



Northern
Territory
Government

WASTE DISCHARGE LICENCE

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

Licensee	McArthur River Mining Pty Ltd
Licence Number:	WDL174-17
Registered Business Address:	Level 44, 1 Macquarie Place Sydney NSW 2000
ACN:	008 167 815
ABN:	90 008 167 815
Commencement Date:	19 May 2025
Expiry Date:	30 June 2028
Licensed Action:	Controlled discharge of mine-affected wastewater from <ul style="list-style-type: none">• Mine Lease Northern (MLN) 1121, 1122, 1123, 1124 into the McArthur River; and• MLN 1126 into marine waters at the Bing Bong Loading Facility. subject to the conditions of this licence.

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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.

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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, 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.

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Cultural Interests

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

WDL174-1 was issued on 14 December 2010.

WDL174-2 was a renewal and superseded WDL 174-1, and was issued on 21 December 2011.

WDL174-3 was an amendment and replaced WDL 174-2, and was issued on 17 August 2012.

WDL174-04 was a renewal and superseded WDL 174-3, and was issued on 4 January 2013.

WDL174-05 was an amendment and replaced WDL 174-04, and was issued in January 2013.

WDL174-06 was an amendment and replaced WDL 174-05, and was issued on 19 March 2014.

WDL174-07 was a renewal and superseded WDL 174-06, and was issued on 16 January 2015.

WDL174-08 was an amendment and replaced WDL 174-07, and was issued on 17 March 2016.

WDL174-09 was a renewal and superseded WDL 174-08, and was issued on 28 October 2016.

WDL174-10 was a renewal and superseded WDL 174-09, and was issued on 28 April 2017.

WDL174-11 was a renewal and superseded WDL174-10, and was issued on 27 May 2019.

WDL174-12 was a renewal and superseded WDL174-11, and was issued on 25 May 2021.

WDL174-13 was an amendment that replaced WDL174-12, and was issued on 10 March 2022.

WDL174-14 was a renewal and superseded WDL174-13, and was issued on 25 May 2023.

WDL174-15 was an amendment that replaced WDL174-14, and was issued on 27 March 2024.

WDL174-16 was an amendment that replaced WDL174-15, and was issued on 17 November 2024.

This licence is a renewal and replaces WDL 174-16.

The end notes are to assist with historical records.

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SCHEDULE 1 - ITEMS

Item	Detail											
1. Beneficial uses (condition 19)	<p><u>Marine and tidal waters:</u></p> <p>McArthur River Area: Aquatic ecosystem protection, recreational water quality and aesthetics (Gazette G9 11 March 1998 and G20 27 May 1998 (corrigendum)).</p> <p><u>McArthur River catchment:</u></p> <p>McArthur River Catchment Area: Environment, cultural and riparian (Gazette G10 14 March 2001).</p>											
2. Sites of conservation significance (condition 19)	<p>SOCS Number 33: Sir Edward Pellew Island group;</p> <p>SOCS Number 34: McArthur River coastal floodplain; and</p> <p>SOCS Number 35: Borroloola area.</p>											
3. Ramsar wetlands (condition 19)	<p>Not applicable</p>											
4. Licence Documents (condition 13)	<p>(a) Emergency Response Management Plan</p> <p>(b) Communication Plan WDL174</p> <p>(c) Adaptive Management Plan McArthur River Mine</p>											
5. Authorised Discharge Points (condition 20)	<p>Authorised discharge points as listed in Appendix 2:</p> <table border="1" data-bbox="531 1137 1412 1637"> <tbody> <tr> <td data-bbox="531 1137 890 1227">Mine Levee Discharge Point (MLDP)</td> <td data-bbox="890 1137 1412 1227">Latitude: -16.427423 Longitude: 136.111403</td> </tr> <tr> <td data-bbox="531 1227 890 1323">South-East Levee 1 Discharge Point (SEL1 DP)</td> <td data-bbox="890 1227 1412 1323">Latitude: -16.423824 Longitude: 136.108302</td> </tr> <tr> <td data-bbox="531 1323 890 1429">McArthur River Diversion Channel Discharge Point (MRDC DP)</td> <td data-bbox="890 1323 1412 1429">Latitude: -16.435385 Longitude: 136.120196</td> </tr> <tr> <td data-bbox="531 1429 890 1525">Central East Discharge Point (CEDP)</td> <td data-bbox="890 1429 1412 1525">Latitude: -16.423233 Longitude: 136.107667</td> </tr> <tr> <td data-bbox="531 1525 890 1637">Bing Bong Dredge Discharge Point (BBDDP)</td> <td data-bbox="890 1525 1412 1637">Latitude: -15.629683 Longitude: 136.394778</td> </tr> </tbody> </table>		Mine Levee Discharge Point (MLDP)	Latitude: -16.427423 Longitude: 136.111403	South-East Levee 1 Discharge Point (SEL1 DP)	Latitude: -16.423824 Longitude: 136.108302	McArthur River Diversion Channel Discharge Point (MRDC DP)	Latitude: -16.435385 Longitude: 136.120196	Central East Discharge Point (CEDP)	Latitude: -16.423233 Longitude: 136.107667	Bing Bong Dredge Discharge Point (BBDDP)	Latitude: -15.629683 Longitude: 136.394778
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Bing Bong Dredge Discharge Point (BBDDP)	Latitude: -15.629683 Longitude: 136.394778											
6. Sources of waste (condition 21)	<p>Mine Levee Discharge Point (MLDP)</p>	<ol style="list-style-type: none"> 1. Water from the Water Management Dam. 2. Treated water via Pond 2 (P2). 3. Groundwater from dewatering bores around main pit collected in and then discharged from Pond 2 (P2). 4. Rainwater collecting in the old McArthur River Channel (NC1A) inside the Mine levee. 										

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Item	Detail	
	South-East Levee 1 Discharge Point (SEL1 DP)	Rainwater runoff, separated from all contaminated seepages, collected in, and discharged from the South-East Levee 1.
	McArthur River Diversion Channel Discharge Point(s) (MRDC DP)	<ol style="list-style-type: none"> 1. Water from the Water Management Dam. 2. Treated water via Pond 2 (P2). 3. Groundwater from dewatering bores around main pit collected in and then discharged from Pond 2 (P2)
	Central East Discharge Point (CEDP)	Treated water from Southeast Perimeter Runoff Dam (SEPROD)
	Bing Bong Dredge Discharge Point (BBDDP)	<p>The Bing Bong Dredge Discharge Point (BBDDP) receives overflow from:</p> <ol style="list-style-type: none"> 1. the final dredge spoil emplacement area cell when in operation; 2. saline water from the perimeter drain which surrounds the dredge spoil emplacement area. <p>For the purposes of clarity, this licence does not authorise dredging and/or pumping or disposal of dredge slurry to the Dredge Spoil Emplacement Area.</p>
7. Trigger values (condition 21)	The values for parameters listed in Appendix 3.	
8. Compliance points (condition 21)	SW11 as shown on the plan at Appendix 2, Figure 3.	Latitude: -16.407386 Longitude: 136.144785
	BBDDP as shown on the plan at Appendix 2, Figure 5.	Latitude: -15.629683 Longitude: 136.394778
9. Limitations on discharge (condition 21)	Authorised discharge must only occur in accordance with MRM Waste Discharge Procedure PRO-OP-0008-2200035. Discharge from SEL1 DP can only occur when flow as measured in the McArthur River at the downstream gauging station (SW11) is in excess of 20m ³ /s.	
10. Notifiable incidents (conditions 25 and 26)	<ol style="list-style-type: none"> (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 dissolved oxygen 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 of mine-affected water at a point not specified in Item 5 or authorised by another relevant regulatory approval; (e) A discharge of mine-affected water from a source not specified in Item 6 or authorised by another relevant regulatory approval; or (f) A failure to comply with condition 23. 	

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Item	Detail
11. Monitoring Program (condition 27)	The Monitoring Program includes: (a) Surface water monitoring in accordance with Appendices 4 and 5; (b) Fluvial sediment monitoring in accordance with Appendices 6 and 7; and (c) Biota monitoring in accordance with Appendix 8.
12. Annual Return (condition 38)	The Annual Return is due on 31 August each year for the preceding 12-month period ending 31 July during the term (or part thereof).
13. Monitoring Report (condition 39)	The Monitoring Report is due on: (a) 31 August each year for the preceding period 1 May to 30 April; and (b) A date agreed by the Administering Agency in the event that the licence expires or is surrendered.
14. Documents placed on Register (condition 42)	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.

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Item	Detail
<p>15. Special conditions (condition 43)</p>	<p>Dredging</p> <ol style="list-style-type: none"> 1. The licensee must submit a Dredging and Dredge Spoil Management Plan to the Administering Agency 20 business days prior to the commencement of any dredging activities. 2. The licensee must comply with the Dredging and Dredge Spoil Management Plan. <p>Investigation Reports</p> <p>Any investigation report provided in accordance with condition 26 must include, in addition to the requirements of condition 26:</p> <ol style="list-style-type: none"> 3. all water quality monitoring data collected in accordance with Appendix 4 for monitoring sites SW08, SW09, SW11, SW12, SW21, SW28, SW29, SW31 and SW32 for the date(s) on which the notifiable incidents in Item 10 were triggered and for the three sampling rounds prior to the notifiable incident being detected; 4. available flow rates for the McArthur River, Barney Creek, Surprise Creek, Emu Creek and Glyde River and flow rate at SW11 to demonstrate any influence these creeks and rivers may have had on the notifiable incident. <p>Monitoring Reports</p> <p>In addition to the requirements in condition 40:</p> <ol style="list-style-type: none"> 5. The licensee must ensure that each Monitoring Report is prepared in the format described in the National Water Quality Management Strategy, Australian Guidelines for Water Quality Monitoring and Reporting, Chapter 7: 6. The licensee must include in each Monitoring Report: <ol style="list-style-type: none"> 6.1. A data analysis and interpretation using the National Water Quality Management Strategy, Australian Guidelines for Water Quality Monitoring and Reporting, Chapter 6; 6.2. A comparison of the mine-derived contaminant loads referred to in condition 40.3, against the background loads in the McArthur River (SW21) and Glyde River (SW09); 6.3. A comparison of the mine-derived contaminant loads, referred to in condition 40.3, against contaminant loads reporting to the McArthur River from July 2017 to June 2018.

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.

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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.
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.
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:
 - 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;

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- 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.
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 cause an exceedance of the trigger values 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 authorised discharge points MLDP, SEL1 DP, MRDC DP and CEDP, 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.

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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 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.
25. If one of the incidents specified in Item 10 occurs, the Licensee must notify the Administering Agency by emailing 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;

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- 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, ensure 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; 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 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;

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- 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 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 (or 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.

WASTE DISCHARGE LICENCE (WDL174-17)

END OF LICENCE CONDITIONS

This licence is not valid unless signed below:

A handwritten signature in blue ink that reads "Andrew Johnson".

ANDREW JOHNSON
Controller of Water Resources

Dated the 19 May 2025

WASTE DISCHARGE LICENCE (WDL174-17)

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 http://www.waterquality.gov.au/anz-guidelines .
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	a method to construct new data points within the range of known data points. $y = y1 + ((x - x1) * ((y2 - y1) / (x2 - x1)))$ <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.
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 section 4 of the Water Act.
public entrance	access to the licensed premises that is utilised by the public.

WASTE DISCHARGE LICENCE (WDL174-17)

Term	Definition
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.

APPENDIX 1: McArthur River Mining Tenements and Features

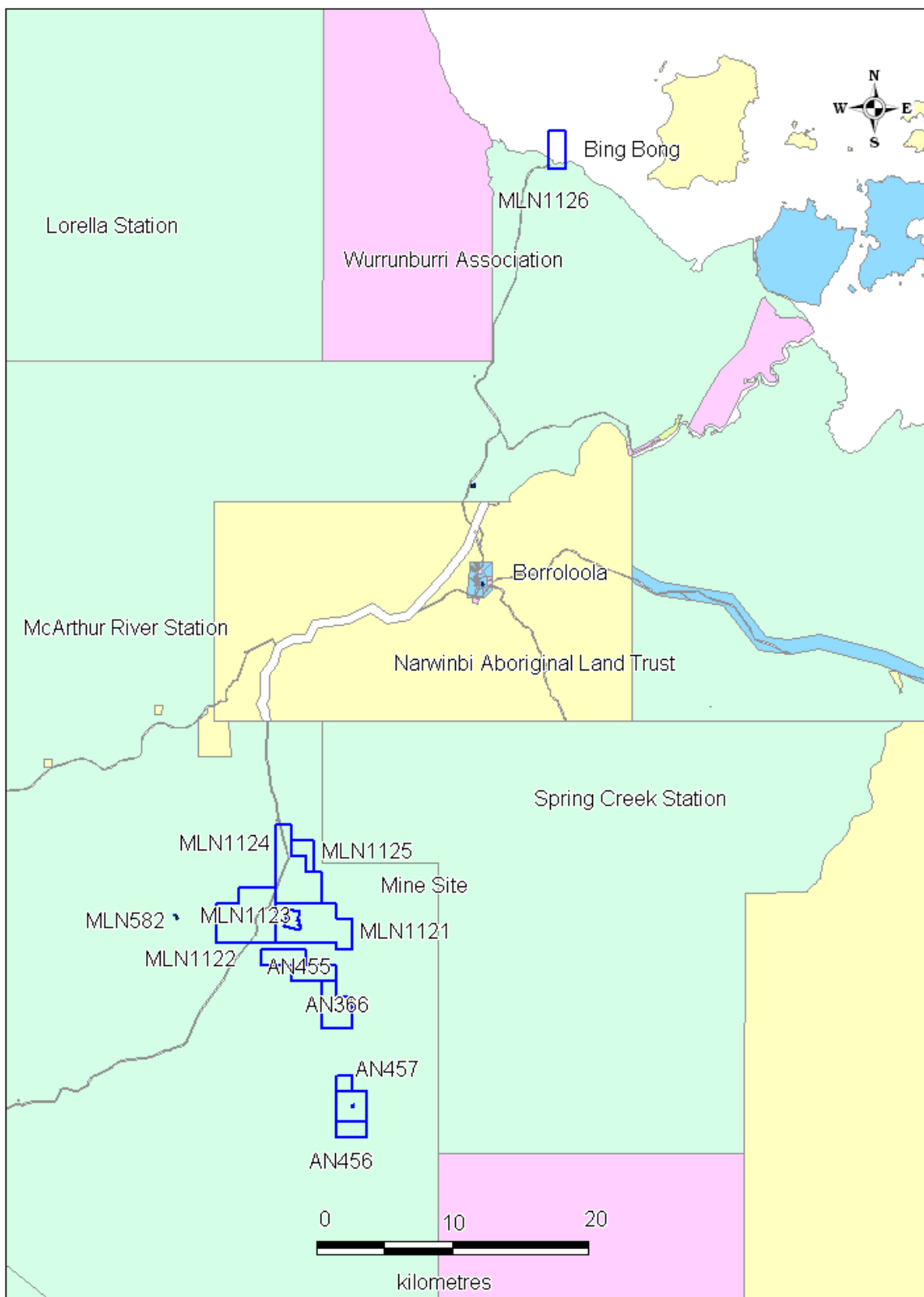


Figure 1. Overview of mine tenements

WASTE DISCHARGE LICENCE (WDL174-17)



Figure 2. McArthur River Mine Site Overview

WASTE DISCHARGE LICENCE (WDL174-17)

APPENDIX 2: Authorised Discharge Points, Compliance Point and Environmental Monitoring Sites

Table 1. Discharge and Monitoring Point Locations

Type	Site Name	Description	Latitude	Longitude
Authorised Discharge Points	MLDP	Mine Levee Discharge Point.	-16.427432	136.111403
	SEL1 DP	South-East Levee 1 Discharge Point into Barney Creek Diversion Channel.	-16.423824	136.108302
	MRDC DP	McArthur River Diversion Channel Discharge Point	-16.435385	136.120196
	CEDP	Central East Discharge Point	-16.423233	136.107667
	BBDDP	Bing Bong Dredge Discharge Point Located on the tidal mudflats to the east of the facility.	-15.629683	136.394778
Compliance Point	SW11	McArthur River downstream of Glyde River confluence	-16.407386	136.144785
	BBDDP	Bing Bong Dredge Discharge Point Located on the tidal mudflats to the east of the facility.	-15.629683	136.394778
On-site source monitoring points	P2	Pond 2. Wastewater storage pond near discharge point MLDP	-16.426849	136.107195
	NC1A	Old McArthur River channel inside mine levee	-16.427975	136.109599
	WMD	Water Management Dam	-16.426201	136.063025
	WTP	Wastewater Treatment Plant	-16.426073	136.106985
	SEL1	South East Levee 1	-16.419124	136.111740
	SEPROD	Southeast Perimeter Runoff Dam	-16.421748	136.107772
Environmental Monitoring Points	SW21	McArthur River upstream mine area	-16.461901	136.072418
	SW28	Barney Creek upstream of mine area	-16.461004	136.044125
	SW29	Surprise Creek upstream of mine area	-16.395102	136.045992
	SW31	Emu Creek upstream of mine area	-16.385029	136.108588
	SW09	Glyde River upstream of McArthur River confluence	-16.433686	136.143628
	SW12	McArthur River upstream of Glyde River confluence	-16.417868	136.137036
	SW32	McArthur River approx. 40km downstream of Compliance Point SW11	-16.135812	136.313906
	SW08	McArthur River approx. 48 km downstream of Compliance Point SW11, at Woollogorang Rd crossing	-16.081766	136.316411

WASTE DISCHARGE LICENCE (WDL174-17)

	SW10	Flow Monitoring site McArthur River upstream	-16.452897	136.085125
	SW04	Flow monitoring site Barney Creek	-16.43485	136.061433
	SW02	Flow monitoring site Surprise Creek	-16.414181	136.078483

WASTE DISCHARGE LICENCE (WDL174-17)



Figure 3. McArthur River Mine Discharge, Compliance and Environmental Monitoring Points

WASTE DISCHARGE LICENCE (WDL174-17)

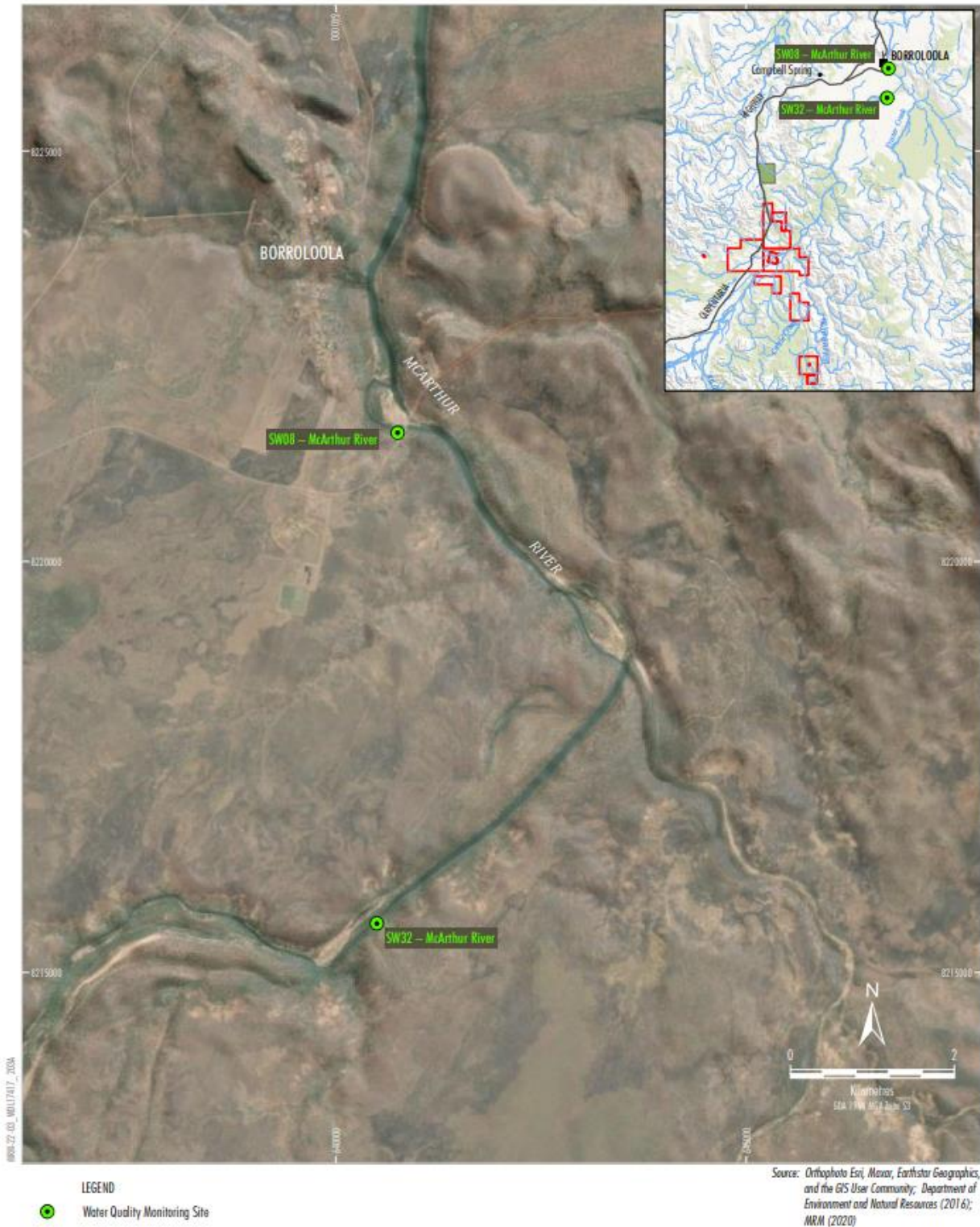


Figure 4. McArthur River Mine – Location of downstream monitoring points

WASTE DISCHARGE LICENCE (WDL174-17)



Figure 5. Bing Bong Loading Facility - Site Plan and Authorised Discharge Point

WASTE DISCHARGE LICENCE (WDL174-17)

APPENDIX 3: Trigger Values

Trigger values (TVs) for metals and metalloids are applicable to filtered samples.

				Site Code	SW11	BBDDP
				Latitude	-16.4074	-15.6297
				Longitude	136.145	136.395
Parameter	Abbr	Units	Analysis	TV	TV	
Field Measurements						
pH	pH	pH units	In situ	6.0-8.5 ^a	8.0-8.4 ^p	
Electrical Conductivity	EC	µS/cm		1,250 ^b	NR	
Dissolved Oxygen	DO	% saturation		85-120 ^c	NR	
Metals and Metalloids						
Aluminium	Al	µg/L	Filtered (0.45 µm)	269 ^d	56 ^q	
Arsenic	As			24 ^e	2.3 ^r	
Cadmium	Cd			1.73 ^f	5.5 ^e	
Cobalt	Co			1.4 ^g	1 ^e	
Copper	Cu			9 ^h	1.3 ^e	
Iron	Fe			347 ⁱ	NR	
Lead	Pb			17 ^j	4.4 ^e	
Manganese	Mn			1,900 ^e	80 ^g	
Nickel	Ni			11 ^e	70 ^e	
Thallium	Tl			58 ^k	NR	
Zinc	Zn			32 ^l	8.0 ^e	
Total Recoverable Hydrocarbons						
TRH Sum C6 - C10 Fraction >C10 - C40 Fraction	TRH	ug/L	Samples should be taken from the water column	1,000 ^m	1,000 ^m	
Aromatic hydrocarbons						
Benzene	NA	ug/L	Samples should be taken from the water column	950 ^e	500 ^s	
Toluene				180 ^e	180 ^e	
Ethylbenzene				80 ^e	80 ^e	
Xylenes (o+m+p)				625 ^e	625 ^t	
Other						
Sulphate	SO ₄	mg/L		1,000 ⁿ	NR	
Nitrate	NO ₃	mg/L		10.6 ^o	NR	

WASTE DISCHARGE LICENCE (WDL174-17)

KEY:

Trigger Value Derivation

- a - Trigger value approved by Administering Agency 2011.
- b - 95% species protection level from McArthur River Wet Season Site Specific Trigger Values: Electrical Conductivity (Mine Lakes Consulting, 2020) (NTG File Reference: 33-D25-3151).
- c - Default trigger values for tropical Australia Lowland River, Table 3.3.4 (ANZECC & ARMCANZ, 2000).
- d - 80th percentile from reference data from McArthur River Reference Water Quality Assessment (WRM, 2021).
- e - ANZG 2018 – 95% default guideline values for toxicants. Water Quality Australia. Value correct as of 16 April, 2025, from <https://www.waterquality.gov.au/anz-guidelines/guideline-values/default/water-quality-toxicants/search>
- f - Hardness Modified Trigger Value (HMTV) from the *MRM Sustainable Development Water Management Plan 2010-2011*.
- g – Default guideline value from ANZG (2018), unknown level of species protection in freshwater (Co) or marine water (Mn).
- h - 95 % species protection level from McArthur River Wet Season Site-Specific Guideline Values: Copper (Mine Lakes Consulting, 2021).
- i - 80th percentile from reference data from McArthur River Reference Water Quality Assessment (WRM, 2021).
- j - 99 % species protection level from McArthur River Wet Season Site-Specific Guideline Values: Lead (Mine Lakes Consulting, 2021).
- k - 99 % species protection level from McArthur River Wet Season Site-Specific Guideline Values: Thallium (Mine Lakes Consulting, 2021).
- l - 95 % species protection level from McArthur River Wet Season Site-Specific Guideline Values: Zinc (MLC, 2021).
- m - French-McCay, D. 2024 Considerations for development of entrained oil thresholds for oil spill risk assessments, Technical Note, February 2024. <https://energyproducers.au/wp-content/uploads/2024/09/Oil-in-Water-Threshold-Review-French-McCay-2024Feb19-002.pdf> ; Negri, A., Brinkman, D. and Jones, R. 2024. Review of entrained oil thresholds. Report prepared for Santos. Australian Institute of Marine Science. <https://energyproducers.au/wp-content/uploads/2024/07/Review-Entrained-Oil-Thresholds-2024-07-22.pdf>
- n - Guideline value for livestock drinking water from Section 4.3.3.4 (ANZECC & ARMCANZ, 2000).
- o - 95 % species protection level from *Updating nitrate toxicity effects on freshwater aquatic species* (NIWA, 2013) as recommended by ANZG (2018).
- p - Default trigger values for tropical Australia Marine Inshore, Table 3.3.4 (ANZECC & ARMCANZ, 2000).
- q – 95% species protection water quality guideline value. Van Dam, J.W. *et al.*, 2018. Water quality guideline values for aluminium, gallium and molybdenum in marine environments, *Environmental Science and Pollution Research*, <https://doi.org/10.1007/s11356-018-2702-y> (NTG File Reference: 33-D25-6890)
- r - Low reliability marine trigger value (ANZECC & ARMCANZ, 2000).
- s - ANZG 2018 – 99% Guideline values for toxicants. Water Quality Australia. Value correct as of April 16, 2025, from <https://www.waterquality.gov.au/anz-guidelines/guideline-values/default/water-quality-toxicants/search>
- t - Low reliability 95% default guideline values in marine water (m-Xylene) and freshwater adopted for marine water (o-xylene and p-xylene) (ANZG, 2018).

Other

NR: not required

WASTE DISCHARGE LICENCE (WDL174-17)

APPENDIX 4: Surface Water Monitoring Program – McArthur River Mine area

			Water Quality Monitoring Discharge Sources							Compliance Point	Upstream McArthur River	Upstream Barney Creek	Upstream Surprise Creek	Upstream Emu Creek	Upstream Glyde River	McArthur River Downstream of mine site			
Site Code			P2	NC1A	WMD	WTP	SEL1	SEPROD	SW11	SW21	SW28	SW29	SW31	SW09	SW12	SW32	SW08		
PARAMETER	Abbrev.	Units	Analysis	FREQUENCY															
Environmental Field Data																			
Water level	-	m AH D	-	C	C	C	C	C	C	C	C†	C#	C^	C	C	-	-	-	
River flow	-	L/s	-	-	-	-	-	-	-	C	C†	C#	C^	C	C	-	-	-	
Volume pumped in/out (include source/destination)	-	L	-	C	C	C	C	C	C	-	-	-	-	-	-	-	-	-	
pH*	pH	pH	In situ/ laboratory	S	S	S	S	S	S	MR	MR	TR	TR	TR	MR	MR	M	M	
Electrical conductivity*	EC	µS/ cm								MR, C	MR	TR	TR	TR	TR	MR	MR	M	M
Dissolved oxygen*	DO	% sat.								MR	MR	TR	TR	TR	MR	MR	M	M	
Temperature*	Temp	°C								MR, C	MR	TR	TR	TR	MR	MR	M	M	
Turbidity	NTU	NT U								MR	MR	TR	TR	TR	MR	MR	M	M	
Total suspended solids	TSS	mg/ L								MR	MR	TR	TR	TR	MR	MR	M	M	
Total dissolved solids	TDS	mg/ L								MR	MR	TR	TR	TR	MR	MR	M	M	
Hardness	-	mg/ L								MR	MR	TR	TR	TR	MR	MR	M	M	
Metals and Metalloids																			
Aluminium	Al	µg/L	Total and Filtered (0.45 µm)	S	S	S	S	S		MR	MR	TR	TR	TR	MR	MR	M	M	
Arsenic	As									MR	MR	TR	TR	TR	MR	MR	M	M	
Cadmium	Cd									MR	MR	TR	TR	TR	MR	MR	M	M	

WASTE DISCHARGE LICENCE (WDL174-17)

				Water Quality Monitoring Discharge Sources						Compliance Point	Upstream McArthur River	Upstream Barney Creek	Upstream Surprise Creek	Upstream Emu Creek	Upstream Glyde River	McArthur River Downstream of mine site		
Site Code				P2	NC1A	WMD	WTP	SEL1	SEPROD	SW11	SW21	SW28	SW29	SW31	SW09	SW12	SW32	SW08
PARAMETER	Abbrev.	Units	Analysis	FREQUENCY														
Copper	Cu									MR	MR	TR	TR	TR	MR	MR	M	M
Iron	Fe									MR	MR	TR	TR	TR	MR	MR	M	M
Lead	Pb									MR	MR	TR	TR	TR	MR	MR	M	M
Manganese	Mn									MR	MR	TR	TR	TR	MR	MR	M	M
Mercury	Hg									MR	MR	TR	TR	TR	MR	MR	M	M
Nickel	Ni									MR	MR	TR	TR	TR	MR	MR	M	M
Zinc	Zn									MR	MR	TR	TR	TR	MR	MR	M	M
Antimony	Sb								S	MR	MR	TR	TR	TR	MR	MR	M	M
Barium	Ba									MR	MR	TR	TR	TR	MR	MR	M	M
Boron	B									MR	MR	TR	TR	TR	MR	MR	M	M
Chromium	Cr									MR	MR	TR	TR	TR	MR	MR	M	M
Cobalt	Co									MR	MR	TR	TR	TR	MR	MR	M	M
Molybdenum	Mo									MR	MR	TR	TR	TR	MR	MR	M	M
Silver	Ag									MR	MR	TR	TR	TR	MR	MR	M	M
Thallium	Tl									MR	MR	TR	TR	TR	MR	MR	M	M
Uranium	U									MR	MR	TR	TR	TR	MR	MR	M	M
Vanadium	V									MR	MR	TR	TR	TR	MR	MR	M	M
Total Recoverable Hydrocarbons																		
TRH Sum																		
C6 - C10 Fraction	TRH	µg/L	Total	-	-	-	-	-	-	M	-	-	-	-	-	-	-	-
>C10 - C40 Fraction																		

WASTE DISCHARGE LICENCE (WDL174-17)

				Water Quality Monitoring Discharge Sources						Compliance Point	Upstream McArthur River	Upstream Barney Creek	Upstream Surprise Creek	Upstream Emu Creek	Upstream Glyde River	McArthur River Downstream of mine site		
Site Code				P2	NC1A	WMD	WTP	SEL1	SEPROD	SW11	SW21	SW28	SW29	SW31	SW09	SW12	SW32	SW08
PARAMETER	Abbrev.	Units	Analysis	FREQUENCY														
Aromatic Hydrocarbons																		
Benzene	NA	µg/L	Total	-	-	-	-	-	-	M	-	-	-	-	-	-	-	-
Toluene																		
Ethylbenzene																		
Xylenes																		
Other																		
Sulphate	SO ₄	mg/L	Filtered (0.45 µm)	S	S	S	S	S	S	MR	MR	TR	TR	TR	MR	MR	M	M
Nitrate	NO ₃									MR	MR	TR	TR	TR	MR	MR	M	M
Calcium	Ca									MR	MR	TR	TR	TR	MR	MR	M	M
Chloride	Cl									MR	MR	TR	TR	TR	MR	MR	M	M
Sodium	Na									MR	MR	TR	TR	TR	MR	MR	M	M
Potassium	K									MR	MR	TR	TR	TR	MR	MR	M	M
Magnesium	Mg									MR	MR	TR	TR	TR	MR	MR	M	M
Carbonate	CO ₃									MR	MR	TR	TR	TR	MR	MR	M	M
Bicarbonate	HCO ₃									MR	MR	TR	TR	TR	MR	MR	M	M

Key:

MR = Weekly when no discharge is occurring **and**, within 24 hours of commencement of discharge (timing of sample to approximate when discharge waters could have reached SW11) **and** daily during discharge

TR = Weekly **and** within 24 hours of a commencement of discharge.

M = Monthly **and** weekly during discharge

S = Weekly **and** upon the commencement of discharge from that discharge source

C = Continuous monitoring to achieve greater or equal to 90% data capture rate

* = Field Parameters

† = using gauging station at SW10

= using gauge station at SW04

^ = using gauge station at SW02

WASTE DISCHARGE LICENCE (WDL174-17)

APPENDIX 5: Surface Water Monitoring Program – Bing Bong Loading Facility

PARAMETER	Surface Water			
	Abbreviation	Units	Site Code	BBDDP
			Analysis	Frequency
Environmental Parameters				
pH**	pH	pH	In situ/ laboratory	W M
Electrical conductivity**	EC	µS/cm		
Dissolved oxygen**	DO	% sat.		
Temperature**	Temp	°C		
Turbidity	NTU	NTU		
Total suspended solids	TSS	mg/L		
Total dissolved solids	TDS	mg/L		
Metals and Metalloids				
Aluminium	Al	µg/L	Filtered (0.45 µm)	W M
Arsenic	As			
Boron	Bo			
Cadmium	Cd			
Cobalt	Co			
Copper	Cu			
Iron	Fe			
Lead	Pb			
Manganese	Mn			
Mercury	Hg			
Nickel	Ni			
Thallium	Tl			
Zinc	Zn			
Total Recoverable Hydrocarbons				
TRH Sum C6 - C10 Fraction >C10 - C40 Fraction	TRHS	µg/L	Total	W
Aromatic Hydrocarbons				
Benzene	NA	µg/L	Total	W
Toluene				
Ethylbenzene				
Xylenes				

WASTE DISCHARGE LICENCE (WDL174-17)

Surface Water				
			Site Code	BBDDP
PARAMETER	Abbreviation	Units	Analysis	Frequency
Other				
Sulphate	SO ₄	mg/L	Filtered (0.45 µm)	W M
Nitrate	NO ₃	µg/L		
Calcium	Ca	mg/L		
Magnesium	Mg	mg/L		
Sodium	Na	mg/L		
Potassium	K	mg/L		
Carbonate	CO ₃	mg/L		
Bicarbonate	HCO ₃	mg/L		
Chloride	Cl	mg/L		

Key: W = weekly when active dredge disposal is occurring

M = monthly when flowing

** Parameters measured in situ

WASTE DISCHARGE LICENCE (WDL174-17)

APPENDIX 6: Fluvial Sediment Monitoring – McArthur River Mine

				Compliance Point	Upstream McArthur River	Upstream Barney Creek	Upstream Surprise Creek	Upstream Emu Creek	Upstream Glyde River	McArthur River Downstream of Discharge Points			
Site Code				SW11	SW21	SW28	SW29	SW31	SW09	SW12	SW32	SW08	
Latitude				-16.4074	-16.4619	-16.4610	-16.3951	-16.3850	-16.4337	-16.4179	-16.1358	-16.0818	
Longitude				136.145	136.072	136.044	136.046	136.109	136.144	136.137	136.314	136.316	
PARAMETER	Abbrev.	Units	Analysis										
Environmental Field Data													
pH	pH	pH		A	A	A	A	A	A	A	A	A	
Electrical conductivity	EC	µS/cm		A	A	A	A	A	A	A	A	A	
Moisture content		%		A	A	A	A	A	A	A	A	A	
Particle size distribution	PSD	%	< 63 µm ≥ 63 µm & ≤ 2 mm > 2 mm	A	A	A	A	A	A	A	A	A	
Metals and Metalloids													
Aluminium	Al	mg/kg dry weight	< 63 µm sediment fraction	A	A	A	A	A	A	A	A	A	
Antimony	Sb			A	A	A	A	A	A	A	A	A	A
Arsenic	As			A	A	A	A	A	A	A	A	A	A
Barium	Ba			A	A	A	A	A	A	A	A	A	A
Beryllium	Be			A	A	A	A	A	A	A	A	A	A
Bismuth	Bi			A	A	A	A	A	A	A	A	A	A
Boron	B			A	A	A	A	A	A	A	A	A	A
Cadmium	Cd			A	A	A	A	A	A	A	A	A	A
Chromium	Cr			A	A	A	A	A	A	A	A	A	A
Cobalt	Co			A	A	A	A	A	A	A	A	A	A
Copper	Cu	A	A	A	A	A	A	A	A	A	A		

WASTE DISCHARGE LICENCE (WDL174-17)

				Compliance Point	Upstream McArthur River	Upstream Barney Creek	Upstream Surprise Creek	Upstream Emu Creek	Upstream Glyde River	McArthur River Downstream of Discharge Points			
Site Code				SW11	SW21	SW28	SW29	SW31	SW09	SW12	SW32	SW08	
Latitude				-16.4074	-16.4619	-16.4610	-16.3951	-16.3850	-16.4337	-16.4179	-16.1358	-16.0818	
Longitude				136.145	136.072	136.044	136.046	136.109	136.144	136.137	136.314	136.316	
PARAMETER	Abbrev.	Units	Analysis										
Iron	Fe			A	A	A	A	A	A	A	A	A	
Lead	Pb			A	A	A	A	A	A	A	A	A	A
Manganese	Mn			A	A	A	A	A	A	A	A	A	A
Mercury	Hg			A	A	A	A	A	A	A	A	A	A
Molybdenum	Mo			A	A	A	A	A	A	A	A	A	A
Nickel	Ni			A	A	A	A	A	A	A	A	A	A
Selenium	Se			A	A	A	A	A	A	A	A	A	A
Silver	Ag			A	A	A	A	A	A	A	A	A	A
Thallium	Tl			A	A	A	A	A	A	A	A	A	A
Uranium	U			A	A	A	A	A	A	A	A	A	A
Vanadium	V			A	A	A	A	A	A	A	A	A	A
Zinc	Zn			A	A	A	A	A	A	A	A	A	A
Lead Isotope Ratio	PbIR					A	A	A	A	A	A	A	A
Other													
Calcium	Ca	mg/kg dry weight	Soluble ion extract	A	A	A	A	A	A	A	A	A	
Magnesium	Mg			A	A	A	A	A	A	A	A	A	A
Sodium	Na			A	A	A	A	A	A	A	A	A	A
Potassium	K			A	A	A	A	A	A	A	A	A	A
Chloride	Cl			A	A	A	A	A	A	A	A	A	A
Sulphate	SO ₄			A	A	A	A	A	A	A	A	A	A

A – Annual sampling.

WASTE DISCHARGE LICENCE (WDL174-17)

APPENDIX 7: Fluvial Sediment Monitoring – Bing Bong Loading Facility

Fluvial Sediment				
Site Code				BBDDP
PARAMETER	Abbr.	Units	Analysis	FREQUENCY
Environmental Parameters				
pH	pH	pH		A
Electrical conductivity	EC	µS/cm		A
Moisture content		%		A
Metals and Metalloids				
Aluminium	Al	mg/kg dry weight	< 63 µm sediment fraction	A
Antimony	Sb			A
Arsenic	As			A
Boron	Bo			A
Barium	Ba			A
Beryllium	Be			A
Bismuth	Bi			A
Cadmium	Cd			A
Cobalt	Co			A
Chromium	Cr			A
Copper	Cu			A
Iron	Fe			A
Lead	Pb			A
Manganese	Mn			A
Mercury	Hg			A
Molybdenum	Mo			A
Nickel	Ni			A
Selenium	Se			A
Silver	Ag			A
Thallium	Tl			A
Uranium	U	A		
Vanadium	V	A		
Zinc	Zn	A		
Other				
Sulphate	SO ₄	mg/kg dry weight	Soluble ion extract	A
Calcium	Ca			A
Magnesium	Mg			A
Sodium	Na			A
Potassium	K			A
Chloride	Cl			A

Key: A – Annual sample.

WASTE DISCHARGE LICENCE (WDL174-17)

APPENDIX 8: Biota Monitoring for McArthur River Mine and Bing Bong Loading Facility

Project Name	Locations	Project Description	Report Frequency
Bing Bong Diffuse Gradients in Thin Films	Bing Bong Loading Facility Gulf of Carpentaria	Diffusive Gradients in Thin Films (DGT) are deployed in the marine environment at sites adjacent to the Bing Bong Loading Facility. This includes sites located in the Bing Bong Swing Basin and Navigation Channel. The DGTs are deployed quarterly in the water column to accumulate metals over several days. The DGTs provide time-integrated average concentrations of bioavailable metals over the deployment period. The metal concentrations are compared, where applicable, to relevant marine water quality guidelines.	Annually
Annual Marine Monitoring Program	Bing Bong Loading Facility Gulf of Carpentaria	Collection of marine biota, sediment and water samples for analysis of potentially mine derived metals and metalloids. Collection targets the area adjacent the Bing Bong Loading Facility as well as sites in the Gulf of Carpentaria to the northwest and southeast of the Loading Facility. Metal concentrations in commonly consumed species are compared to Maximum Permitted Concentrations with data also used to calculate safe daily consumption amounts where relevant. Marine water and sediment metal concentrations are used to quantify the potential impact from the Loading Facility and are compared to relevant quality guidelines.	Annually
Metals in Freshwater Biota	McArthur River Surprise Creek Barney Creek Emu Creek Robinson River Limmen River	Collection of freshwater biota samples for analysis of mine derived metals. Collection targets both lower order indicator species and higher order commonly consumed species. Samples are collected from upstream and downstream McArthur River and throughout the mine catchments such as Barney Creek and Surprise Creek. Samples are also taken from regional reference sites such as the Limmen and Robinson Rivers. Metal concentrations in commonly consumed species are compared to Maximum Permitted Concentrations. Concentrations are also used to calculate safe daily consumption amounts where relevant.	Annually
Seagrass Assessment	Bing Bong Loading Facility Gulf of Carpentaria	Seagrass monitoring to determine whether any observed change in seagrass distribution or composition has occurred in the marine waters adjacent the Bing Bong Loading Facility. Monitoring also aims to determine whether any change identified is naturally occurring or related to the Loading Facility operations.	Annually
Aquatic Fauna Abundance & Diversity - McArthur River Catchment	McArthur River Barney Creek Surprise Creek	Survey of the abundance and diversity of aquatic fauna along the McArthur River, McArthur River Diversion Channel, Barney Creek and Surprise Creek. Data is used to monitor potential impacts from mine operations and to determine the effectiveness of rehabilitation works along the McArthur River Diversion Channel by comparing data to control sites.	Biannually (early and late dry season)
Macro Invertebrates - McArthur River Catchment	McArthur River Surprise Creek Barney Creek Glyde River	Survey of macro-invertebrate abundance and diversity in aquatic ecosystems. Data is used to monitor potential impacts from mine operations and to determine the effectiveness of rehabilitation works along the McArthur River Diversion Channel. Sampling is conducted annually during the recessional flow period.	Annually (late wet season/early dry season)