

## WASTE DISCHARGE LICENCE

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

**Licensee** NT Mining Operations Pty Ltd

**Licence Number:** **WDL180-08**

Registered Business Address: Level 33, 101 Collins Street  
Melbourne VIC 3000

ACN: 136 525 990

ABN: 64 136 525 990

Commencement Date: 22 February 2023

Amendment Date: 5 April 2023

Expiry Date: 21 February 2033

**Licensed Action:** The controlled discharge of treated, mine-influenced water from the Cosmo Howley Project Area into Howley Creek, via the authorised discharge points and subject to the conditions of this licence.

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## WASTE DISCHARGE LICENCE (WDL180-08)

### 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**

This licence is an amendment and supersedes WDL180-07 which was issued on 22 February 2023.

The WDL180 series of licences pertaining to Cosmo Howley Project Area was first issued on 12 January 2011 (WDL180).

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### SCHEDULE 1 - ITEMS

Item	Detail	
<b>1. Beneficial uses (condition 19)</b>	Declaration of Water Quality Objectives for Howley Creek (Gazette No. 23, 11/6/1997) – Aquatic Ecosystem Protection  Declaration of Beneficial Uses for the Daly Roper Beetaloo Water Control District (Gazette No. 15, 10/4/2019)	
<b>2. Sites of conservation significance (condition 19)</b>	Not applicable	
<b>3. Ramsar wetlands (condition 19)</b>	Not applicable	
<b>4. Licence Documents (condition 13)</b>	(a) Environmental Emergency Response Management Plan. (b) Standard Operating Procedure NTMO-ES-SOP052 (Discharge Management). (c) NTMO CHPA Biological Monitoring Plan 2022-2025.	
<b>5. Authorised Discharge Point(s) (condition 20)</b>	AD1 from Dam 3, as shown on the map at Appendix 1.	Latitude: -13.498003° Longitude: 131.367991°
	AD2 from Howley West Pit as shown on the map at Appendix 1	Latitude: -13.520264° Longitude: 131.364443°
<b>6. Source(s) of waste (condition 21)</b>	AD1: Dam 3 receives pit water pumped from Mottram and Chinese 2 pits via Dam 2 and seepage from Mottram's WRD via Dam 7. AD2: receives treated waste water from Howley West Pit.	
<b>7. Trigger values (condition 21)</b>	The limits for parameters listed in Appendix 2.	
<b>8. Compliance point(s) (condition 21)</b>	CHCK06 (Howley Creek) as shown on the plan at Appendix 1.	Latitude: -13.468583° Longitude: 131.352699°
	CHCK04A (unnamed tributary to Hayes Creek), as shown on the plan at Appendix 1.	Latitude: -13.544365° Longitude: 131.378386°
<b>9. Limitations on discharge (condition 21)</b>	Any authorised discharge must: <ul style="list-style-type: none"> <li>(a) occur only when the stream gauge data at CHCK01 and CHCK05 indicate there is sufficient flow to dilute discharge water to achieve trigger values at the compliance point; and</li> <li>(b) in the event wastewater is treated, occur only when the treatment process has finished, including allowing sufficient residence time for settlement of flocculants and target contaminants.</li> </ul>	

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Item	Detail
<b>10. Notifiable incidents (conditions 25 and 26)</b>	<ul style="list-style-type: none"> <li>(a) An exceedance of a trigger value of a limit specified in Item 7 at either of the compliance points in Item 8, on three consecutive sampling occasions;</li> <li>(b) A measurement outside the range for pH or DO specified in Item 7 at either of the compliance points in Item 8, on three consecutive sampling occasions;</li> <li>(c) An exceedance of three or more times a trigger value specified in Item 7 at either of the compliance points in Item 8;</li> <li>(d) A discharge at a point not specified in Item 5;</li> <li>(e) A discharge from a source not specified in Item 6; or</li> <li>(f) A failure to comply with condition 23.</li> </ul>
<b>11. Monitoring Program (condition 27)</b>	<p>The Monitoring Program includes:</p> <ul style="list-style-type: none"> <li>(a) Surface water monitoring in accordance with Appendix 2; and</li> <li>(b) Macroinvertebrate, sediment and ecotoxicological monitoring in accordance with NTMO CHPA Biological Monitoring Plan 2022 at Item 4.</li> </ul>
<b>12. Annual Return (condition 38)</b>	<p>The Annual Return is due on 30 June each year for the period 1 June to 31 May during the term (or part thereof).</p>
<b>13. Monitoring Report (condition 39)</b>	<p>The Monitoring Report is due on:</p> <ul style="list-style-type: none"> <li>(a) 30 June each year for the preceding period 1 June to 31 May; and</li> <li>(b) in the event the Licensee applies to renew the licence, 90 days prior to the Expiry Date.</li> </ul>
<b>14. Documents placed on Register (condition 42)</b>	<p>The following documents will be placed on the Register:</p> <ul style="list-style-type: none"> <li>(a) The Licence Documents specified in Item 4;</li> <li>(b) The Monitoring Report provided in accordance with condition 39; and</li> <li>(c) The Annual Return provided in accordance with condition 38.</li> </ul>

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Item	Detail
<b>15. Special conditions (condition 43)</b>	<p>The Licensee must comply with the following conditions:</p> <p>15.1 The Licensee must review the licence documents at Item 4 at least every 2 years. Amended documents must be provided to the Administering Agency within 10 business days of the anniversary date of this licence and in accordance with condition 14.</p> <p>15.2 The Licensee must provide to the Administering Agency an annual <b>Source Identification Report</b> by 30 April each year, to determine the contributions of different sources to the total contaminant load at the compliance points. The report must include:</p> <ul style="list-style-type: none"> <li>(a) A description of all sources of contaminants from authorised and unauthorised discharges from the premises of the Licensed Action; and</li> <li>(b) An estimate of the contribution of each source to the total contaminant load originating from the premises of the Licensed Action; and</li> <li>(c) A detailed description of methods used to determine runoff volumes and calculate estimated contaminant loads; and</li> <li>(d) analysis and interpretation of current year findings; and</li> <li>(e) analysis and interpretation of long-term trends and changes in sources and their contributions to total contaminant loads; and</li> <li>(f) existing and proposed management of unauthorised discharges of waste water leaving the premises of the Licensed Action.</li> </ul> <p>15.3 The Licensee must submit to the Administering Agency a <b>Monthly Discharge Report</b> for any month when a discharge occurs, in accordance with the conditions of this licence, to <a href="mailto:environmentalregulation@nt.gov.au">environmentalregulation@nt.gov.au</a>. The Monthly Discharge Report is due by the 15th day (or nearest business day) of the following month and must include;</p> <ul style="list-style-type: none"> <li>(g) the start and end date and time of each authorised discharge event in that month;</li> <li>(h) reason for cessation of each discharge event;</li> <li>(i) source of water discharged during each discharge event;</li> <li>(j) flow data, discharge volumes and pump operating times for each discharge event;</li> <li>(k) water quality data for all authorised discharge points, sources of treated waste water and all monitoring points specified in this licence for the particular month;</li> <li>(l) management actions taken in the event of a trigger value exceedance at the compliance points at Item 8.</li> </ul>



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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 by emailing details of changes to [environmentalregulation@nt.gov.au](mailto:environmentalregulation@nt.gov.au).
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

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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:

- 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.

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### **DISCHARGES**

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

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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;
  - 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 premises of the Licensed Action 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 ensure 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:

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- 32.1. all samples are analysed at a laboratory with current NATA accreditation or equivalent; 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.
- 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 points 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

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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);
  - 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:



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Amy Dennison

Executive Director, Environmental Regulation

For the Controller of Water Resources

Dated: 24 April 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.



## WASTE DISCHARGE LICENCE (WDL180-08)

Term	Definition
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.
WRD	Waste rock dump

APPENDIX 1: Map of Discharge Points, Compliance Points and Monitoring Points



Figure 1. Cosmo Howley Project Area. Location of Authorised Discharge Points (red), Compliance Points (green) and Monitoring Points (blue). (Imagery: nearmap 2023)

## WASTE DISCHARGE LICENCE (WDL180-08)

### APPENDIX 2: SURFACE WATER MONITORING PROGRAM

**Table A1. Monitoring site details**

Type	Site Code	Location Description	Catchment	Latitude	Longitude
<b>Compliance Point</b>	CHCK06	Howley Creek, downstream of CHPA discharges	Adelaide River	-13.468583	131.352699
<b>Compliance Point</b>	CHCK04A	Creek 4 at Dorat Rd Crossing	Daly River	-13.544365	131.378386
Environmental monitoring point (reference site)	CHCK01	Howley Creek upstream of mine influence	Adelaide River	-13.493594	131.457174
Environmental monitoring point	CHCK02	Creek 2 downstream Stuart Highway crossing	Adelaide River	-13.506025	131.381524
Environmental monitoring point	CHCK03	Creek 3 downstream Stuart Highway crossing	Adelaide River	-13.524688	131.399919
Environmental monitoring point	CHCK05	Creek 5 downstream Stuart Highway crossing	Adelaide River	-13.493822	131.371625
Environmental monitoring point	MTSW02	Unnamed creek downstream Stuart Highway crossing	Adelaide River	-13.477405	131.358122
<b>Authorised Discharge Point</b>	AD1	Captures Dam 3 siphon discharge before other inputs	Adelaide River	-13.498003	131.367991
<b>Authorised Discharge Point</b>	AD2/RM1	Creek 5 Discharge Outlet (tap on side of pipe) treated water from Howley West Pit.	Adelaide River	-13.520264	131.364443
On-site Monitoring Point	RM3-NEW	Captures seepage from old MWD area and capped Tailings Dam	Adelaide River	-13.527895	131.369041
On-site Monitoring Point	RM4-NEW	Captures seepage from old MWD area	Adelaide River	-13.525184	131.371657
On-site Monitoring Point	RM5-NEW	Captures surface water runoff from Cosmo WRD	Adelaide River	-13.525749	131.378135
On-site Monitoring Point	RM6	Captures seepage from Acid Pond 4	Adelaide River	-13.532003	131.387997
On-site Monitoring Point	RM7	Captures seepage from Acid Pond 1	Adelaide River	-13.536006	131.388000
On-site Monitoring Point	RM8	On Mining Lease boundary between CHCK04A and CHCK04C	Daly River	-13.547007	131.377997
On-site Monitoring Point	DAM 3	Storage Dam	Adelaide River	-13.499686	131.365921

# WASTE DISCHARGE LICENCE (WDL180-08)

**Table A2. Environmental water quality monitoring requirements (Receiving Environment)**

Sample Locations			Hayes Creek		Howley Creek							
Site Code			CHCK04A		CHCK01#	CHCK02	CHCK03	CHCK05	MTSW02	CHCK06#		
Parameter	Units	Analysis Type	Frequency	SSTV	Monitoring Frequency						SSTV	
Field Measurements												
Flow	kL/day	In situ	W	ND	W	W	W	W	W	D	ND	
Water Level	m		W	ND	W	W	W	W	W	D	ND	
pH	pH units		W	6.0 – 8.0 <sup>1</sup>	W	W	W	W	W	D	6.0 – 8.0 <sup>1</sup>	
Electrical Conductivity (EC)	µS/cm		W	250 <sup>1</sup>	W	W	W	W	W	D	700 <sup>4</sup>	
Dissolved Oxygen (DO)	% saturation		W	90-120 <sup>1</sup>	W	W	W	W	W	D	45-120 <sup>4</sup>	
Temperature	°C		W	ND	W	W	W	W	W	D	ND	
Dissolved Metals												
Aluminium (Al)	µg/L	Filtered 0.45 µm	F^	150 <sup>3</sup>	F^	F^	F^	F^	F^	F^	196 <sup>4</sup>	
Arsenic (As)			F^	140 <sup>3</sup>	F^	F^	F^	F^	F^	F^	42 <sup>2</sup>	
Cadmium (Cd)			F^	0.8 <sup>3</sup>	F^	F^	F^	F^	F^	F^	0.4 <sup>2</sup>	
Chromium (Cr)			F^	40 <sup>3</sup>	F^	F^	F^	F^	F^	F^	6 <sup>2</sup>	
Cobalt (Co)			F^	13 <sup>3</sup>	F^	F^	F^	F^	F^	F^	13 <sup>2</sup>	
Copper (Cu)			F^	2.5 <sup>3</sup>	F^	F^	F^	F^	F^	F^	1.8 <sup>2</sup>	
Iron (Fe)			F^	300 <sup>2</sup>	F^	F^	F^	F^	F^	F^	428 <sup>4</sup>	
Lead (Pd)			F^	9.4 <sup>3</sup>	F^	F^	F^	F^	F^	F^	5.6 <sup>2</sup>	
Manganese (Mn)			F^	3600 <sup>3</sup>	F^	F^	F^	F^	F^	F^	2500 <sup>2</sup>	
Nickel (Ni)			F^	17 <sup>3</sup>	F^	F^	F^	F^	F^	F^	13 <sup>2</sup>	
Selenium (Se)			F^	34 <sup>3</sup>	F^	F^	F^	F^	F^	F^	18 <sup>2</sup>	
Uranium (U)			F^	ND	F^	F^	F^	F^	F^	F^	ND	
Zinc (Zn)			F^	31 <sup>3</sup>	F^	F^	F^	F^	F^	F^	15 <sup>2</sup>	
General Chemistry												
Turbidity	NTU	unfiltered	F^	15 <sup>1</sup>	F^	F^	F^	F^	F^	F^	32 <sup>4</sup>	
Total Suspended Solids (TSS)	mg/L		F^	ND	F^	F^	F^	F^	F^	F^	28 <sup>4</sup>	
Total Dissolved Solids (TDS)	mg/L		F^	ND	F^	F^	F^	F^	F^	F^	ND	
Hardness	(as CaCO <sub>3</sub> )		F^	ND	F^	F^	F^	F^	F^	F^	ND	
Carbonate (CO <sub>3</sub> )	mg/L		F^	ND	F^	F^	F^	F^	F^	F^	ND	
Bicarbonate (HCO <sub>3</sub> )			F^	ND	F^	F^	F^	F^	F^	F^	ND	
Unfiltered Alkalinity (as CaCO <sub>3</sub> )			F^	ND	F^	F^	F^	F^	F^	F^	ND	
Calcium (Ca)			F^	ND	F^	F^	F^	F^	F^	F^	ND	
Magnesium (Mg)			F^	ND	F^	F^	F^	F^	F^	F^	ND	
Potassium (K)			F^	ND	F^	F^	F^	F^	F^	F^	ND	
Sodium (Na)			F^	ND	F^	F^	F^	F^	F^	F^	ND	
Chloride (Cl <sup>-</sup> )			F^	13	F^	F^	F^	F^	F^	F^	6 <sup>4</sup>	
Sulphate (SO <sub>4</sub> )			F^	ND	F^	F^	F^	F^	F^	F^	408 <sup>4</sup>	
Nutrients												
Total Nitrogen (TN)	µg/L	Unfiltered	F^	350 <sup>1</sup>	F^	F^	F^	F^	F^	F^	350 <sup>1</sup>	
Total Phosphorus (TP)			F^	10 <sup>1</sup>	F^	F^	F^	F^	F^	F^	10 <sup>1</sup>	
Total Organic Carbon (TOC)	mg/L		F^	ND	F^	F^	F^	F^	F^	F^	ND	
Further Requirements: when a discharge occurs via a discharge point identified in Table 2 or Table 3, samples must be collected weekly and at least once per discharge at all monitoring points where discharges will pass, and from CHCK06 and CHCK01. These samples must be analysed for field measurements, dissolved metals and general chemistry.												

## WASTE DISCHARGE LICENCE (WDL180-08)

Sample Locations			Hayes Creek		Howley Creek					
Site Code			CHCK04A		CHCK01#	CHCK02	CHCK03	CHCK05	MTSW02	CHCK06#
Parameter	Units	Analysis Type	Frequency	SSTV	Monitoring Frequency					SSTV
<p><b>Key</b>  <b>D</b> – Daily when creek is flowing  <b>W</b> – Weekly when creek is flowing  <b>F</b> – Fortnightly when creek is flowing and then monthly after cessation of flow.  <b>A</b> – Once annually during wet season.</p> <p><b>^</b> Weekly when discharging and at least once per discharge event  <b>#</b> CHCK01 and CHCK06 must be sampled on the same day, when sampling is required.</p> <p><sup>1</sup>Default ANZECC Trigger Values for Freshwater Upland and Lowland Rivers  <sup>2</sup>Default ANZG trigger value for 90% species protection  <sup>3</sup>Default ANZG trigger value for 80% species protection  <sup>4</sup> Site Specific Trigger Values as provided in the Cosmo Howley and Brocks Creek WDL-04 Report 2017.            *Canadian Guideline adopted by ANZECC (2000)  <b>ND</b> – Not Determined</p> <p><i>Note: Hardness correction factor may be applied on a per sample basis and in accordance with ANZG 2018 guidelines for cadmium, chromium, lead, nickel and zinc. Hardness correction may also be applied to sulphate in accordance with DITT requirements outlined in the NTMO CHPA WMP 2017-1018 - Final</i></p>										

# WASTE DISCHARGE LICENCE (WDL180-08)

**Table A3. On-site water quality monitoring requirements**

Site Code			Sample Locations									
			RM1 (=CHCK05)	RM2 (=AD1)	RM3	RM4	RM5	RM6	RM7	RM8	Dam3	AD2
Parameter	Units	Analysis Type	Monitoring Frequency									
Field Measurements												
Flow	kL/day	In situ	W	W	W	W	W	W	W	W	W	D
Water Level	m		W	W	W	W	W	W	W	W	W	D
pH	pH units		W	W	W	W	W	W	W	W	W	D
Electrical Conductivity (EC)	µS/cm		W	W	W	W	W	W	W	W	W	D
Dissolved Oxygen (DO)	% saturation		W	W	W	W	W	W	W	W	W	D
Temperature	°C		W	W	W	W	W	W	W	W	W	D
Dissolved Metals												
Aluminium (Al)	µg/L	Total and filtered 0.45 µm	F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Arsenic (As)			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Cadmium (Cd)			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Chromium (Cr)			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Cobalt (Co)			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Copper (Cu)			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Iron (Fe)			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Lead (Pd)			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Manganese (Mn)			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Nickel (Ni)			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Selenium (Se)			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Uranium (U)			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Zinc (Zn)	F^	F^	F^	F^	F^	F^	F^	F^	F^	F^		
General Chemistry												
Turbidity	NTU	unfiltered	F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Total Suspended Solids (TSS)	mg/L		F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Total Dissolved Solids (TDS)			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Hardness (as CaCO <sub>3</sub> )			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Carbonate (CO <sub>3</sub> )			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Bicarbonate (HCO <sub>3</sub> )			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Unfiltered Alkalinity (as CaCO <sub>3</sub> )			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Calcium (Ca)			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Magnesium (Mg)			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Potassium (K)			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Sodium (Na)			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Chloride (Cl)			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Sulphate (SO <sub>4</sub> )			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Nutrients												
Total Nitrogen (TN)	µg/L	Unfiltered	F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Total Phosphorus (TP)			F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Total Organic Carbon (TOC)	mg/L		F^	F^	F^	F^	F^	F^	F^	F^	F^	F^
Further Requirements: when a discharge occurs via a discharge point identified in Table 2 or Table 3, samples must be collected weekly and at least once per discharge at all monitoring points where discharges will pass, and from CHCK06 and CHCK01. These Samples must be analysed for field measurements, dissolved metals and major chemistry.												
Key D – Daily when creek is flowing W – Weekly when creek is flowing												

## WASTE DISCHARGE LICENCE (WDL180-08)

Site Code			Sample Locations								
			RM1 (=CHCK05)	RM2 (=AD1)	RM3	RM4	RM5	RM6	RM7	RM8	Dam3
Parameter	Units	Analysis Type	Monitoring Frequency								
<p><b>F</b> – Fortnightly when creek is flowing and then monthly after cessation of flow. <b>A</b> – Once annually during wet season.</p> <p>^ Weekly when discharging and at least once per discharge event</p> <p><i>Note: Hardness correction factor may be applied on a per sample basis and in accordance with ANZG 2018 guidelines for cadmium, chromium, lead, nickel and zinc. Hardness correction may also be applied to sulphate in accordance with DITT requirements outlined in the NTMO CHPA WMP 2017-1018 - Final</i></p>											



## WASTE DISCHARGE LICENCE (WDL180-08)

### APPENDIX 3: Biological, Sediment and Ecotoxicology Monitoring

Biological, sediment and ecotoxicology monitoring must be conducted according to the NTMO CHPA Biological Monitoring Plan 2022 (Schedule 1, Item 4). Table A4 provides a summary of requirements.

Sediment quality must be analysed using the < 2 mm fraction of sediment samples. Organic carbon normalisation is not permitted for metal contaminants (ANZG 2018, <https://www.waterquality.gov.au/anz-guidelines/guideline-values/default/sediment-quality-toxicants>).

**Table A4. Summary of biological, sediment and ecotoxicology monitoring requirements\***

Site Code	Site type	Description	Zone	Easting	Northing	SW*	Macro*	Seds*	Ecotox
CHCK01	Upstream	Howley Creek Upstream water quality control point of Cosmo Howley Mine site	52L	765996	8506947	Y	Y	Y	N
CHCK02	Downstream	On the Stuart Hwy, upstream of the confluence with Howley Creek	52L	757789	8505652	Y	Y	Y	N
CHCK03	Downstream	Tributary of Howley Creek downstream of Acid Ponds and adjacent to haul road.	52L	756770	8506992	Y	Y	Y	N
MTSW02	Downstream	Tributary of Howley Creek, on the Stuart Hwy, heading towards Darwin. Overflow of SFD	52L	755272	8508888	Y	Y	Y	N
CHCK05	Downstream	Stuart Hwy crossing upstream of Howley Creek confluence	52L	756770	8506992	Y	Y	Y	N
CHCK06	Downstream	Howley Creek Downstream Compliance Monitoring Point of Cosmo Howley Mine site	52L	754707	8509826	Y	Y	Y	Y
CHCK04A	Downstream	Unnamed tributary of Daly River, adjacent to Dorat Rd	52L	757366	8501452	Y	Y	Y	N
CHCK04C	Downstream	Hayes Creek, approximately 1 km downstream of the Mine Lease Boundary, within the Douglas Daly catchment.	52L	756837	8500358	Y	Y	Y	N
Cosmo Pit	Upstream Pit	Cosmo Pit Wet Cap	52L	757338	8501934	Y	N	N	Y
Dam 3	Upstream Dam	Storage/Holding Dam	52L	756106	8506370	Y	N	N	Y

Y=Yes, N=No SW\* is surface water sampling, Marco\* is macroinvertebrate sampling (Annually), Seds\* is sediment sampling (Annually)

\* Source: Table 1 of NTMO CHPA Biological Monitoring Plan 2022.