

NORTHERN TERRITORY OF AUSTRALIA

Mining Management Act 2001

VARIATION OF AUTHORISATION 0059

To: McArthur River Mining Pty Ltd (ACN 008 167 815)
34a Bishop Street
Winnellie NT 0820

I, **ARMANDO VALENTINO PADOVAN**, as delegate of the Minister for Mining and Industry pursuant to section 38(2) of *Mining Management Act 2001* (the Act), after having paid due regard to the matters referred to in section 34 of the Act and being satisfied as to the matters referred to in section 38(3) of the Act, **vary** the Constituent Authorisations as defined in section 4AB(4)(a) and (b) of the *McArthur River Project Agreement Ratification Act 1992* (NT) (the Ratification Act)¹ for the mining site known as the McArthur River Mine, situated within Mineral Lease Northern (ML N) ML N1121, ML N1122, ML N1123, ML N1124, ML N1125, ML N1126 granted pursuant to section 4A of the Ratification Act, MLN 582 granted pursuant to the *Mining Ordinance 1939* and MA 366, MA 455 and MA 456 granted pursuant to the *Mining Act 1980*, and for the period of those titles, by **omitting** the Schedule to the Authorisation as varied on 5 May 2022, and **inserting** Schedules A, B, C and D attached to this instrument.

This Variation commences on the date this document is signed.



Senior Executive Director - Mines

As delegate of the Minister for Mining and Industry

17 May 2023

¹ For the purposes of section 4AB(4) of the *McArthur River Project Agreement Ratification Act 1992* (NT), "Authorisation" means the constituent authorisations defined at section 4AB(4)(a) and (b) as "(a) the authorisation under section 36 of the *Mining Management Act 2001* dated 21 January 2003 and numbered 0059-01; and (b) the further authorisation under section 36 of the *Mining Management Act 2001*, varying that authorisation, dated 13 October 2006, and numbered 0059-02.

Document history:

Authorisation No.	Grant or variation	Date issued
0059-01 V13	Variation	17/05/2023
0059-01 V12	Variation	05/05/2022
0059-01 V11	Variation	18/06/2021
0059-01 V10	OMP approval	13/11/2020
0059-01 V9	Variation	10/08/2020
0059-01 V8	Variation	15/08/2019
0059-01 V7	Variation	07/06/2019
0059-01 V6	Variation	20/12/2018
0059-01 V5	Variation	12/10/2018
0059-01 V4	Variation	17/07/2018
0059-01 V3	Variation	29/11/2017
0059-01 V2	Variation	01/06/2017
0059-01 V1	Variation	29/01/2014
0059-02	Variation	13/10/2006
0059-01	Grant	21/01/2003

SCHEDULE A - CONDITIONS OF AUTHORISATION

Definitions

1. In this document, unless the contrary intention appears:
 - a. **AAPA** is an acronym for the Aboriginal Areas Protection Authority;
 - b. **Acidic and Metalliferous Drainage** or **AMD** means drainage (which may be generated from sources including waste rock piles, ore stockpiles, tailings storage facilities and tailings dams, processing areas or facilities, roadways and embankments constructed with sulfidic material, open cuts and mine pits, underground mines, heap and dump leach piles, and acid sulfate soils) with the characteristics detailed in Figure 1 of the Preventing Acid and Metalliferous Drainage, Leading Practice Sustainable Development Program for the Mining Industry (DFAT 2016). Acid and Metalliferous drainage includes acidic drainage and pH neutral metalliferous drainage (NMD), and saline drainage (SD), generally caused by the oxidation of sulfide minerals²;
 - c. **Act** means the *Mining Management Act 2001* (NT) and includes any statutory instruments made under it, any amendment to it, or replacement of it;
 - d. **Adaptive Management Plan** is defined by the Northern Territory Environment Protection Authority as a plan detailing a systematic process for incrementally improving management practices by learning from the outcomes of past and current practices³;
 - e. **AMP** is the acronym for the Adaptive Management Plan;
 - f. **Approved MMP** means the Mining Management Plan January 2020, Version 1.0, approved by the Minister pursuant to the Act;
 - g. **ARI** is an acronym for annual recurrence interval meaning the average, or expected, value of the periods between exceedances of a given rainfall total accumulated over 72 hours;
 - h. **CCL** is an acronym for compacted clay liner;
 - i. **Community** means the community of Borroloola in the Northern Territory of Australia, including local businesses and other organisations such as Mawurli and Wirriwangkuma Aboriginal Corporation (ABN 54 878 185 797);
 - j. **CRG** is the acronym for the Community Reference Group;
 - k. **Date of Authorisation** of the Overburden Management Project is 13 November 2020;

² Australian Government Department of Industry Tourism and Resources (2016) Preventing Acid and Metalliferous Drainage, Leading Practice Sustainable Development Program for the Mining Industry. <http://www.industry.gov.au/resource/Documents/LPSDP/LPSDP-AcidHandbook.pdf>, Accessed 27 June 2018.

³ Northern Territory Environment Protection Authority (2018) *Guidance on Adaptive Management*

- l. **DCCEEW** is the acronym for the Australian Government Department of Climate Change, Energy, the Environment and Water;
- m. **Department** means the Department of Industry, Tourism and Trade (or any other Northern Territory Department or Agency that is, from time to time, responsible for the administration of these Conditions) and the delegates, officers, employees and other agents of that Department;
- n. **Environmental Value** means a feature of, or a use of, the environment or part of the environment;
- o. **EMR** is an acronym for Environmental Mining Report, which has the same meaning as in the Act;
- p. **EOEF** is an acronym for Eastern Overburden Emplacement Facility, being a temporary structure for the management of benign and non-benign waste rock, as defined in the approved MMP;
- q. **Independent**, in relation to a person, means the person has agreed in writing to:
 - i. act independently of the parties with an interest in the person's engagement;
 - ii. act with honesty, reason and with the degree of professional care, skill, knowledge, experience and diligence which may reasonably be expected of the person in carrying out the engagement;
 - iii. treat information received or prepared by the person as part of the engagement:
 - 1. in confidence such that the information is not disclosed to a party other than the parties with an interest in the engagement or the person without the consent of the other parties (unless the disclosure is reasonably required by law, such as the rules of a stock exchange or disclosure to a Minister, Parliament or Legislative Assembly);
 - 2. by freely sharing the information between parties with an interest in the engagement and the person, such that no one of those parties is less informed than another in relation to the engagement.
 - iv. report in writing to the parties with an interest in the engagement at the same time, immediately upon becoming aware of one of the following relevant matters:
 - 1. any potential, perceived or actual conflicts of interest that arise, including any relationship or association, interest in assets, office held, professional or contractual obligation or provision of services relating to the parties with an interest in the engagement which might affect the ability of the person to perform the engagement impartially, diligently or independently;
 - 2. any attempted interference or influence in the performance of the engagement by parties with an interest in the engagement;

3. any failure to cooperate with the person or unresponsiveness to the person's requests by a party whose cooperation is required for the engagement.
- r. **ICE** is an acronym for the Independent Certifying Engineer as defined in Condition 48;
- s. **Mine** means the mining site in which mining activities authorised by this document may occur;
- t. **Mine or Mining Management Plan** has the same meaning as under the Act (to remove all doubt the most recent approved MMP prevails);
- u. **Mine or Mining Site** has the same meaning as in the Act;
- v. **Minister** means the Minister responsible for the Act and includes officers delegated to act on his behalf with regards this Authorisation;
- w. **MMP** is the acronym for Mining Management Plan;
- x. **NAF** is an acronym for non-acid forming;
- y. **NOEF** is an acronym for the Northern Overburden Emplacement Facility, being a Waste Rock dump at the Mine which includes the Waste Rock and all ancillary facilities, infrastructure, areas and things connected to that facility;
- z. **NOEF West A, B, C, D, CW, CE, NE, NW and SE** are names for specific areas within the NOEF as identified in the MMP;
- aa. **NT EPA** means the Northern Territory Environment Protection Authority an independent authority established under the *Northern Territory Environment Protection Authority Act 2012*;
- bb. **Operator** means McArthur River Mining Pty Ltd ACN 008 167 815;
- cc. **PAF** is an acronym for potentially acid forming;
- dd. **Quality Control or QC** means a system of maintaining standards in construction by testing samples of the output against pre-defined specification;
- ee. **Quality Assurance or QA** means a system for the maintenance of a desired level of quality in construction, especially by means of attention to every stage of the construction process;
- ff. **Receiving Environment** means any aspect of the environment (within the Mine or outside of the Mine) that has the potential to be impacted by the Mine;
- gg. **Responsible Representative** means a delegate of the Minister and includes Chief Executive Officer, Executive Director Mines and Director Mining Operations;
- hh. **SOEF** is an acronym for Southern Overburden Emplacement Facility;

- ii. **Tailings** means the residue or waste resulting from the processing of ore, often being a slurry of suspended solid particles and water, but includes both the liquid and solid components;
- jj. **Territory** means the body politic established by the *Northern Territory (Self-Government) Act 1978 (Cth)* as the Northern Territory of Australia;
- kk. **Title Holder** means each person that is registered as an owner, on the mineral titles register maintained by the Territory, of a mining interest to which this document relates;
- ll. **TSF** is an acronym for Tailings storage facility;
- mm. **Waste Rock** is:
 - i. Benign Waste Rock if it is classified as **LS-NAF(HC)**; and
 - ii. Non-Benign Waste Rock if it is classified as one of the following:
 - a) **MS-NAF(HC)** – Metalliferous Saline – Non-Acid Forming (High Capacity);
 - b) **MS-NAF(LC)** – Metalliferous Saline – Non-Acid Forming (Low Capacity);
 - c) **PAF(HC)** – Potentially Acid Forming (High Capacity); and
 - d) **PAF(RE)** – Potentially Acid Forming (Reactive) (including **PAF(HW)** – Potentially Acid Forming (Hanging Wall));
- nn. **WDL** is an acronym for the Waste Discharge Licence issued under the *Water Act 1992*;
- oo. **WOEF** is an acronym for Western Overburden Emplacement Facility.

Interpretation

- 2. In this document, unless the contrary intention appears:
 - a. words defined or used in the Act have the same meaning as in the Act;
 - b. a reference to “this document” includes the cover page and Schedules;
 - c. a reference to a document is a reference to that document as in effect from time to time;
 - d. the word “including” is not a word of limitation and is to be interpreted as though it were immediately followed by the words “but not limited to”;
 - e. headings have been included for ease of reference only and do not affect interpretation;
 - f. a reference to the singular includes the plural and vice versa;

- g. a reference to time is to the time at Darwin in the Northern Territory of Australia; and
- h. a reference to dollars and \$ is to Australian currency.
- i. Where the word “**Completed**” is shown in bold text below a condition, it means the respective condition has been satisfied at the time of issue of this variation of authorisation.

General

- 3. Subject to any Conditions contained in the Act and this document,⁴ the Operator must comply with the commitments and activities contained in the MMP including the implementation of all systems referred to in the MMP.⁵
- 4. The Operator may only conduct mining activities identified in the MMP within the Mine subject to any Conditions contained in the Act, this document and the Conditions commitments and systems contained in the MMP.
- 5. The mine site is to be developed and operated in accordance with all relevant Commonwealth and Northern Territory legislation.

Mining management plan and reporting

- 6. The Operator must on 31 August 2021 and on each anniversary of that date (or such other date as nominated by the Operator and approved by the Minister), review the approved MMP and if necessary, amend the MMP.⁶
- 7. The Operator must submit annually all environmental monitoring data⁷ which has been collected since the previous data submission. The data submission must be provided in the approved form (being an MS Excel template that can be provided on request) and include laboratory and field data for the following:
 - a. surface water;
 - b. groundwater;
 - c. dust;
 - d. sediments;
 - e. gas; and
 - f. water transfers and discharges (including dates, times and volumes).⁸
- 8. From 13 November 2020 (i.e. the date of authorisation of the Overburden Management Project) the Operator must:

⁴ Section 37(1) of the *Mining Management Act 2001*

⁵ Section 37(2) of the *Mining Management Act 2001*

⁶ Section 41(1) of the *Mining Management Act 2001*

⁷ See Schedule D this document in relation to environmental monitoring requirements

⁸ Section 37(3)(d) of the *Mining Management Act 2001*

- a. annually submit to the Department, unless otherwise agreed to in writing by the Department, a list of structures scheduled to be constructed in the coming year that will have an "as-constructed" construction report developed subject to Condition 48(g) and in accordance with the approved MMP; and
 - b. submit the "as -constructed" construction reports subject to the above condition for each structure to the Department within 60 days or an alternate date agreed to by the Department in writing, upon construction being finalised.
9. The Operator must submit on or before 31 August 2021 and on each anniversary of that date (or such other date as nominated by the Operator and approved by the Minister), an **EMR** for the previous year in the reporting period as agreed with the Department.

Security and levy

10. The Operator must provide to the Minister a security of \$479,200,853 in the form of cash or an unconditional bank guarantee prior to undertaking any mining activities authorised by this Variation of Authorisations 0059-01 and 0059-02.⁹
11. The security provided for under Condition 10 will be reassessed, and may be revised, following the submission, assessment and approval of an:
- a. independent third party assessment of the security by a qualified person approved by the Minister (also refer to Condition 40);
 - b. amended MMP;
 - c. amendment to the Unplanned Closure Plan.
12. The revised security amount to be provided under Condition 10 is to be provided prior to creating the new disturbance, covered under the revised security as per written notification from the Department. For the avoidance of doubt, the Operator must provide the revised security amount in the form of cash or an unconditional bank guarantee to the Minister.
13. Each financial year, upon receipt of a written notice by the Minister as to the levy payable for that financial year, the Operator must pay a levy to the Mining Remediation Fund of an amount calculated in accordance with the Act and as stated by the Minister in the notice.¹⁰

Overburden Management Project

Explanatory note:

The following conditions were introduced in the previous variation, dated 15 August 2019 to reflect the intent of the thirty recommendations made by the NT EPA in the making of their Assessment Report 86 published July 2018.

⁹ Section 37(2)(b)(i) of the *Mining Management Act 2001*

¹⁰ Sections 37(2)(b)(ii), 44A and 44B of the *Mining Management Act 2001* and regulation 5A of the *Mining Management Regulations*

The NT EPA articulated an overarching environmental objective to be achieved during operation of the Mine: to ensure the health of McArthur River is protected along its whole length at all times from mine related impacts.

The Minister accepted the recommendations as overarching conditions for the life of the project and have been retained to achieve transparency.

14. The Operator must ensure activities related to the McArthur River Overburden Management Project are implemented in accordance with:
 - a. all environmental commitments and safeguards identified in the final Environmental Impact Statement for the McArthur River Mine Overburden Management Project (draft Environmental Impact Statement, Supplement to the draft Environmental Impact Statement and additional information);
 - b. recommendations in the NT EPA Assessment Report 86 where they are approved under an MMP;
 - c. if there is any inconsistency between the above documents, the most recent authorisation shall prevail to the extent of any inconsistency.
15. The Operator must provide written notice to the Minister and NT EPA if it alters or proposes to alter the McArthur River Mine Overburden Management Project and/or commitments, safeguards or mitigation measures in the Environmental Impact Statement in such a manner that the environmental significance of the action may have changed. The referral should be made in accordance with the *Environment Protection Act 2019*.
16. By 13 May 2022 (i.e. within 18 months of the date of authorisation of the Overburden Management Project), unless otherwise agreed in writing by the Department, the Operator must submit a plan to the Department for review, that:
 - a. Enables measurement of total loads of lead and zinc and is consistent with requirements of Condition 27;
 - b. Quantifies and ensures 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 (as per Condition 68(e)) taking into account seasonal variations in rainfall, and subject to future annual load calculations;
 - c. addresses recommendations and outcomes arising from audits of loads by the Independent Monitor;
 - d. include sufficient detail to inform the development of monitoring and management measures (including but not limited to early warning alerts and intervention levels), as part of the site wide AMP (Condition 45);

Completed: 16 (a) to (d) inclusive

 - e. once approved by the Department, be implemented by the Operator.
17. By 13 May 2022, the Operator must:
 - a. submit a plan to the Department for review, that shall include:

- i. site-specific trigger values determined in accordance with Australian and New Zealand Guidelines for Fresh and Marine Water Quality, 2018 framework, incorporating ANZECC (2000) guidelines, at appropriate monitoring locations, in accordance with Condition 27;
- ii. a commitment that creeks on the mine site show long-term improving trends in water quality within 20 years after cessation of mining;
- iii. methodology to calculate contaminant loads and contaminant concentrations entering creeks and the McArthur River using system modelling that must:
 - a. use suitable site-specific data collected as part of Condition 26;
 - b. be subject to review by the relevant independent panel;
 - c. detail specific assumptions to be tested including but are not limited to:
 - i. groundwater flow paths;
 - ii. attenuation of metals from mine-derived wastes;

Completed: 17 (a)

- b. once approved by the Department, implement the plan;
- c. incorporate the relevant findings from the plan into the AMP.

Completed: 17 (c)

- 18. The Operator must provide a written response to the Department, if an independent technical panel's, required under Condition 21, review of the models and modelling outputs, and the data collection programs that informed the model development at Condition 17(a)(iii) address recommendations for improvements. All relevant outputs must be used to inform and update the AMP.
- 19. Every three (3) years from the date of authorisation of the Overburden Management Project, an independent environmental audit of the Quality Assurance (QA) and Quality Control (QC) procedures and waste rock identification and handling performance must be undertaken and:
 - a. the results of the audit be provided within six (6) weeks to the Department and to the relevant independent panel;
 - b. the Operator must provide a written response to the satisfaction of the Department where findings from the audit and review by the relevant panel includes matters that need to be addressed or areas for improvement.
- 20. From 13 November 2020 (i.e. date of authorisation of the Overburden Management Project), new areas of the NOEF foundation development (i.e. areas at base level) that do not currently contain PAF wastes must include a low permeability liner of 0.5m thickness and maximum saturated hydraulic conductivity of 1×10^{-9} metres per second above which future PAF, NAF and benign materials are to be stored.

21. The Operator must provide funding and assist the Department to establish and operate an independent panel(s) of experts to advise on matters affecting the environmental performance of the NOEF, TSF and mine closure planning.
22. By 13 November 2021 (i.e. within 12 months of date of authorisation of the Overburden Management Project), the Operator must submit a report to the Department for review, detailing the results of relevant studies undertaken to inform the requirements for implementation (including timelines) of a NOEF groundwater seepage interception and recovery system that:
- a. controls seepage to the Barney Creek diversion channel and the McArthur River;
 - b. achieves a recovering trend in the Barney Creek diversion channel and the old McArthur River channel (at SW06) water quality within 20 years of cessation of mining;
 - c. facilitates achieving requirements of Conditions 16 and 17.

Completed: 22 (a) to (c) inclusive

23. By 13 November 2022 (i.e. within 24 months of date of authorisation of the Overburden Management Project), the Operator must submit a NOEF geosynthetic liner cover system plan to the Department for review. The plan must:
- a. outline a process (including timelines) to test and evaluate (i.e. criteria) the constructability and effectiveness of geosynthetic liner cover options including a geosynthetic liner /compacted clay layer combination;
 - b. include implementation of trials on rehabilitated stages of the NOEF;
 - c. identify relevant performance parameters that must be monitored, including but not limited to:
 - i. slope stability during extreme events;
 - ii. cover performance as a result of heat effects;
 - iii. tolerance of the geosynthetic liner to expected differential settlement;
 - iv. veracity of cover longevity predictions;
 - v. likely long-term maintenance requirements.
 - d. Include reporting of trial results and monitoring outcomes:
 - i. within three years from the submission of the plan;
 - ii. every three years thereafter, to the relevant independent panel and the Community Reference Group for review, and shall be audited by the Independent Monitor. The Operator must provide a written response to the Department, if review from the relevant panels and Community Reference Group require matters to be addressed;
 - iii. must be used to inform the AMP and closure planning for the mine.
 - e. The NOEF geosynthetic liner cover system plan, once approved by the Department, must be implemented by the Operator.
24. By 13 November 2025 (i.e. within five (5) years of the date of authorisation of the Overburden Management Project), the Operator must submit a strategy to the

Department that details the long-term disposal management of tailings into the mine pit void, submerged under a suitable depth of pit water. The plan must:

- a. include strategies on the tailings reprocessing and assessment of residual chemical contaminants that may likely impact on meeting the requirements of Condition 16;
 - b. be reviewed by the relevant independent panel.
25. Once approved by the Department, the strategy developed in accordance with Condition 24 must be used to develop a plan five (5) years prior to cessation of mining, for approval by the Department. Any requirement to vary the approved disposal strategy or plan must be:
- a. applied for in writing to the Minister;
 - b. based on leading practice and site conditions;
 - c. supported by the relevant independent panel;
 - d. notified to the NT EPA in accordance with Condition 15.
26. By 13 November 2021 (i.e. within 12 months of date of authorisation of the Overburden Management Project), the Operator must review and synthesise all available and relevant information to submit a revised water monitoring plan (surface water and groundwater) to the Department for review, ensuring the plan is capable of identifying and quantifying impacts of mining activities on the environmental values and beneficial uses of the McArthur River.

Completed: 26

27. The plan required under Condition 26 must:

- a. allow for assessment of compliance with Condition 16 and include sufficient detail to inform/develop/update the AMP;
- b. at a minimum:
 - i. quantify loads of lead and zinc entering the McArthur River each year;
 - ii. quantify impacts to water quality and trends in groundwater to determine that objectives and targets are being met, including the effectiveness of source control to reduce loads to as low as is reasonably practicable;
 - iii. develop appropriate future trigger values for waterways on the mine site and the McArthur River in accordance with the ANZECC Guidelines. In the interim, the trigger values in the most current WDL shall be used;
- c. be prepared in consultation with the NT EPA;

Completed: 27 (a) to (c) inclusive

- d. be prepared in consultation with the relevant independent panel;
- e. once approved by the Department, be implemented by the Operator;

- f. be subject to consultation with the relevant independent panel in the event that the plan requires updating (e.g. to maintain the currency of the monitoring network);
- g. ensure results of the program:
 - i. are reported annually to the Department;
 - ii. are audited by the Independent Monitor every three years;
 - iii. be published on the Operator's website.

28. By 13 May 2022 (i.e. within 18 months of date of authorisation of the Overburden Management Project), the Operator must submit a research and investigation program to the Department for review that establishes the concentration of mine-derived contaminants at which chronic and acute impacts to biota of relevance to the McArthur River system occur using recognised and accepted eco-toxicological testing, and:

- a. the results of this program must be integrated with other relevant programs, monitoring programs and management plans;

Completed: 28(a)

- b. the plan once approved by the Department must be implemented by the Operator.

29. By 13 May 2022 the Operator must provide to the department a monitoring program that provides improved understanding of aquatic ecosystems in the McArthur River from changing water flows, levels and quality. The program must:

- a) be consistent with the aquatic ecology monitoring and management plan required under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Approval 2014/7210;
- b) include monitoring of relevant parameters at appropriate frequencies to allow for implementation of applicable Trigger Action Response Plans (TARPs) included in the Adaptive Management Plan (AMP);
- c) be implemented by the Operator, once approved by the Department.

30. At all times, the Operator must conduct works consistent with the *Northern Territory Aboriginal Sacred Sites Act 1989* and valid AAPA certificate. All conditions of the AAPA certificate must be complied with (including but not limited to NOEF height restrictions), and evidence produced to demonstrate compliance, when requested by the Minister.

31. The Operator must not disturb or encroach within 5m of archaeological site MRM4, until a design of the NOEF is agreed in writing by the Department. Consultation between the Operator and Minister for Arts, Culture and Heritage must be undertaken prior to seeking endorsement of the design.

32. By 13 May 2021 (i.e. within six months of date of authorisation of the Overburden Management Project), the Operator must provide a report to the Minister, and AAPA

or the Minister for Arts, Culture and Heritage (where relevant) that demonstrates the consultation process undertaken or provide a plan to the Minister that details consultation activities and timeliness to identify and engage with appropriate custodians and traditional owners with an interest in land that would be or may be affected by the Overburden Management Project.

Completed: 32

33. By 13 November 2021 (i.e. within 12 months of date of authorisation of the Overburden Management Project), the Operator must develop or revise and submit to the Department for review an existing air quality monitoring plan that monitors sulfur dioxide emissions at an appropriate location between the NOEF and sensitive receptors determined in consultation with NT EPA.

Completed: 33

34. The air quality monitoring plan required under Condition 33 must include:

- a. objectives, locations, frequency of monitoring, trigger values and reporting commitments to manage and protect any potential air quality risk to human health outside of the mineral lease;
- b. evidence of consultation with the NT EPA to be provided at the time of the plan submission;

Completed: 34 (a) and (b)

- c. once approved by the Department, be implemented by the Operator.

35. The results of the air quality plan for each reporting frequency must be:

- a. made available on the Operator's website. Initial monitoring results to be reported within 6 months of the plan being accepted by the Department or an alternative timeframe as agreed in writing with the Department;
- b. incorporated where relevant in the AMP.

36. By 13 November 2022 (i.e. within 24 months of date of authorisation of the Overburden Management Project), the Operator must submit a monitoring and management plan to the Department for review that manages risks of metal toxicity from human consumption of aquatic fauna obtained from the McArthur River. The plan must:

- a. determine if aquatic fauna obtained from any reach of the McArthur River, that may be impacted by the mine's operations, is safe to eat;
- b. include demonstrated evidence of consultation with NT EPA;
- c. detail public reporting of the monitoring results, including at appropriate locations in the Borroloola region;

Completed: 36 (a) to (c) inclusive

- d. include provisions for implementation and maintenance of signage at waterways at the MRM site in accordance with the requirements of Condition 62 until the risk of contamination from consumption of this aquatic fauna is demonstrated to be acceptable by the Department;
 - e. once approved by the Department, be implemented by the Operator.
37. By 13 November 2022 (i.e. within 24 months of date of authorisation of the Overburden Management Project), the Operator must submit a plan to the Department for review that outlines a monitoring program for management of Largetooth Sawfish. The plan must:
- a. include a sampling strategy for Largetooth Sawfish that is non-lethal;
 - b. include details of parameters and criteria, from which the results could be used to define specific (measurable and time-bound) performance indicators to abate a significant decline in Largetooth Sawfish movement;
 - c. include trigger levels for investigation and implementation of management measures;
- Completed: 37 (a) to (c) inclusive**
- d. once approved by the Department, be implemented by the Operator.
38. Within six months following the establishment of the required panels and groups in accordance with Condition 21, the Operator must:
- a. develop environmental objectives for a Care and Maintenance Plan in consultation with the relevant Independent Panels, CRG, custodians and traditional owners;
 - b. submit this to the Department for review.
39. By 13 November 2025 (i.e. within five years of date of authorisation of the Overburden Management Project), the environmental objectives arising from Condition 38 must be used to develop a Care and Maintenance Plan in consultation with the Department.
40. The Operator must facilitate an independent third-party assessment of the security for rehabilitation of disturbances resulting from authorised activities in the approved MMP that is consistent with requirements under Conditions 10, 11 and 12, to the satisfaction of the Department, and every 3 years thereafter if the security has been re-calculated or adjusted.
41. The Operator, consistent with Condition 40, must:
- a. commission a qualified person to review the security amount whose appointment is accepted by the Minister;
 - b. ensure that the security is reviewed and delivered to the Department within six months of acceptance of the qualified person.

42. For every approved MMP and MMP amendment, the Operator must provide a revised copy of the approved document that removes commercially sensitive information, includes an overview and environmental section, and is suitable for publication on the Department's website, or provide written approval to make the complete documents publicly accessible.
43. The Operator must assist, as required, the Department to establish and operate a Community Reference Group (CRG).
44. By 13 May 2022, (i.e. within 18 months of date of authorisation of the Overburden Management Project), the Operator must undertake a synthesis of all environmental monitoring programs (Condition 26) that assess impacts of mining activities on the environmental values and beneficial uses of the McArthur River, in accordance with NT EPA's overarching environmental outcome. The revised monitoring programs must:
- a. use outputs generated for review and synthesis of water monitoring programs, as part of addressing Condition 26;
 - b. demonstrate how all monitoring data collected under various monitoring programs and management plans were considered and synthesised (e.g. conceptual site models, trend analysis);
 - c. be incorporated in the AMP.

Completed: 44 (a) to (c) inclusive

45. By 13 May 2022, (i.e. within 18 months of date of authorisation of the Overburden Management Project), the Operator must submit an AMP to the Department:
- a. The AMP must include the following key elements:
 - i. clear, measurable environmental objectives for all significant environmental risks and potential impacts;
 - ii. measureable performance indicators to show that objectives are on target to be met;
 - iii. pre-determined triggers to warn of potential for performance indicators to be exceeded, as informed by monitoring;
 - iv. realistic and achievable contingency interventions to maintain performance indicators if triggers are consistently exceeded;
 - v. clearly defined management measures/actions that are capable of being implemented in a timely way to meet performance indicators and environmental objectives;
 - vi. monitoring in accordance with relevant Recommendations in NT EPA Assessment Report 86 to determine whether management measures are effective and to inform the need for adjustments to management measures or need for alternatives;
 - vii. a continual feedback system to inform appropriate actions to be initiated when triggered and environmental objectives are always being met;

- viii. continual development of new management actions as required based on knowledge gained from experience at the site and elsewhere across industry.

Completed: 45 (a) (i) to (viii) inclusive

- b. The AMP must be reviewed by the Independent Monitor or an appropriately qualified, independent third party, and updated with inputs from the CRG (once established under Condition 43);
- c. all review findings and CRG input requirements are to be provided to the Department for approval.

46. Unless agreed otherwise in writing by the Department, the AMP must:

- a. clearly set out the required management objectives and performance indicators;
- b. provide clarity on the triggers for changes to management actions, and responsibility and evidentiary basis for decision-making;
- c. establish the timeframe for initiation of certain actions if triggers are exceeded, including decisions to discontinue an activity and clarify responsibility and evidentiary basis for decision-making;
- d. establish a process for adjusting triggers that includes the regulator;
- e. establish transparent monitoring, reporting and review requirements;
- f. establish processes to achieve transparency and stakeholder engagement in AMP design and implementation that includes NT EPA, DCCEEW and CRG;
- g. set out the mechanism for periodic review by the Independent Monitor, which must not exceed a frequency of every three years;
- h. be provided to the Department for re-approval in the event that any material changes are made to the AMP.

47. The Operator must provide written notice to the Minister and to the NT EPA where trends indicate performance indicators and environmental objectives will not, or are unlikely to be, met by implementing the AMP.

Independent Certifying Engineer (ICE)

48. The Operator must appoint an Independent Certifying Engineer (ICE) to:

- a. warrant and accept both the design and construction works;
- b. be present during all phases of construction where required in the approved MMP (including at hold points) and oversee and certify the works that they meet design specifications;
- c. approve re-commencement of construction at defined hold points;
- d. approve any material changes to the design during construction;
- e. verify any monitoring equipment/structure installed or to be installed as part of the construction as specified in the relevant detailed designs remains functional at the conclusion of the construction works;

- i. in the event such equipment becomes non-functional, then replacement or an ICE approved alternative must be implemented by the Operator;
 - f. agree in writing, if the Operator wish to appoint an Operator's project manager/resident engineer as an onsite representative, and agree in writing that this does not diminish the ICE's responsibility or liability for the project;
 - g. on completion of construction, provide a certified "as-constructed" construction report detailing:
 - i. all the works undertaken;
 - ii. evidence of:
 - a) hold-point sign-offs;
 - b) testing carried out (including but not limited to field tests, laboratory tests and statistical tests);
 - c) acceptance criteria applied and compliance of the test results with the acceptance criteria;
 - d) where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised.
49. The Operator must ensure that the ICE holds appropriate public and professional indemnity insurance to cover the scope of works associated with the scope of work certified.

Independent Tailings Review Board (ITRB)

50. The Operator must:

- a. convene an advisory board (Independent Tailings Review Board or **ITRB**);
- b. ensure the ITRB:
 - i. membership includes independent geotechnical, tailings, and groundwater specialists;
 - ii. meets regularly to advise on operation of the TSF and any future modifications to its design;
 - iii. is required to meet within 90 days from commencement of construction to allow sufficient time for review of subsequent modification to the TSF;
- c. provide details of the members of the ITRB panel and meeting frequency to the Department for endorsement by the Department;
- d. together with the ICE, provide a written response to the satisfaction of the Department, in the event that future review of the designs by independent experts require additional matters to be addressed;
- e. ensure ITRB endorses any future modifications to the TSF in writing, with all ITRB review comments appropriately addressed for both construction and future use of the structure. This includes, but is not limited to:

- i. Studies and/or trials to inform future construction and/or operation of the structure;
- ii. The TSF Operations, Maintenance and Surveillance (OMS) manual, including the Trigger, Action and Response Plan (TARP) is updated regularly to accommodate any relevant changes to the structure that may impact on its stability and performance.

Waste Rock Management

51. From the date of authorisation Non-benign Waste is to be permanently placed consistent with the approved MMP:

- a. above the 100 year ARI flood level, unless flood mitigation measures are provided consistent with the approved MMP and relevant Detailed Designs submitted to the Department in accordance with the conditions of this variation of Authorisation, with the exception of PAF(RE);
- b. on a compacted clay liner (CCL) or low permeability material that satisfies the design objective in Condition 20 that slopes towards a Perimeter Runoff Dam (PROD) or an appropriately lined storage structure, as defined in Condition 58.a;
- c. PAF is emplaced in lift heights that minimises particle size segregation and creation of chimney structures, and must not exceed 7.5m taking into construction tolerances;
- d. PAF(RE) is emplaced in dedicated cells in lift heights that minimises particle size segregation and creation of chimney structures, but must not exceed 2m taking into construction tolerances;
- e. advection barriers of appropriate thickness and moisture condition are emplaced at suitable intervals that disrupt the formation of oxygen convection cycles;
- f. the ICE verifies the suitability of the PAF placement methodology with respect to particle size segregation and advection barriers;
- g. construction of the NOEF stages, as defined in Conditions 52 and 53 is undertaken in accordance with a valid AAPA certificate;
- h. design of the NOEF is flexible to accommodate changes, if required, to comply with archaeological site MRM4 matters under Condition 31;
- i. in the event that future review of the designs or as-built structure by independent experts require additional matters to be addressed, the Operator together with the ICE must provide a written response to the satisfaction of the Department;
- j. at mine closure, non-benign waste rock is encapsulated and fully contained within an engineered cover system consistent with the Overburden Management Project, or an alternative cover system endorsed by the relevant independent technical panels to the satisfaction of the Department.

Construction of NOEF

Construction of the NOEF has occurred in stages. Conditions placed on construction of the various stages has been subject to change with the issuing of variations of Authorisation incorporating conditions appropriate for that point in time.

52. From the date of authorisation of the Overburden Management Project, the Operator is approved to construct, operate and maintain the following stages for permanent placement of Waste Rock in the NOEF:

- a. West A, B, C and D;
- b. CW (alpha, bravo and charlie);
- c. CE (alpha and bravo);
- d. SE;
- e. NW;
- f. NE.

53. The Operator must develop the NOEF Stages defined in Condition 52 in accordance with Concept designs presented in the approved MMP.

54. During construction of the NOEF, the Operator must ensure:

- a. engagement of the ICE consistent with Condition 48;
- b. waste rock management requirements comply with Condition 51.

Remaining Waste Rock Management Facilities

55. From the date of authorisation of the Overburden Management Project, temporary placement of non-benign waste is authorised for the following:

- a. EOE (except for PAF(RE));
- b. stockpiles on NOEF, SOEF and WOE;
- c. ROM Pad;
- d. any other location approved by Department in writing.

56. The Operator must ensure that non-benign waste temporarily placed outside of the NOEF:

- a. has suitable water management structures (e.g. drains and sumps) in place to contain and manage poor quality drainage in accordance with the approved MMP;
- b. has installed water diversion structures that allow segregation of mine-affected drainage from non-mine affected drainage;
- c. has monitoring and management measures, in accordance with the AMP, implemented to ensure environmental objectives defined in the approved MMP are satisfied;
- d. is removed and managed at cessation of mining in accordance with the approved MMP;

- e. is removed and managed in accordance with the approved MMP in the event of unplanned closure;
- f. has oversight provided by ICE as per Condition 48.

Ore Processing and Milling

- 57. Surface water management infrastructure associated with the lead filtration facility at the Mine must be suitably designed and constructed to contain a 100 year ARI rainfall event.
- 58. From the date of authorisation of the Overburden Management Project, the Operator is authorised to expand the ore processing and associated milling and storage facilities in accordance with concepts and management systems detailed in the approved MMP including:
 - a. ensuring the structures to be developed are suitably designed and constructed to allow management of poor quality drainage in accordance with the Water Management Plan that is generated from the construction and future operation of the structures;
 - i. construction and development of Gypsum Plant;
 - ii. construction and development of Caustic Facility;
 - iii. construction and development of Reagent Mixing Facility;
 - iv. construction and development of Copper Mud Facility;
 - v. construction and development of Lead Concentrate Storage Facility;
 - vi. expansion of the concentrate storage shed and use of external hardstand area;
 - b. Wastes generated from the operation of the Gypsum Plant must be managed in accordance with Condition 63.

Water management and storage

- 59. Until the AMP (including Environmental Management Plans and sub-plans) is approved by the Department in writing, the Operator must prepare, review and include the following for each MMP and where appropriate each MMP amendment, a Water Management Plan which includes:
 - a. modelling of surface water at and around the Mine;
 - b. a whole of Mine water balance which takes account of the modelling of surface water;
 - c. calibration of the modelling of surface water to confirm its accuracy;
 - d. a written plan detailing how water at the Mine will be managed for the forthcoming wet season;
 - e. a plan of actions which will be undertaken to reduce the risk of any releases from AMD storage structures;

- f. a plan of actions, including engineers' reporting schedules, which will be undertaken to ensure the structural integrity of all AMD storage structures;
- g. a plan of actions which will be undertaken to ensure seepage from AMD storage structures is minimised including, where required, timelines for repairing damaged or installing new seepage management infrastructure.

Completed: 59 (a) to (g) inclusive

60. From 13 November 2020 (i.e. the date of authorisation of the Overburden Management Project), water-related activities involving interfering with waterway and water extraction must be undertaken in accordance with the *Water Act 1992*, and where required, appropriate licenses/approvals are obtained from the responsible agency prior to commencement of the works. The Operator must ensure:
- a. activities involving disturbance must not commence until required studies and/or trials to inform future design, construction and/or operation, as detailed in the approved MMP, are completed;
 - b. works are conducted in accordance with a valid AAPA certificate;
 - c. detailed designs, where nominated in the approved MMP, are developed and implemented in consultation with required experts, including but not limited to ecology, engineering and any other experts as appropriate;
 - d. regular inspections and maintenance are undertaken to ensure design objectives continue to be satisfied.
61. The Operator must complete translocation of the Purple-crown Fairy Wren in accordance with the approved MMP, prior to commencement of works on the Old McArthur River Channel plug.

Completed: 61

62. The Operator must erect and maintain warning signage that:
- a. is permanent and weatherproof;
 - b. contains specific wording agreed to by the Chief Health Officer (CHO) of the Northern Territory;
 - c. is located:
 - i. at appropriate distances and frequency along the waterway;
 - ii. as a minimum at all access points, including but not limited to crossings, vehicle tracks and walking tracks.
 - iii. along the length of:
 - a. Barney Creek downstream to its junction with the McArthur River;
 - b. Barney Creek upstream to a point a short distance upstream of where the Carpentaria Highway crosses Barney Creek;

- c. Surprise Creek to approximately the location of SW29;
 - d. the Bing Bong shipping channel and in the immediate area surrounding the shipping channel and the swing basin, unless otherwise agreed in writing by the CHO and the Department.
63. Wastes generated from operation of the Water Treatment Plant and Gypsum Plant must be disposed of in accordance with concepts and management systems detailed in the approved MMP, ensuring:
- i. trials for the permanent disposal of Gypsum Plant and Water Treatment Plant wastes must be undertaken to inform final material placement;
 - ii. the ITRB or an approved qualified and experienced independent third party endorse the waste disposal strategy, if the wastes are to be placed in the TSF; or
 - iii. the ICE or an approved qualified and experienced independent third party endorse the waste disposal strategy, if the wastes are to be placed in the NOEF.
64. Water storage structures into which the Operator places or directs AMD must be designed, constructed and managed by the Operator to minimise to as low as reasonably practicable contaminants entering the Receiving Environment. In this regard the water storage structures into which the Operator is authorised to place or direct AMD whilst they continue to meet the requirements of this Condition are as follows:
- (a) NOEF Southern Perimeter Runoff Dam (SPROD)
 - (b) NOEF South East Perimeter Runoff Dam (SEPROD)
 - (c) NOEF Western Perimeter Runoff Dam (WPROD)
 - (d) NOEF Eastern Perimeter Runoff Dam (EPROD)
 - (e) Mill Anti-Pollution Pond (Mill APP)
 - (f) Mill Concentrator Runoff Pond (Mill CRP)
 - (g) Open Pit Van Duncan's Dam (OP VDD)
 - (h) Open Pit Pete's Pond (OP PP)
 - (i) Open Pit Lake Archer (OP LA)
 - (j) Mill Old Stores Dam (Mill OSD)
 - (k) Open Pit Pond 2 (OP P2)
 - (l) NOEF West D Sump (WDS)
 - (m) NOEF Mine Infrastructure Area Sump (MIAS)
 - (n) NOEF West A Sump (WAS)

- (o) NOEF North East Alpha Sump (NEAS)
- (p) NOEF North West Sump (NWS)
- (q) NOEF North East Stilling Basin (NESB)
- (r) NOEF Central East Bravo Sump (CEBS)
- (s) NOEF South Stilling Basin (SSB)
- (t) NOEF South East Alpha Sump (SEAS)
- (u) NOEF North East Bravo Sump
- (v) NOEF North West Stilling Basin
- (w) NOEF South West Stilling Basin
- (x) NOEF Diamond Sump
- (y) Southern Overburden Emplacement Facility Sump (SOEF Sump)
- (z) EOEf Low Grade Sump (LGS)
- (aa) Bing Bong Surface Runoff Pond 1 (BBSRP1)
- (bb) Bing Bong Surface Runoff Pond 2 (BBSRP2)
- (cc) Bing Bong Surface Runoff Pond (BBSRP3)

Water Transfer and Discharge

65. The Operator must not transfer water to or discharge water from any water storage structure until:
- a. water quality analysis has been received and interpreted by the Operator;
 - b. results confirm the water is suitable for the destination, having regard to the requirements of this document, the approved MMP and any other relevant restrictions on transfer or discharge of water within or from the Mine.
66. The Operator is authorised to undertake works to release water from WMD to Little Barney Creek in accordance with previous approvals as defined in Schedule B.
67. From the date of authorisation of the Overburden Management Project, water releases are authorised from the following points:

Authorised Release Points	Receiving Water Body	Location Coordinates	
		Latitude	Longitude
WMD	Little Barney Creek	-16.42635	136.0693
Mine Levee Release Point (MLRP)	Barney Creek Diversion	-16.42743	136.1114

South-East Levee 1 Release Point (SEL1 RP)	Barney Creek Diversion	-16.42394	136.1082
McArthur River Diversion Channel Release Point ¹¹	McArthur River Diversion	-16.435385	136.120196

68. The Operator must:

- a. ensure all offsite water discharges are undertaken in accordance with a valid WDL;
- b. only release water for offsite discharge from the WDL approved points;
- c. interpret and report all data and results acquired as part of the activity in the Operator's Annual Environmental Mining Report;
- d. evaluate the performance of this activity in terms of its effectiveness as a management tool;
- e. by 30 June 2020, characterise total loads of mine-derived contaminants from all source inputs for the 2017-2018 period consistent with Condition 16.b, unless otherwise agreed in writing by the Department.

Completed: 68(e)

69. The Operator must in relation to the WMD release point to Little Barney Creek undertake:

- a. release activity that minimises localised erosion, and utilises suitable energy dissipation and flow spreader structures (e.g. rock basin) and be monitored daily during release events;
- b. remediation in the event of unacceptable erosion occurring at the Carpentaria Highway culvert system to the satisfaction of the Department of Infrastructure, Planning and Logistics and the Department;
- c. a cross-section profile survey immediately up-stream and down-stream of the Carpentaria Highway crossing, prior to and following each wet season;
- d. each wet season quantification of any significant changes to creek morphology as function of time by documenting at a minimum morphology prior to first water release, and following the last water release. This could be achieved, for example, using a drone survey of the drainage system between the flow outlet and Barney Creek Diversion using a consistent flight path, with the resulting image overlaid on appropriately sized grid (e.g. 2.5 x 2.5 m);
- e. measure and record flow duration, flow rate and volume of all water released from WMD into Little Barney Creek;
- f. ensure all evidence of continuous flow in Little Barney Creek along the length of the drainage system between WMD release outlet and Little Barney Creek Diversion Channel is available for inspection;

¹¹ Subject to approval by the responsible agency

- g. ensure the surface water monitoring schedule for the activity includes SW06, which must be assessed for identical parameters as defined for SW03. At monitoring points SW03 and SW06:
 - i. Field parameters must also be measured daily during water release from WMD into Little Barney;
 - ii. The surface water monitoring analytical suite must include thallium, boron and cobalt;
 - iii. The surface water monitoring must be continued for a further two weeks following completion of the release activities for the season or until field parameters have returned to baseline levels;
 - h. measure total loads of analytes (including lead and zinc) from all controlled discharge activities entering McArthur River at location SW06 or an alternate location as agreed by the Department; and
 - i. interpret the data acquired as part of the activity and its effectiveness and report in the Operator's Annual EMR in accordance with Condition 9.
70. The Operator is authorised to undertake water management trial/s in accordance with:
- a. concepts detailed in the approved MMP, ensuring the trial/s is designed to manage and control all impacted surface water runoff in accordance with the Water Management Plan:
 - i. Irrigation of Treated Water – Open Woodland Irrigation;
 - ii. Irrigation of Treated Water – Phytoremediation;
 - iii. Lowering of surface water elevations – Evapotranspiration;
 - iv. Sulfate Treatment System – Passive engineered wetland;
 - iv. Sulfate Treatment System – Active Bioreactor;
 - b. detailed designs, where nominated in the approved MMP, are developed in accordance with the concepts outlined in the approved MMP, and endorsed by a relevant independent third party, prior to construction.
71. At the conclusion of the trials in Condition 70, the Operator must apply in writing to the Department for approval of full-scale implementation.
72. Water management using the Centre Pivot Irrigator is authorised:
- a. within the Mine Levee in accordance with the concept previously approved, as defined in Schedule B;
 - b. adjacent to the TSF in accordance with the concept presented in the approved MMP;
 - c. to be configured to maximise evaporation and minimise surface spray drift, surface runoff and infiltration into underlying natural soils.

Perimeter Run-Off Dams – SPROD, SEPROD, WPROD and EPROD

73. The Operator is approved to develop SPROD and SEPROD in accordance with relevant documents defined in Schedule B;

74. The Operator is authorised to complete works to construct EPROD and WPROD in accordance with following:

a. EPROD:

- i. as previously approved and defined in Schedule B, ensuring that only benign material be used in the construction of the western embankment wall;

b. WPROD:

- i. CWNOEF and NOEF West D Amendment, as defined in Schedule B; and
- ii. WPROD and Western Surface Water Management Design Update (GHD Memo), as defined in Schedule B.

75. The Operator must:

(1) Construct EPROD and WPROD informed by the following monitoring regime in the event groundwater dewatering is necessary:

- a. six hourly monitoring of field parameters for the first 24 hours of dewatering. Should parameters not stabilise during the first 24 hours then six hourly monitoring must continue until stabilisation has occurred;
- b. field parameters must be taken daily following the first 24 hour period. Should parameters change more than 20% then the frequency must increase to every 12 hours until parameters have stabilised;
- c. field parameters must include pH, specific electrical conductivity (SEC), temperature, REDOX and dissolved oxygen;
- d. water samples must be taken and analysed at the commencement of dewatering at the end of the first 24 hours, and then weekly sampling and analysis of dewatering water for the remainder of the construction;
- e. additional sampling and analysis must be undertaken if there is a substantial change in field parameters (approximately 30%);
- f. analysis must include: specific electrical conductivity (SEC), major ions (Ca, K, Mg, Na, Cl, CO₃, HCO₃ and SO₄), Al, As, Cd, Co, Cu, Fe, Mn, Ni, Pb, Se and Zn;
- g. field parameters and samples for analysis must be taken from the dewatering source, not the receiving storage;
- h. if flow meters fail, then dewatering must cease until they are repaired or replaced;
- i. field water quality parameters, flow meter volumes and laboratory analysis must be submitted to Department on a monthly basis;
- j. any indication of fracturing and/or caverns (Karstification/dissolution features) must be recorded during logging along with water strikes and estimated yields during drilling;

(2) Prior to use of the structure, submit to the Department construction reports including QA and QC data endorsed by the ICE within 60 days of construction being completed.

Tailings storage facility

76. From the date of authorisation of the Overburden Management Project, tailings must be managed in accordance with the following:
- a. be deposited only in Cell 1, Cell 2 or combined Cell 1 and Cell 2;
 - b. any construction of tailings lift, as approved in Condition 79, be reviewed and endorsed by independent oversight requirements in Condition 48 and 50 or an alternative independent qualified and experienced third party approved by the Department in writing;
 - c. construction of the TSF lifts is undertaken in accordance with a valid AAPA certificate;
 - d. the TSF Seepage Interception Trench is fully operational by end of December 2020;
 - e. in the event that future review of the designs or as-built structure by independent experts require additional matters to be addressed, the Operator together with the ICE must provide a written response that justifies the existing design or proposes an alternate design to the satisfaction of the Department.

TSF Cell 1 and 2 Construction

77. From the date of authorisation of the Overburden Management Project, the Operator is approved to develop TSF Cell 1, Cell 2 and Combined Cell 1 and 2 lifts in accordance with:
- a. McArthur River Mining Pty Ltd, Tailings Storage Facility, Design Development – Life of Mine Plan, May 2017, as defined in Schedule B;
 - b. the approved MMP for the following stages:
 - i. Cell 1 Raise 4 – 10,056.0 mRL;
 - ii. Cell 1 Raise 5 – 10,059.0 mRL;
 - iii. Cell 2 Raise 6 – 10,061.0 mRL;
 - iv. Cell 2 Raise 7 – 10,061.5 mRL;
 - v. Combined Cell 1 and 2 Raise 1 – 10,062.6 mRL;
 - vi. Combined Cell 1 and 2 Raise 2 – 10,063.8 mRL;
 - vii. Combined Cell 1 and 2 Raise 3 – 10,065.0 mRL;
 - viii. Combined Cell 1 and 2 Raise 4 – 10,066.2 mRL;
 - ix. Combined Cell 1 and 2 Raise 5 – 10,067.4 mRL;
 - x. Combined Cell 1 and 2 Raise 6 – 10,068.6 mRL;
 - xi. Combined Cell 1 and 2 Raise 7 – 10,069.8 mRL;

- xii. Combined Cell 1 and 2 Raise 8 – 10,071.0 mRL;
- xiii. Combined Cell 1 and 2 Raise 9 – 10,072.2 mRL;
- xiv. Combined Cell 1 and 2 Raise 10 – 10,073.4 mRL;
- xv. Combined Cell 1 and 2 Raise 11 – 10,074.6 mRL;
- xvi. Combined Cell 1 and 2 Raise 12 – 10,075.8 mRL;
- xvii. Combined Cell 1 and 2 Raise 13 – 10,077.0 mRL;
- xviii. Combined Cell 1 and 2 Raise 14 – 10,078.0 mRL.

78. For each lift, the Operator must ensure detailed designs follow the approved McArthur River Mining Pty Ltd Tailings Storage Facility Raising General Specification for Design and Construction; with oversight provided by the ICE consistent with Condition 48.

TSF Management

79. The Operator must operate and maintain the TSF in accordance with the most up-to-date TSF Operations Maintenance and Surveillance manual, ensuring:

- a. no discharge of water into the TSF unless
 - i. it is water contained within the Tailings stream which is at normal operational slurry densities; or
 - ii. It is endorsed by the ITRB;
- b. all Tailings are deposited sub-aerially to allow proper beaching and drying between deposition cycles;
- c. surface water levels are maintained in the TSF such that they do not come into contact with the embankment internal walls;
- d. phreatic surface is managed to avoid compromising the integrity of the embankment.

80. The Operator must provide quarterly to the Minister a written status report on the seepage and management of seepage from the TSF, including the following:

- a. water levels in the TSF;
- b. all monitoring data associated with the seepage (including geotechnical and environmental monitoring);
- c. flow rate of each seep;
- d. all actions undertaken during the quarter associated with the seepage and management of Tailings;
- e. all actions planned for the next quarter associated with seepage and management of Tailings.¹²

¹² Section 37(3)(d) of the *Mining Management Act 2001*.

Geochemical, Geotechnical and Hydrogeological Assessments and Investigation Drilling

81. The Operator is authorised to undertake Drilling Investigations as outlined in relevant approved plans defined in Schedule B and approved MMP, ensuring adherence to industry best practice:
- i. in order to collect samples for waste rock characterisation and geochemical and geotechnical analyses;
 - ii. to characterise available construction and rehabilitation materials available within the Mine Levee Wall (including the pit) and areas surrounding the TSF and NOEF;
 - iii. to enable geochemical assessment of the overburden emplacement facility and underlying sediments;
 - iv. to obtain hydrogeological information associated with pit inflows, groundwater inputs into the underground void and installation of additional monitoring bores to inform site management.
82. The Operator must ensure the disturbances from the drilling and site investigation activities are rehabilitated consistent with industry best practice.
83. Characterisation data from the drilling must be kept and made available to the Minister on request; and reported in the Operator's EMR or an alternative format as agreed with the Department.
84. All documentation relating to the investigations undertaken is to be made available to the Department on request.
85. On completion of the investigation the disturbances are to be rehabilitated in accordance with the approved MMP and the basis for the proposed adjustment of total security adjustments required under Condition 11, are provided in the annual Unplanned Closure Plan report to the satisfaction of the Department.

Exploration

86. The Operator must ensure that:
- a. works are undertaken in accordance with management systems detailed in the approved MMP;
 - b. an environmental management plan is in place that addresses:
 - i. chemical use and storage (e.g. hydrocarbons, drilling fluids);
 - ii. erosion and sediment control;
 - iii. dust;
 - iv. associated risks common for exploration works;
 - c. rehabilitation is undertaken for locations not needed for further use;

- d. an exploration rehabilitation report including details regarding the status of disturbance, rehabilitated drill holes and the basis for the proposed adjustment of total security subject to Conditions 10, 11 and 12, be prepared, submitted and implemented to the satisfaction of the Department.

Non-mineral Waste Management

87. The Operator is authorised to complete works to prepare and construct a Centralised Waste Facility (CWF) for management of general, contaminated and putrescible wastes, in accordance with:
- a. concept designs presented in the document entitled *McArthur River Mine Mining Management Plan Amendment, January 2019*, as defined in Schedule B, ensuring:
 - i. detailed designs follow the approved concepts for the facility (including 100 year ARI flood immunity, CCL and protective armour, drainage works and biosecurity control);
 - ii. the structure design and construction is undertaken in accordance with independent oversight consistent with Conditions 48 and 50;
 - iii. detailed designs include allowances for the installation of an adequate number of monitoring bores at suitable locations to monitor the environmental performance of the structure with respect to contaminant seepage. These monitoring locations must be integrated and reported within the site-wide water monitoring requirements.
88. The Operator must ensure the non-mineral waste facility, landfill or equivalent previously in use is rehabilitated following approval by the Department of a rehabilitation plan.

Rehabilitation Trials

89. The Operator is authorised to undertake the following rehabilitation trials, in accordance with concepts defined in relevant documents in Schedule B and the approved MMP:
- a. Construction Test Pads (CTP) on NOEF West stage;
 - b. PAF(RE) Cell and Cover System Performance on NOEF Southeast stage;
 - c. Mine Levee revegetation.
90. The Operator must ensure all contaminated runoff is contained and managed within the water management circuit and as detailed in the Water Management Plan.

Bing Bong Loading Facility

91. Dredging activities at the Bing Bong Port Facility are authorised, subject to:
- a. submission to the department of a Dredging and Dredge Spoil Management Plan;
 - b. approval of the Plan by the Department;

- c. subsequent provision of any required additional information (including but not limited to detailed designs) and written acceptance by the Department, prior to commencement of dredging.

Environmental Monitoring and Management

92. Environmental monitoring for the McArthur River Mine site (including BBLF) must be undertaken in accordance with requirements in Schedule D and reported as part of Condition 9.

Adaptive Management

93. By 13 November 2021 (i.e. within 12 months of the date of authorisation of the Overburden Management Project), the Operator must submit a revised AMP as required under Conditions 45.

Completed: 93

94. The revised AMP must:

- a. address the comments from the Independent Monitor or independent third party review of the draft AMP and ensuring compliance with Condition 45;
- b. be consistent with the AMP required under the *Water Act 1992* and *Environment Protection and Biodiversity Conservation Act 1999*;
- c. be reviewed by a Department approved independent third-party at the discretion of the Minister;
- d. be approved by the Minister;
- e. once approved, be implemented in full.

95. Any material changes to the AMP required by Condition 94 must be re-approved by the Minister.

Mine Closure

96. From the date of authorisation of the Overburden Management Project, the Operator must submit an updated Mine Closure Plan with each Amended MMP that builds upon the closure concepts defined in the Overburden Management Project.

97. The Mine Closure Plan required under Condition 96 must:

- a. detail how key mine domains will be rehabilitated to achieve the Overburden Management Project closure objectives;
- b. address outcomes of the reviews by independent technical and closure panels in accordance with Condition 21 with respect to mine closure;
- c. incorporate relevant outcomes from rehabilitation trials defined in Condition 89.

98. Five years prior to the planned closure of the mine, the Operator must:

- a. finalise the Mine Closure Plan required under Condition 96;
- b. submit to the Department the plan for approval by the Minister;

- c. implement the Mine Closure Plan in full, following its approval.

Unplanned Mine Closure

- 99. From 13 November 2020 (i.e. the date of authorisation of the Overburden Management Project), the Operator must annually submit to the Department, unless otherwise agreed in writing by the Department, an Unplanned Mine Closure Plan on or before 31 August, starting 2021, that is accompanied by a related security estimate.

Independent monitoring assessment Conditions

- 100. The Operator must comply with the clauses pertaining to it in SCHEDULE C - INDEPENDENT MONITORING ASSESSMENT CONDITIONS.

SCHEDULE B – PREVIOUSLY APPROVED MMP AND MMP AMENDMENTS

1. Sustainable Development Mining Management Plan 2013-2015 Volumes 1 and 2 dated 3 March 2015 approved by the Minister under the Act on 23 December 2015; and
2. Approved amendments to the Mining Management Plan entitled:
 - a) McArthur River Mining Pty Ltd – Cell 2 Raise 3 Detailed Design Report – Revision 2 April 2015 (GHD Report);
 - b) McArthur River Mining Pty Ltd – Southern PAF Run Off Dam (SPROD) – Dam Lining Upgrade Design Report – August 2016 (GHD Report);
 - c) McArthur River Mining Pty Ltd – TSF Cell 2 – Raise 4 to RL 10057 m Detailed Design Report - February 2017 (GHD Report);
 - d) CWNOEF and NOEF West D Amendment - Construction according to Phase 3 EIS. This MMP Amendments included presentation to officers of the Department, MRM's 2016 - 2018 Waste Plan, Additional information provided by MRM to the Department during February 2016, meeting between MRM and the Department to discuss the amended MMP, presentation to Departmental officers on kinetic testing and waste classification and additional information provided by MRM to the Department during March 2016. This MMP Amendment approval is associated with all of these documents;
 - e) Western PAF Run-Off Dam (WPROD) and Western Surface Water Management Design Update (GHD Memo);
 - f) Design Basis for the Lead Sulphate Filter Plant - Attachment D of Additional Information lodged 01/05/2015);
 - g) McArthur River Mining Pty Ltd – TSF Cell 2 – Raise 5 to RL 10059 m Detailed Design Report - May 2018 (GHD Report);
 - h) McArthur River Mining Pty Ltd – Eastern Perimeter Runoff Dam - Detailed Design Report – March 2018 (GHD Report);
 - i) Letter dated 11 May 2018 from McArthur River Mining Pty Ltd regarding Mining Management Plan Amendment – EPROD and Drilling Investigations;
 - j) Letter dated 12 September 2018 from McArthur River Mining Pty Ltd regarding Mining Management Plan Amendment – Central West Charlie Stage Foundation works. This amendment also includes additional information provided by MRM on 21 September 2018 in relation to groundwater, Central West Charlie Stage Foundation underdrainage and security;
 - k) Letter dated 5 March 2018 from McArthur River Mining Pty Ltd regarding Mining Management Plan Amendment – Additional Water Release. This amendment also includes additional information provided by MRM on 31 October 2018, 26 November 2018 and 14 December 2018;

- l) *McArthur River Mine Mining Management Plan Amendment, January 2019*, including all appendices. This amendment includes:
- i. additional information provided by MRM on 26 February 2019, 26 March 2019, 28 March 2019, 5 April 2019 and 18 April 2019;
 - ii. McArthur River Mining Pty Ltd – TSF Cell 1 Stage 4 – Raise to RL 10056, Detailed Design Report, March 2018, Revision 1;
 - iii. McArthur River Mining Pty Ltd – Tailings Storage Facility, Design Development – Life of Mine Plan, May 2017, Revision 2;
 - iv. McArthur River Mining Pty Ltd – Tailings Storage Facility Seepage Interception Trench Design, January 2018, Revision 1.
- m) *McArthur River Mine Mining Management Plan Amendment, January 2020, Version 1*, as related to construction of TSF Cell 1, Stage 5 lift only, including information provided to the Department by MRM on 30 July 2020 and 31 July 2020.

SCHEDULE C - INDEPENDENT MONITORING ASSESSMENT CONDITIONS

This Schedule is provided for the purpose of providing both the Operator and the Department with transparent reference to what is known as the "McArthur River Mine – Independent Monitoring Assessment Conditions". These were introduced in 2006 when the Mine transitioned from underground workings to open pit mining.

1. The purpose of the McArthur River Mine – Independent Monitoring Assessment Conditions" is to establish and set out the operational requirements for an independent monitoring assessment of the environmental performance of the Mine.
2. These Conditions may be cited as the "McArthur River Mine – Independent Monitoring Assessment Conditions".
3. The purpose of these Conditions is to establish and set out the operational requirements for an independent monitoring assessment of the environmental performance of the Mine.
4. The Department will engage an Independent Monitor to undertake the independent monitoring assessment.
5. The Operator and the Department acknowledge that this independent monitoring assessment is in addition to their respective obligations and statutory responsibilities in relation to the Mine.
6. The Independent Monitor will:
 - a) monitor the environmental performance of the Mine by reviewing:
 - i. environmental assessments and monitoring activities undertaken by the Operator; and
 - ii. environmental assessments and audits undertaken by the Department; and
 - b) report to the Operator and the Department any urgent issues requiring investigation and reporting.
7. The Independent Monitor will not review:
 - a) Mine safety; or
 - b) social issues arising from the operation of the Mine in the McArthur River Region.
8. The Department will engage an Independent Monitor in accordance with its procurement processes.
9. The Independent Monitor may be (in order of preference):
 - a) an environmental or mining agency in another jurisdiction in Australia; or
 - b) a university having the necessary expertise; or
 - c) an environmental consultant that has the necessary expertise, relevant experience and the necessary resources.

10. Prior to advertising a tender seeking to engage an Independent Monitor, the Department must provide the Operator with a copy of the proposed tender documentation, including:
 - a) the Conditions of tendering; and
 - b) the scope of services; and
 - c) the assessment criteria; and
 - d) the Conditions of contract.
11. The Operator may, within 14 days of receiving the proposed tender documentation, provide comment on the proposed documentation to the Department and the Department must consider any comments provided by the Operator on the proposed documentation prior to advertising the tender.
12. The Department must provide the Community with an opportunity to provide submissions on the engagement of the Independent Monitor and the Department must consider any submissions provided by the Community on the engagement of the Independent Monitor prior to advertising the tender.
13. The terms of engagement of the Independent Monitor may include the following:
 - a) a period of engagement between three and five years;
 - b) a statement acknowledging that the Operator is responsible for the costs of the Independent Monitor;
 - c) a warranty by the Independent Monitor that it will:
 - i. act independently of the Department, the Operator, the Minister and any other person; and
 - ii. act honestly, reasonably and with the degree of professional care, knowledge, experience, skill and diligence which may reasonably be expected; and
 - iii. act within the time prescribed under these Conditions, the terms of engagement, or where no time is prescribed, within a reasonable time; and
 - iv. immediately notify the Department in writing upon becoming aware of the existence or possibility of a conflict of interest;
 - d) an obligation on the Independent Monitor to keep all information provided to the Independent Monitor confidential.
14. If the Independent Monitor requires an indemnity, the Operator must enter into a binding agreement providing a reciprocal indemnity to the Department.
15. The Department must notify the Operator of the appointment of the Independent Monitor and must provide the Operator with a copy of the terms of engagement.

16. The Operator and the Department must not interfere or attempt to influence the Independent Monitor in its assessment of environmental performance under these Conditions.
17. The Operator and the Department must each:
 - a) cooperate with the Independent Monitor; and
 - b) provide all necessary information and documents within their possession, custody or control to the Independent Monitor; and
 - c) procure for the Independent Monitor access to such premises owned, leased, or licensed by it as may be reasonably necessary,
 - d) to enable the Independent Monitor to undertake its assessment of environmental performance under these Conditions.
18. The Independent Monitor must engage with the Operator, the Department and the Community in undertaking the independent monitoring assessment.
19. If the Independent Monitor identifies an issue it considers requires urgent investigation and reporting:
 - a) the Independent Monitor must advise the Operator and the Department of the issue as soon as practicable and may include recommendations as to action to be taken; and
 - b) the Operator must consider the advice, and any recommendations, from the Independent Monitor and notify the Department and the Independent Monitor of the action the Operator proposes to take; and
 - c) the Department may, where appropriate, advise the Operator and the Independent Monitor of action the Department proposes to take; and
 - d) the Independent Monitor may provide further advice to the Operator, and where appropriate the Department, regarding the proposed action and the Operator and the Department must consider the further advice; and
 - e) if, after providing further advice, the Independent Monitor is not satisfied with the proposed action, the Independent Monitor may notify the Operator and the Department of the Independent Monitor's intention to undertake its own investigation and report; and
 - f) the Operator and the Department must facilitate the Independent Monitor's investigation and report.
20. The independent monitoring assessment is to be conducted, where practical, in a manner that complements the existing annual environmental assessment and audit processes undertaken by the Operator and the Department.
21. The Independent Monitor must prepare and provide a report:
 - a) annually to the Minister to assist with the review of the Mining Management Plan; and

- b) on request by the Minister.
22. The Minister must provide a report received from the Independent Monitor to the Operator and the Department within 14 days of receiving the report.
23. The Independent Monitor must prepare an additional report in a form suitable for distribution to the Community.
24. The Operator and the Department acknowledge that the report from the Independent Monitor will be made publicly available (including publication on an appropriate internet site) and may include data used in the preparation of the report.
25. Prior to being made publicly available, the Minister must request from the Operator and the Department any comments on the Independent Monitor's report. Such comments must be provided within 28 days of the Minister's request and must be made publicly available with the Independent Monitor's report.
26. The Operator acknowledges that it is responsible for all costs of the independent monitoring assessment other than those costs directly attributable to those elements of the independent monitoring assessment associated with Condition 21(b)) which are the responsibility of the Department.
27. The Department may provide to the Operator, from time to time, a notice setting out amounts due and payable under the terms of the engagement of the Independent Monitor.
28. The Operator must pay an amount notified in accordance with Condition 27 within seven (7) days of receiving such notice.
29. If the Operator disputes a notice provided by the Department under Condition 27:
- a) the Operator must pay the amount specified in the notice in accordance with Condition 28; and
 - b) the Operator must notify the Department in writing within 14 days of receiving the notice, setting out the reasons why the Operator disputes the notice; and
 - c) the Chief Executive of the Operator and the Chief Executive of the Department must meet within five (5) working days to resolve the dispute.
30. If there is a dispute (other than a dispute mentioned in Condition 29) between the Operator and the Department as to any matter or thing arising out of these Conditions (the "Dispute"), the party claiming that a Dispute has arisen must notify the other party to the Dispute and the Chief Executive of the Operator, the Chief Executive of the Department and the Independent Monitor must meet within five (5) working days to resolve the Dispute.
31. If the Chief Executive of the Operator, the Chief Executive of the Department and the Independent Monitor are unable to resolve a Dispute within ten (10) working days of meeting in accordance with Condition 30, the Operator and the Department may agree to the appointment of an independent party to assist in the resolution of the Dispute.

32. If, within five (5) working days of either the Operator or the Department nominating a person to be the independent party, no agreement is reached as to who is to be appointed as the independent party, either the Operator, the Department or both may refer the matter to the President of the Law Society of the Northern Territory.
33. The President of the Law Society Northern Territory may nominate a person to be the independent party and the parties to the Dispute are bound to accept the appointment of that person.
34. The role of the independent party is to assist in negotiating a resolution of the Dispute and the independent party cannot make a decision that is binding on either the Operator or the Department.
35. The Operator and the Department must make available to the independent party all materials requested by it and must provide the independent party with all other materials relevant to the Dispute.
36. The Operator and the Department must:
 - a) Bear their own costs of resolving the Dispute under this Condition; and
 - b) Bear equally the costs of any independent party engaged.

SCHEDULE D - ENVIRONMENTAL MONITORING AND MANAGEMENT

1. If the Operator establishes a new surface water monitoring location, a written notice of the location (in GDA 94 format) and nature of the monitoring must be given to the Department within 30 days of its establishment.
2. The Operator must maintain continuous monitoring having regard to:
 - a) devices installed at the following locations:
 - i. **SW29** (upstream Surprise Creek outside the zone of influence of TSF);
 - ii. **SCGS** (Surprise Creek gauge station between the TSF and the Mine);
 - iii. **SW30** (upstream Emu Creek);
 - iv. **USGS** (upstream at the McArthur River gauge station);
 - v. **BCGS** (upstream at the Barney Creek gauge station);
 - vi. **SW12** (immediately downstream of the Mine capturing outflow from Emu Creek, Barney Creek, drainage lines from SEPROD, Old McArthur River Channel and the McArthur River diversion channel but before the Glyde River joins the McArthur River channel);
 - b) devices must at a minimum measure electrical conductivity, and may measure additional parameters such as pH;
 - c) the Operator must from 30 August 2017 include data from these devices in data submission under Condition 7 of Schedule A.
3. From the date of authorisation of the Overburden Management Project the Operator is approved to install and manage the following gauging stations at:
 - a) Emu Creek;
 - b) Glyde River.
4. The Operator must ensure groundwater monitoring bores and extraction bores are constructed, maintained and decommissioned in compliance with the document entitled *Minimum construction requirements for water bores in Australia* published by the National Uniform Drillers Licensing Committee (third edition, February 2012 or a current version of the document). In this regard:
 - a) construction logs and bore location coordinates in GDA 94 format must be available to the Minister on request and provided to the Minister annually in the EMR;
 - b) logs of maintenance activities must be kept available to the Minister on request;
 - c) logs of bore decommissioning activities must be kept and made available to the Minister on request and reported in the Operator's Annual EMR or an alternative format as agreed with the Department.

5. The Operator must take appropriate action to reduce the risk to mining operations associated with livestock on the adjoining pastoral property by maintaining an Exclusion Area and managing livestock as appropriate in consultation with the Chief Veterinary Officer.
6. From the date of authorisation of the Overburden Management Project the Operator must undertake monitoring in accordance with the following Environmental Management Plans approved in the MMP:
 - a) Adaptive Management Plan, which includes:
 - i. Water Management Plan
 - ii. Air Quality Management Plan
 - iii. Rehabilitation Management Plan
 - b) Waste Management Plan
 - c) NOEF Management Plan
 - d) BBLF Environment Management Plan
 - e) Unplanned Closure Plan
7. Any required material changes to the Environmental Management Plans mentioned in Condition 6 of this Schedule must be approved by the Department in writing.
8. For the purposes of managing chemicals and flammable or combustible liquids, the Operator must:
 - a) store and handle all hazardous chemicals, toxic substances, gases and dangerous goods associated with the Mine in accordance with the current Australian Standard where such is applicable, and the laws of the Northern Territory;
 - b) include bulk storage tanks and associated infrastructure on a maintenance schedule which conforms with the current Australian Standard where such is applicable, and the laws of the Northern Territory;
 - c) include regular integrity testing to ensure loss of containment or failure of bulk storage tanks does not occur.