boundary	-13.011629	131.116746

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Table 2. Monitoring Program

		Site Type	Huandot Pit	Monitoring Points					Compliance Point	
		Site Code	TRLHW005	DP1	TRLHW008	TRLHW009	TRLHW003	TRLHW002	TRLHW007	Trigger values*
Parameter	Unit	Analysis	Frequency							
<b>Field Parameters</b>										
Flow	kL/day	In situ		C	D	D	W	W	D	N/A
Temperature	°C		P	D	D	D	W	W	D	N/A
pH	units		P	D	D	D	W	W	D	6-7.5
Electrical conductivity	µS/cm		P	D	D	D	W	W	D	250 <sup>a</sup>
Dissolved oxygen	% sat		P	D	D	D	W	W	D	90-120
Turbidity	NTU		P	D	D	D	W	W	D	15 <sup>a</sup>
<b>Nutrients</b>										
Ammonia (NH <sub>3</sub> )	mg/L	Filtered (0.45 µm)	P	D	D	D	W	W	D	0.006 <sup>a</sup>
Nitrite + Nitrate (NO <sub>x</sub> )			P	D	D	D	W	W	D	0.030
Filterable Reactive Phosphorus (FRP)			P	D	D	D	W	W	D	0.005
Total nitrogen (TN)	mg/L	Unfiltered	P	D	D	D	W	W	D	0.150
Total phosphorus (TP)			P	D	D	D	W	W	D	0.010
<b>Metals and Metalloids</b>										
Aluminium (Al)	µg/L	Total and Filtered (0.45 µm)	P	D	D	D	W	W	D	55
Arsenic (As)			P	D	D	D	W	W	D	13
Cadmium (Cd)			P	D	D	D	W	W	D	0.2
Cobalt (Co)			P	D	D	D	W	W	D	1.4
Chromium (Cr)			P	D	D	D	W	W	D	1
Copper (Cu)			P	D	D	D	W	W	D	1.4
Iron (Fe)			P	D	D	D	W	W	D	N/A
Mercury (Hg)			P	D	D	D	W	W	D	0.6
Nickel (Ni)			P	D	D	D	W	W	D	11
Zinc (Zn)			P	D	D	D	W	W	D	8
<b>Hydrocarbons</b>										
Total Petroleum Hydrocarbons (TPH)	µg/L	Total								
C6-C9			P	D	D	D	W	W	D	10
C10-C36 (sum)			P	D	D	D	W	W	D	50
Total Recoverable Hydrocarbons (TRH)										
C6-C10			P	D	D	D	W	W	D	10
>C10-C40 (sum)			P	D	D	D	W	W	D	50

## WASTE DISCHARGE LICENCE (WDL250)

		Site Type	Huandot Pit	Monitoring Points					Compliance Point	
		Site Code	TRLHW005	DP1	TRLHW008	TRLHW009	TRLHW003	TRLHW002	TRLHW007	Trigger values*
Parameter	Unit	Analysis	Frequency							
<b>BTEXN</b>										
Benzene	µg/L	Total	P	D	D	D	W	W	D	1
Toluene			P	D	D	D	W	W	D	1
Ethylbenzene			P	D	D	D	W	W	D	1
Ortho-Xylene			P	D	D	D	W	W	D	1
Meta-Xylene			P	D	D	D	W	W	D	2
Para-Xylene			P	D	D	D	W	W	D	2
Naphthaline			P	D	D	D	W	W	D	1
<b>Major ions</b>										
Sulfate (SO <sub>4</sub> )	mg/L	Unfiltered	P	D	D	D	W	W	D	N/A
Chloride (Cl)			P	D	D	D	W	W	D	N/A
Alkalinity			P	D	D	D	W	W	D	N/A
Calcium (Ca)			P	D	D	D	W	W	D	N/A
Magnesium (Mg)			P	D	D	D	W	W	D	N/A
Sodium (Na)			P	D	D	D	W	W	D	N/A
Potassium (K)			P	D	D	D	W	W	D	N/A
Total Dissolved Solids (TDS)			P	D	D	D	W	W	D	N/A

**Key:**

P = within 24 hours prior to commencement of discharge

C = continuous

D = within 24 hours of commencement of discharge **and** daily during discharge.

W = within 24 hours of discharge **and** weekly during discharge.

N/A = not applicable.

\*Trigger values are based on ANZG (2018) default guideline values for toxicants (95% species protection) and ANZECC (2000) guideline values for physical and chemical stressors in tropical ecosystems. Hydrocarbon trigger values are based on laboratory detection limits as per Appendix F of Huandot Magnesite Project WDL Supporting Information.

<sup>a</sup> when water quality upstream at TRLHW0003 exceeds the trigger value at time of sampling, the concentration at TRLHW003 can be used to assess compliance.