


## STATEMENT OF REASONS

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Issued for a decision made under Section 74 of the *Water Act 1992* (Water Act)

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<b>Licensee</b>	McArthur River Mining Pty Ltd ABN 90 008 167 815
<b>Waste Discharge Licence (WDL) Number</b>	WDL174
<b>Licensed Action</b>	Controlled discharge of mine-affected wastewater from <ul style="list-style-type: none"><li>• Mine Lease Northern (MLN) 1121, 1122, 1123, 1124 into the McArthur River; and</li><li>• MLN 1126 into marine waters at the Bing Bong Loading Facility</li></ul> subject to the conditions of the licence.
<b>Application</b>	Application by McArthur River Mining Pty Ltd to renew WDL174-16.
<b>Decision</b>	In accordance with section 74 of the Water Act, I grant WDL174-17.
<b>Decision-maker</b>	Andrew Johnson Controller of Water Resources
<b>Signature</b>	
<b>Date</b>	19 May 2025

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In making the decision to grant the waste discharge licence (WDL), I have considered the following matters:

## **A. BACKGROUND**

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1. McArthur River Mining Pty Ltd (the applicant) operates the McArthur River Mine and holds WDL174-16, which expires on 25 May 2025.
2. McArthur River Mine is an open cut zinc/lead mine located 970 kilometres south-east of Darwin and 45 kilometres southwest of Borroloola, adjacent to the confluence of the McArthur River and Glyde River.
3. WDL174-16 authorises discharge of mine-affected water from 4 permanent authorised discharge points and a temporary discharge point. Treated wastewater from McArthur River Mine is discharged into the McArthur River. Decant water from the Bing Bong dredge spoil ponds is discharged into marine waters near the Bing Bong Loading Facility (BBLF).
4. McArthur River Mine is in the McArthur River Catchment Declared Beneficial Use Area and the McArthur River Area Declared Beneficial Use Area. The Bing Bong Loading Facility is located in the McArthur River Area Declared Beneficial Use Area. Declared beneficial uses are described at paragraph 26.
5. Conservation areas downstream of discharges authorised by WDL174-16 are:
  - a. McArthur River Coastal Flood Plain – SOCS number 34 (NT Parks and Conservation Masterplan Map Number 122)
  - b. Sir Edward Pellew Island Group - SOCS number 33 (NT Parks and Conservation Masterplan Map Number 34)
  - c. Borroloola area - SOCS number 35 (NT Parks and Conservation Masterplan Map Number 38).

## **B. APPLICATION**

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6. The applicant submitted an application to renew WDL174-16 on 23 February 2025 in the approved form (the application).
7. The application included supporting information in accordance with the requirements stated in the approved form.
8. The application was submitted more than 60 business days prior to the expiry of the licence in accordance with regulation 15 of the Water Regulations 1992 (NT).
9. The applicant proposed four amendments in the application:
  - a. Increase the trigger value for electrical conductivity (EC) at the McArthur River compliance point (SW11) from 1,000  $\mu\text{S}/\text{cm}$  to 1,250  $\mu\text{S}/\text{cm}$ . This amendment is discussed in paragraph 29.
  - b. Add the Central East Discharge Point (CEDP) as a permanent discharge point which discharges treated water directly from the Southeast Perimeter Runoff Dam (SEPROD). This amendment is discussed in paragraphs 38 to 41.
  - c. Amend the requirement to sample 5 of the surface water sites within 2 hours of commencement of discharge to instead require sampling within 24 hours of commencement of discharge. This amendment is discussed in paragraph 59.q.

- d. Amend the monitoring regime of monitoring points SW09 and SW12 to be consistent with the monitoring requirements for SW11. This amendment is discussed in paragraph 59.p.

## **C. REASONS FOR DECISION**

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In accordance with section 90(1) of the Water Act, I have taken into account the following factors in deciding to grant this waste discharge licence:

### ***The availability of water in the area in question (s 90(1)(a))***

10. Flow in the McArthur River adjacent to the Mine is highly seasonal. Most flow occurs during the wet season. Complete cessation of flow is common during the dry season, although permanent pools persist year-round along the river. The duration of the dry phase is variable and depends on the magnitude of the previous wet season. The catchment adjacent to the mine is classified as temporary waters (intermittent/recurrent) in accordance with the *Australian & New Zealand Guidelines for Fresh & Marine Water Quality* (ANZG, 2018).
11. The groundwater and surface water systems surrounding the mine are highly connected, with one system often influencing the other. Groundwater enters the system via wet season rainfall recharge mechanisms and upgradient through-flow. Groundwater flow is from west to east across the Mine through the overburden (alluvium), weathered bedrock and shallow fractured bedrock. Groundwater levels fluctuate between the wet and dry season, exhibiting a moderate to strong response to seasonal rainfall. Groundwater provides baseflow to the watercourses and diversions across the Mine. This occurs during the wet season and where groundwater is generally shallow and persists into the dry season until the water levels have receded.
12. Raw water at Bing Bong is sourced from water supply bores located approximately 20 km south from the BBLF (see paragraph 25). Rainwater is also harvested from the roof of the concentrator shed.
13. The WDL does not authorise any water extraction and will not materially affect surface water or groundwater flows in the area.
14. The WDL will not restrict the availability of water for extraction in the area because any potential changes to water quality that may constrain water availability will be restricted to the WDL mixing zones within the applicant's mineral titles. Therefore, it is highly unlikely that other users of surface water from the McArthur River would be materially impacted as a result of the licensed activity.

### ***Any water allocation plan applying to the area in question (s 90(1)(ab))***

15. There are no water allocation plans in place for the areas affected by the WDL.

### ***The existing and likely future demand for water for domestic purposes in the area in question (s 90(1)(b))***

16. There are no existing groundwater or surface water extraction licences in the immediate surrounding area of the mine site or on the McArthur River. There are no groundwater extraction bores registered in the vicinity of the McArthur River between the mining lease and the township of Borroloola approximately 50 km downstream. Drinking water for the township is supplied from groundwater bores near the township. Water demand is not likely to increase significantly in the near future.

17. There is no demand for water for domestic purposes in the vicinity of the BBLF.
18. For the above reasons, the WDL is unlikely to affect the future demand for water for domestic purposes in the area.

***Any adverse effects likely to be created as a result of activities under the WDL on the supply of water to which any person other than the Applicant is entitled under the Water Act (s 90(1)(c))***

19. There are no known third-party interests to water supply other than those described in paragraph 16.
20. The trigger values applied at the end of the WDL mixing zones are designed to ensure the protection of downstream beneficial uses and community values.
21. For the above reasons, the WDL is not likely to affect water supply.

***The quantity or quality of water to which the Applicant is or may be entitled from other sources (s 90(1)(d))***

22. The applicant currently does not extract surface water from the McArthur River.
23. The WDL does not authorise the extraction of water by the applicant.
24. Where water quality allows, the applicant preferentially reuses and recycles surplus water for use on the mine site rather than using extracted water from other entitled sources. The licensed action is predominantly used as a contingency option to manage periods of surplus water inventories.
25. The applicant currently holds a licence to take groundwater (L10009) pursuant to section 60 of the Water Act for bores RN032922 and RN025713. The licensed action would not impact the quality of the entitled water under this licence as the aquifer recharge zones for the listed bores are located away from the wastewater mixing zone.

***The designated beneficial uses of the water and the quality criteria pertaining to the beneficial uses (s 90(1)(e))***

26. The relevant declared beneficial uses are:
  - a. For the McArthur River Catchment: environment, cultural and riparian, declared in *Gazette G10* on 14 March 2001.
  - b. For the Bing Bong port in the McArthur River Area: aquatic ecosystem protection, recreational water quality and aesthetics, declared in *Gazette G9* on 11 March 1998 and amended in *Gazette G20* on 27 May 1998.
27. The *Australian & New Zealand Guidelines for Fresh and Marine Water Quality* (ANZG, 2018) and the *Guidelines for Managing Risks in Recreational Water* published by the National Health and Medical Research Council (NHMRC, 2008) have been considered in the granting of the WDL.
28. The WDL contains conditions to protect the beneficial uses of water downstream of the mine. The following conditions are maintained in the WDL to ensure the beneficial uses and aquatic ecosystems are protected downstream of the WDL mixing zones:
  - a. The WDL includes water quality trigger values. Trigger values apply to a range of contaminants which may be found in discharge waters. These trigger values indicate the concentration of contaminants below which aquatic ecosystems are very likely to be protected. Aquatic ecosystem protection limits are generally the most stringent water quality limits (as opposed to recreational water quality limits, for example).

- b. Depending on the contaminant, the trigger values are based on default guideline values for toxicants from ANZG (2018), publicly available peer-reviewed data or are site-specific trigger values derived from reference data or ecotoxicological assessments.
  - c. The WDL stipulates that authorised discharges must not cause an exceedance of the trigger values (condition 21.2). Trigger value exceedances are recorded and investigated (condition 24) and reported (condition 24 and Schedule 1 item 10 and condition 40.1) to the Department in accordance with the WDL.
  - d. Compliance with trigger values at the compliance point is managed through calculation of dilution ratios using real-time flow data from the McArthur River and near-real time water quality data from wastewater sources. Dilution ratios are calculated prior to release to maintain water quality at the compliance point below water quality trigger values.
  - e. The WDL also requires the applicant to conduct an extensive water quality and ecological monitoring program to ensure early detection of non-compliance and environmental impacts.
  - f. Monitoring by the licensee to date indicates that the licensee has complied with water quality trigger values at the compliance point and that impacts on biota in the receiving environment are not significant.
29. The applicant has applied to increase the trigger value for EC in the McArthur River from 1,000  $\mu\text{S}/\text{cm}$  to 1,250  $\mu\text{S}/\text{cm}$ . The WDL includes this change for the following reasons:
- a. The current trigger value is a default guideline value. Site-specific guideline values derived from ecotoxicological studies are preferred over default guideline values (ANZG, 2018).
  - b. The applicant has conducted ecotoxicological studies to derive a site-specific guideline value for EC.
  - c. The ecotoxicology report (Mine Lakes Consulting, 2020) and independent peer review (Noller, 2021) provided a thorough evaluation and approved methodology to derive a proposed site-specific guideline value for EC. The study used a broad suite of taxa including those locally relevant. Material provided to support the modification of the trigger value is in line with ANZG (2018). The revised trigger value of 1250  $\mu\text{S}/\text{cm}$  is scientifically defensible.
  - d. The departure from the former 1000  $\mu\text{S}/\text{cm}$  is within an acceptable range so as not to cause any material risk to the receiving environment and its function.
  - e. The current trigger value for EC in the McArthur River is often the main limit on mine discharge rates. Applying the site-specific guideline value derived from ecotoxicological studies as the EC trigger value will reduce limitations on discharge (see paragraph 33).
30. The WDL contains updated trigger values for the following parameters to ensure the trigger values are the default guideline values recommended by the ANZG (2018):
- a. Lower the trigger value for zinc at the Bing Bong compliance point (BBDDP) from 15  $\mu\text{g}/\text{L}$  to 8  $\mu\text{g}/\text{L}$ . The 15  $\mu\text{g}/\text{L}$  default guideline value used in the previous WDL was superseded in 2021.

- b. Raise the trigger value for benzene at the McArthur River compliance point (SW11) from 10 µg/L to 950 µg/L. The 10 µg/L default guideline value used in the previous WDL was based on recreational water quality guidelines. Recreational use is not a relevant declared beneficial use of the water downstream of the mine. It is more appropriate and consistent to use a trigger value for protection of aquatic ecosystems as specified in ANZG (2018).
  - c. Include trigger values for toluene, ethylbenzene and xylenes as 180 µg/L, 80 µg/L and 625 µg/L, respectively, for both the McArthur River and Bing Bong compliance points. The previous WDL only contained benzene and omitted the remaining aromatic hydrocarbons. The WDL now includes the remaining aromatic hydrocarbons which are likely to be present in the event of a hydrocarbon spill.
  - d. Introduce a trigger value for cobalt at the Bing Bong compliance point (BBDDP) of 1 µg/L. The previous WDL listed this trigger value as not required. However, a default guideline value is available (ANZG, 2018).
31. In the WDL the trigger value for aluminium at the Bing Bong compliance (BBDDP) has been changed from 0.5 µg/L to 56 µg/L for the following reasons:
- a. The trigger value of 0.5 µg/L is a low reliability marine trigger value from the Australian and New Zealand Environment and Conservation Council (ANZECC) & Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) (2000) guidelines with an unknown level of species protection. This value has not been included in ANZG (2018).
  - b. The trigger value of 0.5 µg/L is below the laboratory limit of reporting for aluminium so poses challenges when implemented operationally.
  - c. An ecotoxicology study published in 2018 recommends a very high reliability 95% species protection water quality guideline value of 56 µg/L for application to temperate and tropical marine receiving environments (van Dam *et al.*, 2018).
32. In the WDL the requirement to monitor and report on Total Petroleum Hydrocarbons (TPH) has been replaced with a requirement to monitor and report on Total Recoverable Hydrocarbons (TRH) and aromatic hydrocarbons. The WDL adopts a TRH trigger value of 1,000 µg/L (French-McCay, 2024; Negri *et al.*, 2024) for the following reasons:
- a. The previous WDL contained a trigger value of 600 µg/L for TPH fractions (C6-C9; C10-C14; C15-C28 and C29-C36). This was based on a document published in 1994 related to the Netherlands.
  - b. The term TPH and associated fractions are no longer recommended by National Environment Protection Measure guidance materials and have been replaced with Total Recoverable Hydrocarbons (TRH).
  - c. Contemporary guidance is available which recommends trigger values for TRH (French-McCay, 2024; Negri *et al.*, 2024) and trigger values for aromatic hydrocarbons (ANZG, 2018).
  - d. For TRH, the adopted trigger value for entrained oil concentration of 1,000 µg/L is a suitable water quality trigger value considering:
    - i. The most likely hydrocarbon pathways are via fresh spills from machinery operating in catchment areas that drain directly to the river or its tributaries, or to discharge source waters, and via emulsified oil passing through oil-water separators and entering discharge source waters.

- ii. In both scenarios, the hydrocarbons are likely to be fresh and predominantly in floating or entrained droplet form. As the compliance point is located close to the mine site, there is limited opportunity for entrained oil to degrade into dissolved hydrocarbons, making TRH analysis and the entrained oil trigger value appropriate indicators for detection and management.
  - iii. While floating hydrocarbons can be readily observed (which is prohibited by condition 23 of the WDL), entrained oil can be monitored using TRH analysis in conjunction with the adopted trigger value.
33. The WDL may enable the applicant to increase the volume of wastewater discharged by using an additional release point (see paragraphs 38 to 41) and increasing the EC trigger value. Although contaminant concentration trigger values remain, total annual contaminant loads may increase due to increased discharge volumes. This is not considered to represent a material increase in environmental risk or potential harm to beneficial uses for the following reasons:
- a. The amendments allow for an increase in the discharge release rate at certain times each wet season which may or may not result in an increase in the total volumes discharged during a given reporting period.
  - b. The amendments provide operational flexibility to increase the discharge rate during peak flow events in the McArthur River, when maximum dilution is available.
  - c. Contaminant loads for the primary contaminants of concern – lead and zinc – are currently limited under the Deemed Mining Licence (DML) issued by the Mining Division of the Department of Lands, Planning and Environment (DLPE) under the *Environment Protection Act 2019* in line with recommendations made by the NT Environment Protection Authority (EPA) in 2018. These recommendations require “that contaminant loads discharged to the river from the mine site must be contained such that there is no future increase above current [2017-18] annual loads” (Assessment Report 86, p. 60). The amendments would not result in lead and zinc loads exceeding the current permitted limits. The application did not seek to increase the load limits for lead and zinc discharged. Any exemption or variation to the limits would require assessment under the DML.
  - d. The applicant primarily discharges treated water, which is low in metals and has neutral to alkaline pH but retains moderate to high salinity due to elevated sulfate levels. While an increase in discharge volume could raise sulfate loads, sulfate is not limited under the DML because it is considered low risk, non-bioaccumulative, and naturally present at elevated levels in the Gulf. The NT EPA has previously found sulfate not to pose an acute threat to McArthur River water quality.
  - e. Although higher discharge volumes could increase loads of other minor constituents, MRM manages these risks through a robust monitoring program, including sediment and aquatic fauna testing for metals, to ensure ongoing protection of the McArthur River.

***The provisions of any agreement made by or on behalf of the Territory with a State of the Commonwealth concerning the sharing of water (s 90(1)(f))***

34. There are no water sharing arrangements in place in the Northern Territory concerning the sharing of water in the area.

***The existing or proposed facilities on, or in the area of, the land in question for the retention, recovery, or release of drainage water, whether surface or sub-surface drainage water (s 90(1)(g))***

35. There are several existing structures for the retention of water at the mine site. Details regarding existing structures for the retention, recovery, or release of drainage water are maintained in the applicant's latest Water Management Plan (McArthur River Mining, 2022).
36. Water management infrastructure at BBLF include the dredge spoil containment ponds and discharge point, as well as surface runoff ponds, sumps and tanks which collect water and a series of pumps to move water around the site.
37. Infrastructure on the mining leases is regulated by the DML issued pursuant to the *Environment Protection Act 2019*.
38. Previous WDLs held by the applicant licensed discharge of treated wastewater from the Southeast Perimeter Runoff Dam (SEPROD) only after that water had been moved to and stored in the Water Management Dam (WMD). WDL174-15 and WDL174-16 authorised the release of treated wastewater from SEPROD directly through the Central East Release Point (CERP) on a temporary basis in response to an emergency event.
39. The applicant applied to release water directly from the CEDP on a permanent basis.
40. The WDL changes the temporary CERP to a permanent discharge point. To align with existing naming conventions, CERP is renamed as Central East Discharge Point (CEDP).
41. Establishing CEDP as a permanent discharge point and allowing direct release of treated water from SEPROD is not considered to materially increase environmental risk for the following reasons:
  - a. The quality of water in the SEPROD is similar to WMD water. Water from the WMD was routinely released under the previous WDL.
  - b. Data provided by the applicant demonstrate that when SEPROD water was discharged during the 2023-2024 and 2024-2025 wet seasons, trigger values at the compliance point were not exceeded for any parameter. Water quality trigger values, monitoring requirements and discharge procedures to ensure downstream water quality is maintained are retained in the WDL.
  - c. It will improve operational flexibility, enabling higher discharge rates during peak river flows for better dilution. This change will help manage water inventory, reduce the risk of uncontrolled releases and increase storage capacity for ongoing treatment.

***The adverse effects, if any, likely to be created by such drainage water resulting from activities under the WDL on the quality of any other water or on the use or potential use of any other land (s 90(1)(h))***

42. Discharges from the McArthur River mine impact the water quality of the McArthur River downstream. There is a mixing zone between the discharge points and the compliance point, within which some impact on water quality is considered acceptable. The WDL monitoring program is designed to detect potential impacts.
43. The dredging of the swing basin and navigation channel and the return of decant water to the basin has the potential to mobilise contaminants present in the sediments and allow them to migrate away from the swing basin. Adequate settlement time and water quality monitoring before decanting the water and returning it to the swing basin help to ensure that contaminants are not returned to the environment. The WDL monitoring program is designed to detect potential impacts.

44. Paragraphs 28 to 33 and 41 explain why amendments included in the WDL are unlikely to change the impact of discharges on water quality.
45. The WDL is not expected to materially impact the water quality of the McArthur River, beneficial uses or any other land beyond the mixing zone.

***The provisions under the Planning Act 1999 (NT) relating to the development or use of land in the area in question (s 90(1)(j))***

46. The activities conducted on the land do not require development consent under the Planning Scheme established under the *Planning Act 1999 (NT)*, for the following reason:
  - a. the relevant activities are ‘mining activities’ being carried out under a ‘mining interest’ for the purposes of the *Mining Management Act 2001 (NT)* (Schedule 3, Clause 3(i) of the Planning Scheme).

***Other factors the Controller considers should be taken into account or that the Controller is required to take into account under any other law in force in the Territory (s 90(1)(k))***

**Monitoring and Modelling**

47. The Applicant conducts surface water, sediment and biological monitoring programs as part of the requirements of this WDL. The Applicant also monitors groundwater quality, air quality and metals in aquatic fauna for human consumption as required by the DML.
48. The applicant generally demonstrates a high level of compliance with the monitoring requirements of the WDL. Data submitted by the applicant relating to the 2023-2024 reporting year demonstrated that monitoring was conducted in accordance with the conditions of the WDL with the exception of a small number of samples (see paragraph 52).
49. The water quality of the McArthur River is affected by the mining activity and associated discharges. Elevated levels of some contaminants, in particular manganese, sulphate and electrical conductivity, and some metals, are recorded downstream of the mine site. However, there have not been significant, ongoing exceedances of WDL trigger values in the McArthur River at the compliance point.
50. McArthur River Mining has been required to undertake sediment, biological and water quality monitoring in the swing basin, navigation channel and surrounding areas. It shows that sediments in the swing basing are impacted by the activities with concentrations of metals elevated in the swing basing sediments, in particular, copper lead and zinc.

**Compliance**

51. The Applicant has generally complied with the conditions of the previous WDL.
52. The following non-compliances were reported during the 2023-2024 reporting year:
  - a. Uncontrolled release of mine-affected water from the Northern Overburden Emplacement Facility following the passage of ex-Tropical Cyclone Megan.
  - b. A measurement of zinc at the compliance point which was greater than three times the trigger value.
  - c. Failure to collect a small number of samples in accordance with the monitoring program.

53. These non-compliances do not affect the decision to amend the WDL because:
- a. The unplanned discharge related to an emergency situation which affected the region. A power failure caused by the passage of ex-Cyclone Meghan caused the failure of decant pumps. With the pumps down, pressure behind the Northern Overburden Emplacement Facility liner caused the liner to fail and release seepage water. While the infrastructure issues are regulated under the DML, the release is a failure to ensure water is only released from authorised discharge points and associated source waterbodies. The applicant undertook timely and substantial emergency remedial actions to stem the flow of mine-affected water and to prevent re-occurrence.
  - b. The zinc exceedance was not attributable to licensed discharges. The exceedance occurred before and did not result from discharges from SEPROD, through the CERP, authorised by the temporary licence conditions in WDL174-16. The high zinc level can be attributed to poor mixing of mine-affected water with unaffected Glyde River water following the unplanned release of mine-affected water from the Northern Overburden Emplacement Facility (see paragraph 59.a). Zinc levels on the opposite bank of the river were found to be below the trigger value and zinc levels quickly returned to levels below the trigger value. The Licensee investigated the incident and found no evidence of material environmental harm resulted from this incident.
  - c. Uncollected samples were the result of the passage and impacts of ex-Tropical Cyclone Megan, unavailability of the helicopter and internal communication lapses. The applicant has put in place appropriate corrective actions, including applying to increase the time available for sampling following the commencement of discharge (see paragraph 59.q). No environmental harm can be attributed to missed samples.

### Consultation

54. A draft of the amended WDL has been considered and accepted by the applicant.
55. The applicant provided feedback on the draft WDL on 1 May 2025. The applicant's feedback has been reflected in the WDL.
56. The draft was prepared with consideration of feedback from Flora and Fauna Division (DLPE) regarding the amendments proposed by the applicant. Flora and Fauna Division indicated that the material provided by the applicant was suitable to support the amendments.
57. The WDL was also provided to the following stakeholders for feedback. Their feedback is summarised below.
- a. Mining Division (DLPE): provided feedback on a number of outdated or unclear trigger values. Updated trigger values were provided to the applicant for their consideration. Most changes were accepted by the applicant. Introducing trigger values for two species of arsenic was not accepted by the applicant due to the limitations of their on-site laboratory.
  - b. Aboriginal Areas Protection Authority (AAPA): indicated that a number of sacred sites exist on the applicant's mining leases and encouraged the applicant to consult with AAPA to ensure the ongoing protection of sacred sites in the area. No substantive objections to the issuing of this WDL were raised.
  - c. Water Resources Division (DLPE): No comments received.
  - d. Northern Land Council: No comments received.

- e. NT Health, Environmental Health unit: No comments received.
- f. Roper Gulf Regional Council: No comments received.

### Conditions of WDL

58. WDL174-17 is largely the template licence and the same as WDL174-16.
59. The WDL contains changes to:
- a. Expiry Date: The applicant has traditionally been issued with 2-year licences. However, following changes to the *Environment Protection Act 2019*, all WDLs associated with activities approved under a DML will cease to have effect on or before 30 June 2028. To remove the need to process a licence renewal for only 1 year in 2027, the licence period has been extended to 30 June 2028.
  - b. Item 4: The title of 2 licence documents have been updated to align with the most recent versions provided by the applicant.
  - c. Item 6, Appendix 2 and Appendix 4: SEPROD is added as a source water and monitoring location. This is because the applicant intends to discharge directly from SEPROD through the CEDP.
  - d. Item 6: References to the Water Treatment Plant have been removed as the Water Treatment Plant is not operational.
  - e. Item 7, condition 21.1 and condition 24: The word “limit” has been removed from the phrase “trigger value limit”. This removes confusion between the terms “trigger value” and “limit” which are applied differently when used to monitor and manage water quality. The phrase “trigger value” is now applied consistently throughout the WDL.
  - f. Item 13: The requirement to submit a monitoring report upon renewal of the WDL has been removed. The WDL cannot be renewed (see paragraph 59.a). The requirement to submit a monitoring report upon expiry of the WDL has been adjusted to “a date agreed by the Administering Agency in the event that the licence expires or is surrendered”. This accounts for the likelihood that the WDL is subsumed into an Environmental (Mining) Licence issued pursuant to the *Environment Protection Act 2019* prior to the expiry of the WDL.
  - g. Item 15: Three special conditions relating to the monitoring report have been removed. These special conditions were directly duplicative of requirements in condition 40 and, therefore, were redundant. The wording of the remaining conditions has been simplified.
  - h. Item 15 and Appendix 9: The temporary discharge conditions have been removed as they are no longer required. The temporary discharge point in WDL174-16 has been added to WDL174-17 as a permanent discharge point.
  - i. Condition 21.2: This condition has been adjusted to make it clear that authorised discharges must not cause an exceedance of the trigger values at the compliance point. The previous wording may have implied that the trigger values could not be exceeded at the discharge point, which is not the intent of the condition.
  - j. Conditions 22, 29 and 40.1 have been adjusted to remove typos.
  - k. Condition 22: The CEDP has been added as a discharge point where discharge monitoring devices must be installed. This is a requirement for all discharge points at the mine.

- l. Condition 34.1: The word “reasonably” has been removed from the phrase “reasonably fit for purpose”. The condition now reads that the licensee must ensure that equipment used for monitoring is “fit for purpose”. The word reasonably was redundant.
- m. Appendix 3: The term “site-specific” has been removed from the title of the appendix. This makes the title more accurate as several of the trigger values used in the licence are default guideline values, rather than site-specific trigger values.
- n. Appendix 3: Trigger values have been updated as described in paragraphs 29 to 32. References have been condensed and contemporised.
- o. Appendix 3, Appendix 4, Appendix 5: Requirements for monitoring Total Petroleum Hydrocarbons (TPH) have been replaced with requirements for monitoring Total Recoverable Hydrocarbons (TRH) (see paragraph 32).
- p. Appendix 4: As requested by the applicant, the sampling regime for SW09 and SW12 has been changed to mirror the sampling regime for SW11 (McArthur River compliance point) and SW21 (McArthur River upstream control site). Synchronised sampling at these four key monitoring points will provide a better snapshot of river conditions for any potential water quality investigations.
- q. Appendix 4: As requested by the applicant, the sampling time frame for 5 surface water monitoring points has been extended from 2 to 24 hours after discharge begins.
  - i. Appendix 4 of the previous WDL required five surface water sites to be sampled within 2 hours of commencement of discharge. These sites are sampled weekly, providing consistent baseline data. Four sites are upstream and unaffected by mine activity, while one (SW12) is downstream but still upstream of the confluence with the Glyde River. Overland access to these sites is often limited in the wet season. The requirement to wait for a helicopter to travel from Katherine to facilitate sampling within the 2-hour timeframe can delay discharge commencement. This causes unnecessary delays without improving environmental risk management. Extending the sampling timeframe to 24 hours allows more timely discharges while ensuring sampling occurs within an acceptable timeframe.
- r. Appendix 8 – The requirement for 3-yearly vegetation monitoring at Bing Bong has been removed. The 2023 monitoring report indicated satisfactory vegetation outcomes and recommended discontinuing monitoring.
- s. All figures have been updated.

**Assessment under the *Environment Protection Act 2019 (NT)* or the *Environmental Assessment Act 1982 (NT)* (now repealed)**

60. The activity has been subject to multiple assessments under the *Environmental Assessment Act 1982 (NT)* (now repealed).
61. Completed Assessments are:
  - a. MRM Overburden Management Project 2018 (Assessment Report 86);
  - b. MRM Phase 3 Development Project 2012 (Assessment Report 69);
  - c. MRM Open Cut Amendment Project 2006 (Assessment Report 54);
  - d. MRM Phase 2 Open Cut Project 2006 (Assessment Report 51); and
  - e. Mt Isa Mines – McArthur River Project 1992 (Assessment Report 15).

62. Recommendations from NT EPA Assessment Report 86 included:
- a. The health of the McArthur River is protected along its whole length at all times from mine related impacts (Recommendation 3).
  - b. Annual loads of lead and zinc discharged to the McArthur River in future years (July to June) do not exceed the loads discharged in 2017-2018, taking into account seasonal variations in rainfall, and subject to future annual load calculations (Recommendation 3).
  - c. Water quality in the McArthur River meets site specific trigger values determined in accordance with ANZECC (2000) guidelines at appropriate monitoring locations determined in accordance with the Recommendation 13 (Recommendation 4).
  - d. Proponent to calculate contaminant concentrations entering creeks and the McArthur River using models that have been regularly reviewed and recalibrated (Recommendation 5).
  - e. Within six months of authorisation of the Proposal, revise all (groundwater and surface water) monitoring programs to assess impacts of mining activities on the environmental values and beneficial uses of the McArthur River, quantify loads of lead and zinc entering the McArthur River each year, quantify impacts to water quality and trends in groundwater and surface water and develop appropriate future trigger values. (Recommendation 13).
  - f. A research and investigation program is undertaken to determine the chronic and acute impacts to biota of mine-derived contaminants using recognised and accepted ecotoxicological testing that will inform a revised aquatic ecosystem monitoring program. (Recommendation 14 and 15).
  - g. A review and synthesis of all monitoring programs that assess impacts of mining activities on the environmental values and beneficial uses of the McArthur River (Recommendation 27).
63. The conditions of the WDL are designed to achieve the protection of the McArthur River from mine impacts.
64. The WDL also addresses the NT EPA's recommendations by requiring the applicant to:
- a. Calculate discharge loads yearly and compare them to 2017-2018 levels
  - b. Meet water quality trigger values, now set according to ANZG (2018), which superseded ANZECC (2000) guidelines, as well as the results of the applicant's ecotoxicological research and investigation program.
  - c. Conduct biological monitoring to detect and measure potential impacts to aquatic ecosystems
  - d. Provide an assessment of environmental impact and whether beneficial uses remain protected on a yearly basis.

## **D. MATERIAL CONSIDERED**

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Application to renew WDL174-16 submitted by the applicant on 18 February 2025, supporting information provided on 11 March 2025 and comments on the draft WDL174-17 provided on 1 May 2025.

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. Available at: [www.waterquality.gov.au/anz-guidelines](http://www.waterquality.gov.au/anz-guidelines)

Comments on the draft WDL and proposed amendments provided by:

- Mining Division (DLPE) on 12 March 2025 and 15 April 2025.
- Flora and Fauna Division (DLPE) on 25 March 2025.
- Aboriginal Areas Protection Authority provided on 23 April 2025.

Declared Beneficial Use Declarations

- For the McArthur River Catchment: *Gazette* G10 (14 March 2001).
- For the Bing Bong port in the McArthur River Area: *Gazette* G9 (11 March 1998) and *Gazette* G20 (27 May 1998).

French-McKay, D. *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>

Licence to take groundwater (L10009). As recorded: <http://www.ntlis.nt.gov.au/walaps-portal/report/current/gwel>

McArthur River Mine Deemed Environmental (Mining) Licence 0059-01 V14 issued 23 July 2024.

McArthur River Mining Pty Ltd, 2022. *Water Management Plan McArthur River Mine*. Available at: [https://ntepa.nt.gov.au/\\_data/assets/pdf\\_file/0005/1068494/wdl-174-water-management-plan.PDF](https://ntepa.nt.gov.au/_data/assets/pdf_file/0005/1068494/wdl-174-water-management-plan.PDF)

McArthur River Mining Pty Ltd, 2024. *Waste Discharge Licence 174-15 Monitoring Report 1 May 2023 to 30 April 2024 McArthur River Mine*, submitted in accordance with conditions of WDL174-15.

Mine Lakes Consulting, 2020. *McArthur River Wet Season Site Specific Trigger Values: Electrical Conductivity*. Report prepared for McArthur River Mining Pty Ltd.

National Health and Medical Research Council, The (NHMRC), 2008. *Guidelines for Managing Risks in Recreational Water*. Australian Government, Canberra. Available at: <https://www.nhmrc.gov.au/sites/default/files/images/guidelines-for-managing-risks-in-recreational-water.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>

Noller, B., 2021. *Independent Review of Wet Season Site Specific Guideline Values (SSGVs) for eight analytes*. Report prepared for McArthur River Mining Pty Ltd.

Northern Territory Environment Protection Authority, 2018. *Assessment report 86 McArthur River Mine Overburden Management Project McArthur River Mining Pty Ltd*. Northern Territory Government, Darwin. Available at: [https://ntepa.nt.gov.au/\\_data/assets/pdf\\_file/0004/553081/mrm\\_overburden\\_assessment\\_report.pdf](https://ntepa.nt.gov.au/_data/assets/pdf_file/0004/553081/mrm_overburden_assessment_report.pdf)

Northern Territory Government, 2022. *Guidelines on waste discharge licencing under the Northern Territory Water Act 1992*. Northern Territory Government, Darwin. Available at: [https://nt.gov.au/\\_data/assets/pdf\\_file/0016/1131073/waste-discharge-licensing-guidelines.pdf](https://nt.gov.au/_data/assets/pdf_file/0016/1131073/waste-discharge-licensing-guidelines.pdf)

*Planning Act 1999 (NT)* Available at: <https://legislation.nt.gov.au/Legislation/PLANNING-ACT-1999>

#### Sites of Conservation Significance

- Harrison, L., et al., 2009. *Borrooloola area*. Northern Territory Government, Palmerston. Available at: <https://hdl.handle.net/10070/254278>
- Harrison, L., et al., 2009. *McArthur River coastal floodplains*. Northern Territory Government, Palmerston. Available at: <https://hdl.handle.net/10070/254284>
- Harrison, L., et al., 2009. *Sir Edward Pellew*. Northern Territory Government, Palmerston. Available at: <https://hdl.handle.net/10070/254303>

van Dam, J.W., Trenfield, M.A., Streten, C., Harford, A.J., Parry, D., van Dam, R.A., 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>

#### **E. CONCLUSION AND FINAL DECISION**

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On the basis of the above reasons, I have decided to issue WDL174-17.