# STATEMENT OF REASONS

Issued in accordance with Section 35 of the *Northern Territory Civil and Administrative Tribunal Act 2014* (NTCAT Act) for a decision made under Section 93 of the *Water Act 1992* (Water Act)

| | |
|---|---|
| **Licensee** | McArthur River Mining Pty Ltd<br>ABN 90 008 167 815 |
| **Waste Discharge Licence (WDL) Number** | WDL174 |
| **Licensed Action** | Controlled discharge of mine-affected wastewater from<br>• Mine Lease Northern (MLN) 1121, 1122, 1123, 1124 into the McArthur River; and<br>• MLN 1126 into marine waters at the Bing Bong Loading Facility.<br>subject to the conditions of the licence. |
| **Application** | Application by McArthur River Mining Pty Ltd (MRM) to amend WDL174-15. |
| **Decision** | In accordance with section 93(1) of the Water Act, I amend WDL174-15 and issue as WDL174-16. |
| **Decision-maker** | Andrew Johnson<br>Controller of Water Resources |
| **Signature** |  |
| **Date** | 17 November 2024 |

This Statement of Reasons has been prepared in accordance with section 35 of the NTCAT Act.

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

## BACKGROUND

1. McArthur River Mining Pty Ltd (the Applicant) operates the McArthur River Mine and holds WDL174-15.

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. WDL174-15 authorises discharge of mine-affected water from 4 permanent authorised discharge points and 4 temporary discharge points. 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.

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 23.

5. Conservation areas downstream of discharges authorised by WDL174-15 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 38).

## APPLICATION

6. The Applicant submitted an application to amend WDL174-15 on 3 October 2024 in the approved form.

7. The application requested authorisation to discharge treated mine-affected water from the south-eastern perimeter runoff dam (SEPROD) through the central east release point (CERP) over the 2024-2025 wet season.

8. The application states that the additional discharge point and source of discharges is required because:
    a. In March 2024, Cyclone Megan brought extreme levels of rainfall to the mine and increased the site water inventory. The Applicant has treated excess mine-affected water with bulk hydrated lime over the 2024 dry season. Treated water is stored in the water management dam (WMD) and SEPROD. As the 2024-2025 wet season approaches, SEPROD is operating close to the dam's maximum operating level (MOL). Reduced freeboard in water storages increases the risk of spilling or overtopping during the 2024-2025 wet season.

b. Being permitted to use the CERP and discharge from SEPROD during the 2024/2025 wet season will allow the Applicant to:

   i. Reduce the mine's overall water inventory

   ii. Lower the water level of mine water storages to reduce the risk of overtopping or spilling

   iii. Continue to treat mine-affected water and be able to store it on site prior to release

   iv. Release larger quantities of mine-affected water during peak flow events, maximising dilution and reducing potential impacts to the environment.

## REASONS FOR DECISION

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

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

9. 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 the mine is classified as temporary waters (intermittent/recurrent) in accordance with the *Australian & New Zealand Guidelines for Fresh & Marine Water Quality* (ANZG, 2018).

10. 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.

11. The amendment does not authorise any water extraction and will not materially affect surface water or groundwater flows in the area.

12. The amendment 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))*

13. There are no water allocation plans in place for the area affected by the proposed WDL.

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

14. There are no existing groundwater or surface water extraction licences in the immediate surrounding area of the 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.

15. 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))***

16. There are no known third-party interests to water supply other than those described in paragraph 14.

17. The trigger values applied at the end of the WDL mixing zone are designed to ensure the protection of downstream beneficial uses and community values. Trigger values have not been changed for the amendment and are discussed further in paragraph 25.

18. The applicant currently does not extract surface water from the McArthur River.

19. 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))***

20. This WDL does not authorise the extraction of water by the Applicant.

21. Where water quality allows, the Applicant preferentially reuses and recycles surplus water for use on site rather than using extracted water from other entitled sources. The licensed activity is predominantly used as a contingency option to manage periods of surplus water inventories.

22. The Applicant currently holds a licence to take groundwater (L10009) pursuant to section 60 of the Water Act for bores RN032922 and RN025713, located south of the Bing Bong Loading Facility.

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

23. 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.

24. 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 licence.

25. The WDL contains conditions to protect the beneficial uses of water downstream of the mine.

    a. The licence 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 that can be in the water to concentrations which protect

aquatic ecosystems. 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), screening levels from NHMRC (2008) 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 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 licence 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.

26. The quality of water in the SEPROD is similar to WMD water. Water from the WMD is routinely released under the current WDL. Data provided by the Applicant demonstrate that when SEPROD water was discharged in March and April 2024, trigger values at the compliance point were not exceeded for any parameter.

27. The amendment enables the Applicant to increase the volume of wastewater discharged by using an additional release point from an additional water storage.

28. Although contaminant concentration limits remain the same, the total annual contaminant loads may increase due to increased discharge volumes. Contaminant loads are currently regulated under the Deemed Environmental (Mining) Licence issued under the *Environment Protection Act 2019* in line with recommendations made by the NT 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).

29. As a result of the extreme conditions during Cyclone Megan in March 2024, the Applicant requested an exemption to the load limits for total lead and total zinc on 14 April 2024, which was granted on 12 June 2024 by the then NT Department of Industry, Tourism and Trade. Discharges over the 2023/2024 wet season caused exceedances of the 2017/2018 loads for lead and sulphate, amongst other contaminants.

30. The Applicant has not submitted a further request for exemption regarding the load limits. As such, the load limits continue to apply.

31. The amendment does not change the trigger values or other conditions in the WDL which ensure the protection of beneficial uses downstream of the mine.

***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))***

32. 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))***

33. There are several existing structures for the retention of water on the mining lease. 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).

34. This amendment authorises use of an additional release point (CERP) and an additional source water body (SEPROD).

35. Infrastructure on the mining lease is regulated by the Mining Division in the Department of Lands, Planning and Environment under a Deemed Environmental (Mining) Licence issued pursuant to the *Environment Protection Act 2019*.

***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))***

36. 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.

37. Paragraphs 25 to 31 explain why this amendment is unlikely to change the impact of discharges on water quality.

38. The amendment is not expected to materially change the impact of discharges on the water quality of the McArthur River, beneficial uses or any other land.

***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))***

39. 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 reasons:

    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))***

<u>Monitoring and Modelling</u>

40. The Applicant conducts surface water, sediment and biological monitoring programs as part of the requirements of this licence. The Applicant also monitors groundwater quality, air quality and metals in aquatic fauna for human consumption as required by the Deemed Environmental (Mining) Licence.

41. 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 licence trigger values in the McArthur River at the compliance point.

42. Releases of water from SEPROD through the CERP were temporarily permitted following Cyclone Megan. Data provided by the Licensee demonstrate that when SEPROD water was discharged in March and April 2024, trigger values at the compliance point were not exceeded for any parameter.

43. In 2023-2024, one exceedance of water quality trigger values was reported and investigated by the licensee and found to not be attributable to licensed discharges.

Compliance

44. The Applicant has generally complied with the conditions of the existing WDL.

45. The following non-compliances are relevant to the proposed WDL.

    a. An unplanned discharge of mine-affected water through a broken seepage liner at the Northern Overburden Emplacement Facility occurred shortly following Cyclone Megan. Notification was made in accordance with regulatory requirements. The unplanned discharge occurred because electricity failures stopped decant pumps, which led to increased pressure and failure of the seepage liner.

    b. A water sample collected on 26 March 2024 indicated elevated zinc levels close to the compliance point. Due to high flow conditions in the McArthur River, the sample was collected on the western side of the river, away from the usual sampling point.

46. These non-compliance do not affect the decision to amend the licence because:

    a. The non-compliance occurred before and did not result from discharges from SEPROD, through the CERP, authorised by the temporary licence conditions in WDL174-15.

    b. The unplanned discharge related to an emergency situation which affected the region.

    c. The Applicant undertook timely and substantial emergency remedial actions to stem the flow of mine-affected water.

    d. The exceedance was not attributable to licenced discharges.

    e. High flows restricted access to the usual monitoring point. Subsequent samples indicated that zinc levels on the opposite side of the river and at the compliance point were well below the trigger value.

    f. The high zinc level can be attributed to poor mixing of mine-affected water with unaffected Glyde River water.

    g. The Licensee investigated the incident and found no evidence of material environmental harm resulted from this non-compliance.

Consultation

47. The draft WDL has been considered and accepted by the Applicant.

Conditions of WDL

48. WDL174-16 is largely the same as WDL174-15. Substantive changes have been made to:
    a. Item 15 – the dates during which temporary conditions in Appendix 9 can be used have been changed to encompass the 2024-2025 wet season, through to the expiry date of the WDL.
    b. Appendix 9 – temporary conditions related to discharge of water from the SEPROD through CERP have been retained, including requirements for monitoring associated with these discharges. All other temporary discharge points and source water bodies permitted by WDL174-15 have been removed.

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

49. The activity has been subject to multiple assessments under the Environmental Assessment Act 1982 (NT) (now repealed).

50. 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).

## MATERIAL CONSIDERED

Application to amend WDL174-15 submitted by the Applicant on 3 October 2024.

- Application in the approved form
- Letter from the applicant accompanying the application
- Water quality results accompanying the application

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

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).

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. Available at: https://nt.gov.au/__data/assets/pdf_file/0008/948977/variation-of-authorisation-0059.pdf

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

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.

The National Health and Medical Research Council (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

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

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

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

Sites of Conservation Significance

- Harrison, L., et al., 2009. *Borroloola 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

## CONCLUSION AND FINAL DECISION

On the basis of the above reasons, I have decided to:

1. Amend WDL174-15 to:

   A. At Item 15, delete '26 March 2024 to 30 June 2024' and replace with '15 November 2024 to 25 May 2025'.

   B. Delete Appendix 9 and replace it with Appendix 9 as below.

## APPENDIX 9: Temporary licence conditions

44. Discharge from the source water body specified in Table 2 is permitted through the temporary discharge location specified in Table 2 and shown in Figure 6.

**Table 2. Temporary discharge location and source water body.**

| Location | Source water body | Discharge location latitude | Discharge location longitude |
|---|---|---|---|
| Central East Release Point (CERP) | South-Eastern Perimeter Runoff Dam (SEPROD) | -16.423233 | 136.107667 |

45. In addition to the monitoring required by condition 27 of this licence, while any discharges through Temporary Discharge Location are occurring, the licensee must:

45.1. Apply the water quality monitoring requirements set out in Appendix 4 for the Water Management Dam (WMD) to SEPROD; and

45.2. Monitor discharge flow rates and volumes from the temporary discharge location.


Figure 6. Temporary discharge location and source water body.