

# Annual Environmental Performance Audit Report 2020

**McArthur River Mine, Independent Monitor**



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## **Company details**

Advisian Pty Ltd  
ABN 50 098 008 818

Level 25, 12 Creek Street  
Brisbane QLD 4000  
PO Box 15081, City East QLD 4002  
Australia

T: +61 7 3377 7000

## **Annual Environmental Performance Audit Report 2020**

**01 April 2021**

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## Executive Summary

This Annual Environmental Performance Audit Report (AEPAR) presents findings on the environmental regulatory compliance of the McArthur River Mine (the Mine), considering the activities of McArthur River Mining Pty Ltd (the Operator) and the Northern Territory (NT) Department of Industry, Tourism and Trade (the Department), during the audit period 01 April 2018 to 30 April 2020.

The primary objective of this AEPAR is to provide transparency to the community in assessing whether the Operator and Department are fulfilling and managing compliance related environmental obligations and commitments. This review also identifies areas for improvement in environmental compliance.

This assessment has been conducted by the Independent Monitor, whose role is to audit compliance against regulatory conditions, recommendations and commitments, and prepare a report reviewing the activities undertaken by both the Operator and the Department to meet regulatory and non-regulatory obligations. In addition, the Independent Monitor is to report any urgent issues requiring investigation.

## Scope

The scope of the Independent Monitor in preparing this AEPAR included the following:

- Audit of the level of compliance of the Operator and Department against regulatory approval conditions in the *Variation of Authorisation 0059* (Authorisation) issued under the *NT Mining Management Act 2001* (MMA) and regulated by the Department
- Audit of the level of compliance of the Operator against regulatory approval conditions in the *Waste Discharge Licence* (WDL) issued under the *NT Water Act 1992* and regulated by the NT Department of Environment, Parks and Water Security (DEPWS)
- Audit of both the Operator and Department on the implementation of the NT Environment Protection Authority (NT EPA) Recommendations provided in *Assessment Report 86, McArthur River Mine Overburden Management Project, July 2018*
- Review of the Operator's implementation of other non-regulatory environmental commitments
- Review of the Department's key regulatory procedures and regulatory approach
- Review of the health of the McArthur River system in the vicinity and downstream of the Mine.

The Authorisation is the principal regulatory mechanism that enables the Department to regulate the Mine's operation under the *Mining Management Act 2001*. The Authorisation contains a schedule of conditions by which the Mine is regulated. The WDL authorises the Operator to manage the controlled discharge of water to nominated water courses from authorised discharge points.

## Approach

The audit review was undertaken in alignment with the approach and principles of ISO 19011:2018 *Guidelines for auditing management systems* and included quantitative audits and qualitative reviews. The interviews that were conducted as part of the assessment process were completed remotely using online communication platforms.

## Quantitative Audit

A quantitative audit was undertaken to assess compliance against the regulatory conditions included in the Authorisation and the WDL, as well as implementation of the non-statutory NT EPA Recommendations.

All conditions, sub-conditions and NT EPA Recommendations were assigned a status of active or inactive, based on whether the requirement was triggered, and/or active, during the audit period. Only active conditions and sub-conditions were considered in the calculation of the compliance scores.

The level of compliance of each condition, sub-condition and recommendation was assessed and given a score ranging from 0 - non-compliance to 4 - full compliance. The individual condition scores were aggregated to calculate an overall compliance score percentage.

Further analysis was undertaken by categorising all Authorisation conditions and sub-conditions as either Environmental Aspects and/or Operator Domains.

The level of compliance with the conditions in the Authorisation and the WDL regulatory approval documents, which spans across many activities, provides an indication of the Mine's environmental performance.

## Qualitative Review

A qualitative review was undertaken to assess performance against the implementation of non-regulatory commitments made by the Operator, the key regulatory procedures and approach undertaken by the Department, and the overall health of the McArthur River in the vicinity and downstream of the Mine.

## Findings - General

No significant environmental issues requiring urgent investigation were found to have occurred during the audit period. The increased attention on key environmental risk areas by the Operator and Department has resulted in improved performance during the audit period. This involved implementation of management actions to avoid or reduce environmental risks; including in relation to historical air quality emissions associated with the North Overburden Emplacement Facility, which was previously a key environmental management issue at the Mine.

Each section of this AEPAR describes the Independent Monitor's findings and relevant opportunities that may support continuous improvement. The listed opportunities are considerations proposed to enhance compliance improvements, noting these are not mandatory requirements. Successes achieved by the Operator and Department that exceed regulatory compliance and have contributed to improved environmental outcomes have also been noted.

## Findings – Operator Compliance Performance

### Variation of Authorisation

Based upon the Authorisation audit the Operator has attained a high level of compliance with the Authorisation conditions across all key operational activities. This finding is an indicator of a high level of environmental performance achieved by the Operator. The key findings in relation to the assessment of Environmental Aspects and Operator Domains are outlined below with further detail provided in the main report.



## Environmental Aspects

Environmental Aspects are defined as environmental or community receptors that may be protected by relevant conditions, or impacted if the conditions are not met.

The *Waste* Environmental Aspect includes the management of waste rock in the Overburden Emplacement Facilities. The *Waste* Environmental Aspect attained a high Authorisation compliance level of 98%. This suggests that the Operator is successfully directing environmental management effort to this activity which has amongst the highest potential environmental risks.

Environmental Aspects with the lowest compliance scores were *Surface Water* (91%) and *Monitoring and Reporting* (92%). Opportunities to improve compliance for these Environmental Aspects requires data being presented in the prescribed manner, and existing information on the Acid Mine Drainage storage inspection schedule being collated into the Water Management Plan.

The *Air Quality* Environmental Aspect attained a compliance score of 96%, with a gap in the evidence relating to a management plan for exploration activities that addresses potential dust risks.

The *Marine Waters* and *Community* Environmental Aspects achieved full compliance with the Authorisation conditions.

The *Groundwater* Environmental Aspect attained a compliance score of 94%, requiring some further information relating to a procedure for exploration activities to address potential hydrocarbon and drilling fluids risks, development of an Acid Mine Drainage storage structures seepage plan, and metering of all bores for dewatering activities.

The *Aquatic Fauna* Environmental Aspect was assessed as having a compliance score of 95% due to fluvial sediment data being presented annually and not quarterly as prescribed, plus opportunities to improve interpretation and reporting of data.

The *Vegetation and Rehabilitation* Environmental Aspect was assessed as achieving a compliance score of 95%, requiring the submission of a rehabilitation report to achieve full compliance.

## Operator Domains

Operator Domains are defined as Mine areas characterised by an operational activity and utilised by the Independent Monitor as a way to examine different areas of the Mine site.

The *Tailings Storage Facility* and *Overburden Emplacement Facilities* Operator Domains achieved equal highest Authorisation compliance scores at 98%. The *Tailings Storage Facility* and *Overburden Emplacement Facilities* Operator Domains have a high number of Authorisation conditions (169 in total). This reflects the higher potential environmental risk profile of these two areas of operations, if effective control measures for risk reduction and management are not applied.

The 98% level of compliance against conditions for both the *Tailings Storage Facility* and *Overburden Emplacement Facilities* Operator Domains is an indication that the Operator is successfully directing operational and environmental management resources and effort to these areas.

The *Exploration* Operator Domain was assessed as achieving a lower compliance (88%) with the Authorisation conditions when compared with the other Operator Domains. The part compliance findings were due to available data not being presented in the prescribed report and information related to chemical storage, dust, erosion and sediment control needing to be collated into a management plan.

## Waste Discharge Licence

The audit assessed the Operator as having a high level of overall compliance with the conditions of the WDL, at 97%. The three WDL sections with the highest number of grouped conditions achieved very high to full compliance, namely *Performance Improvement* (96%), *Recording & Reporting* (100%) and *General* (99%).

The WDL *Monitoring* section was assessed as achieving lower compliance when compared with the other WDL sections, at 89%. This was predominately due to limitations in continuous monitoring and data capture due to site conditions causing faults such as sediment clogging the probes and equipment damaged by abnormally high flows in the wet season.

## NT EPA Recommendations

The Operator's compliance with the implementation of the NT EPA Recommendations was assessed by examining compliance against those recommendations that have been adopted into statutory requirements under the Authorisation conditions. Full compliance was achieved for the 11 active recommendations applicable to the Operator.

## Voluntary Commitments

Voluntary environmental commitments made by the Operator are included in Mine Management Plans (MMP), Operational Performance Report (OPR) and the Environmental Monitoring Report (EMR). These commitments are not regulatory requirements, but are voluntary actions and opportunities identified by the Operator to further improve environmental outcomes. The implementation status of each commitment is provided by the Operator in annual registers in the OPR and EMR. In general, it was found that the tracking and reporting of the adoption and implementation of commitments in these documents is an area for improvement. The key opportunities for improvement include:

- Provision of further detail on proposed or estimated timeframes for actioning commitments to demonstrate progress
- Provision of sufficient information on 'closed' commitments to confirm that the recommendations are completely addressed or if there are actions still pending
- Provision of additional referencing details to identify the source of each commitment and to track, update and close out commitments.

Notwithstanding these limitations, the tracking and reporting of commitments in the period 2019-2020 improved since the 2018-2019 reporting period, suggesting the Operator had increased focus on this task during the latter part of the audit period.

## Findings – Department Compliance Performance

### Authorisation

The Department achieved a high level of overall compliance (97%) against the 60 active Authorisation conditions. The Department achieved full compliance for four out of six Authorisation sections, namely *General*, *Waste Rock Management*, *Water Management and Storage*, and *Overburden Management Project*.

The *Environmental and Independent Monitoring* section was assessed as achieving a lower compliance score, at 94%, due to insufficient bore log information for the construction and decommissioning of

groundwater bores. Subsequent to the audit, the reporting requirements for groundwater bore logs have been met.

The *Tailings Storage Facility* section attained a compliance score of 95%, requiring some further details on the Independent Tailings Review Board panel members and the frequency of meetings.

### **NT EPA Recommendations**

The audit found the Department has effectively incorporated the NT EPA Recommendations into the Authorisation conditions and has also implemented the recommendations which require action by the Department. A compliance score of 98% was achieved.

### **Regulatory Procedures and Approach**

The review found the Department to have a strong focus on key potential environmental risks and a practical approach to compliance and monitoring. Continuous improvement and high levels of compliance by the Operator can be attributed, at least in part, to the processes and approach adopted by the Department.

The review findings identified some opportunities around streamlining Department activities, especially those recurring regulatory processes. The potential benefit of streamlining activities would be efficiency gains that enable greater focus on the implementation of further initiatives to enhance the Mine's compliance.

### **Findings – River Health**

The monitoring and management actions conducted by the Operator include a broad range of programs to detect and manage potential impacts to protect the aquatic ecosystems and beneficial uses of the McArthur River. The Independent Monitor found that the monitoring and management actions are well implemented and where impacts were noted they were adequately described, and the mitigation actions recommended were in line with the approved Trigger Action Response Plans.

A general assessment on river system health, as it relates to fish health and general aquatic ecology, was undertaken based on the information provided by the Operator. Overall, the McArthur River and its tributaries were considered to be in good health.

Notwithstanding the overall good health of the river system, in 2018 to 2020 metals above maximum permitted concentration levels, as prescribed by the Australia New Zealand Food Standards Code - Standard 1.4.1, were detected in freshwater mussels and rainbow fish in Barney Creek. These locations in Barney Creek are located immediately adjacent to mining activities. Public access is not permitted to these areas of Barney Creek as they are located within the mineral lease boundary. A range of management measures are implemented in this area by the Operator, including public exclusion zones and ongoing monitoring programs. The metal levels will require ongoing monitoring and management consistent with the current regulatory focus of protecting the health of the McArthur River.

Data collected over the 2018 to 2020 monitoring programs found that all other fish from the McArthur River catchment taken outside the mineral lease boundary, had low levels of metals, and poses a low risk to human health through the consumption of fish.

Consistently high levels of metals have been recorded in mussels in most river catchments throughout the region, including river catchments unlikely to be affected by the Mine. It is considered unlikely that sufficient numbers of mussels could be collected and consumed to exceed an intake of metals that

would have a detrimental health effect. However, because of the high levels of metals found in the mussels in the region it is suggested that intake should be limited.

The 2018 to 2020 monitoring findings showed that it was safe for people to eat commonly fished animals from the McArthur River, namely: barramundi, sooty grunter, archer fish and cherabin (giant freshwater prawn).

## **Stakeholder Engagement**

The Independent Monitor completed stakeholder engagement with the Borroloola community concurrently with the preparation of this AEPAR. The purpose of this initial engagement was to introduce the Independent Monitor team, gain community feedback on future engagement approaches and capture initial community views on what information participants feel is important to the local community for inclusion in the AEPAR.

Stakeholder interests raised during Independent Monitor consultation focused primarily upon four broad issues, namely:

- River and fish health
- Transparency of information – Independent Monitor dialogue
- The community's preference for one-on-one consultations with the Independent Monitor
- For the Independent Monitor to provide clear information with local relevance.

Stakeholder feedback will be used to guide communication content and the stakeholder engagement approach for future engagement.

## **Future**

A large proportion of Authorisation conditions (366 of 602), WDL conditions (77 of 200) and NT EPA Recommendations (27 of 135) were not active during the audit period as they relate to 'future' requirements, subject to the approval of the Overburden Management Project.

The Overburden Management Project was approved in the Authorisation (dated 13 November 2020), which activates the commencement of statutory timeframes for the preparation of a number of extra environmental management requirements for the Operator and Department. The environmental compliance of the Mine against these recently commenced regulatory requirements will be assessed in subsequent AEPARs.

## **Conclusion**

This AEPAR, 2020 provides a compliance audit of the Mine by assessment against regulatory requirements including the Authorisation, WDL and NT EPA Recommendations. This report also reviewed the Operator's non-regulatory commitments, the Department's key regulatory procedures and approach, and the health of the McArthur River system. The environmental performance of both the Operator and Department is fundamentally linked to the level of compliance achieved against the statutory conditions of approval, specifically designed to safeguard the environmental values of the McArthur River.

Where the review found the Operator or Department had attained part compliance, the Independent Monitor identified opportunities that may support continuous improvement. The opportunities outlined in this report are considerations for potential enhancements in environmental compliance.

## Acronyms and Abbreviations

Acronym/abbreviation/term	Definition
AEPAR	Annual Environmental Performance Audit Report
ANZECC	Australian and New Zealand Environment and Conservation Council
AMD	Acid Mine Drainage
AMP	Adaptive Management Plan
Aspect	Environmental Aspect - environmental or community receptor e.g. air quality or surface water
Authorisation	Variation of Authorisation issued under the <i>Mining Management Act 2001</i> (NT)
BBLF	Bing Bong Loading Facility
Bridging MMP	Mining Management Plan, McArthur River Mine, 31 January 2019
CCC	Cross Cultural Consultants
CRG	Community Reference Group
CWC	Central West Charlie (stage of the NOEF)
DEE	Department of the Environment and Energy (Commonwealth)
DAWE	Department of Agriculture, Water and the Environment (Commonwealth), formerly Department of the Environment and Energy
DENR	Department of Environment and Natural Resources (NT), name changed to DEPWS on 31 August 2020
Department	DITT (formerly DME and DPIR) responsible for regulation of the Mine under the MMA
DEPWS	Department of Environment, Parks and Water Security (NT), formerly DENR
DITT	Department of Industry, Tourism and Trade (NT)
DME	Department of Mines and Energy (NT), name changed to DPIR and subsequently DITT
DPIR	Department of Primary Industry and Resources (NT), name changed to DITT on 31 August 2020
Domain	Operator Domain – an operational area of the Mine e.g. NOEF or TSF
EMP	Environmental Management Plan
EMR	Environmental Monitoring Report (in place from 2019-20 onwards, replacing the Operational Performance Report).
EMS	Environmental Management System
EPBC Act	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
EPROD	Eastern Perimeter Run Off Dam
ICE	Independent Certifying Engineer
IM	Independent Monitor
ITRB	Independent Tailings Review Board
LWD	Large Woody Debris

Acronym/abbreviation/term	Definition
Mine	McArthur River Mine
Minister	NT Minister for Mining and Industry
MMA	<i>Mining Management Act 2001</i> (NT)
MMP	Mining Management Plan
N/A	Not Applicable
NOEF	Northern Overburden Emplacement Facility
NT	Northern Territory
NT EPA	Northern Territory Environment Protection Authority
OI	Opportunity for Improvement
OMP	Overburden Management Project
Operator	McArthur River Mining Pty Ltd
OPR	Operational Performance Report (in place until 2018-19, superseded by the Environmental Monitoring Report from 2019-20)
RMP	Rehabilitation Management Plan
SOEF	Southern Overburden Emplacement Facility
TARP	Trigger Action Response Plan
TSF	Tailings Storage Facility
WDL	Waste Discharge Licence issued under the <i>Water Act 1992</i> (NT)
WPROD	Western Perimeter Run Off Dam

# 1 Introduction

## 1.1 Purpose and Objective

This Annual Environmental Performance Audit Report (AEPAR) presents findings on the regulatory compliance of the McArthur River Mine (the Mine) during the audit period 01 April 2018 to 30 April 2020. The audit considers the activities of McArthur River Mining Pty Ltd (the Operator) and the Northern Territory (NT) Department of Industry, Tourism and Trade (the Department). This AEPAR has been prepared by the McArthur River Mine Independent Monitor (IM).

The primary objective of this AEPAR is to provide transparency to the community in assessing whether the Operator and Department are fulfilling and managing compliance related to the Mine's environmental obligations. This audit also identifies areas for environmental compliance performance improvement.

## 1.2 Methodology

The following activities were undertaken by the IM in preparing this AEPAR:

- Audit of the level of compliance of the Operator and Department against regulatory approval conditions in the *Variation of Authorisation 0059* (Authorisation) issued under the *NT Mining Management Act 2001* (MMA) and regulated by the Department (388 conditions and sub-conditions for the Operator and 203 conditions and sub-conditions for the Department)
- Audit of the level of compliance of the Operator against regulatory approval conditions in the *Waste Discharge Licence* Number 174 issued under the *NT Water Act 1992* and regulated by the NT Department of Environment, Parks and Water Security (DEPWS) (200 conditions and sub-conditions)
- Audit of both the Operator and the Department on the implementation of the NT Environment Protection Authority (NT EPA), Recommendations provided in *Assessment Report 86, McArthur River Mine Overburden Management Project, July 2018*, (19 recommendations and sub-parts for the Operator and 116 recommendations and sub-parts for the Department)
- Review of the Operator's implementation of other non-regulatory environmental commitments
- Review of the Department's key regulatory procedures and regulatory approach
- Review of the health of the McArthur River system in the vicinity and downstream of the Mine.

Stakeholder engagement with Borroloola community residents was completed by Cross Cultural Consultants Pty (CCC) on behalf of the IM concurrently with the preparation of the AEPAR. The purpose of this initial engagement was to introduce the IM team, gain community feedback on future engagement approaches and capture initial community views on what information participants feel is important to the local community for inclusion in the AEPAR.

The IM compliance audits are planned to occur annually. The detailed findings will be reported in the AEPAR and key findings will be presented in an 'Annual Report Card'. Both the AEPAR and Annual Report Card will be made publicly available.

## 1.3 McArthur River Mine Overview

The Mine is located on one of the world's largest deposits of zinc and lead, approximately 970km south-east of Darwin. The closest community is Borroloola, which is about 60km north-east of the



Mine. The McArthur River mining operation includes an open cut mine, processing, tailings storage and overburden emplacement facilities. Zinc and lead is mined and processed at the Mine and trucked to the Bing Bong Loading Facility (BBLF) on the Gulf of Carpentaria. The mineral concentrate is loaded onto a barge and transported to deeper water for transfer to bulk carrier export vessels.

## 1.4 Regulatory Requirements

### 1.4.1 Authorisation

The Authorisation is the principal regulatory mechanism that enables the Department to administer the Mine's operation, under the NT MMA.

During the audit period of this AEPAR (01 April 2018 to 30 April 2020) six Authorisations applied to the Mine's operation. These were dated 29 November 2017, 17 July 2018, 12 October 2018, 20 December 2018, 07 June 2019 and 15 August 2019.

This audit focusses on compliance against the Authorisation dated 15 August 2019, which aggregates all relevant conditions that apply for the audit period and includes new conditions issued in response to the relevant mining operations submitted in the Mining Management Plan (MMP) amendment dated 31 January 2019.

A number of Authorisation conditions will be triggered outside the audit period of this AEPAR. These have been noted as future requirements in this report.

A revised Authorisation was issued on 13 November 2020 and compliance against its conditions will be audited and reported in future AEPARs.

### 1.4.2 Waste Discharge Licence

The WDL authorises the Operator to manage the controlled discharge of water to nominated water courses from authorised discharge points; discharge is to consist only of wastewater from sources identified in the licence. Water quality parameters are compared to the specified trigger values at nominated surface water monitoring locations. The WDL requires monitoring, measurement and reporting of water quality parameters at authorised monitoring points.

The WDL approval is under the *Water Act 1992* (NT) and is administered by DEPWS. The intention of the Mine WDL is to regulate activities so that the Operator does all things reasonable and practical to ensure that discharges of water from the Mine does not adversely affect the McArthur River area. The intention of the WDL is to regulate activities so that the Operator, in conducting the activity, does "*all things reasonable and practical to ensure the activity does not adversely affect the Declared Beneficial Uses and Objectives and Sites of Conservation Significance.*"<sup>1</sup>

The conditions contained in WDL 174-10 (commencement date 28 April 2017 – expiry date 28 April 2019) and WDL 174-11 (commencement date 28 April 2019 - expiry date 28 April 2021) were in place during the audit period. The Operator's compliance against the relevant 200 WDL conditions and sub-conditions are presented in Section 3.3.

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<sup>1</sup> Waste Discharge Licence (WDL 174-11), Section 16.

### **1.4.3 NT EPA Recommendations**

The NT EPA Recommendations have a central aim of achieving the overarching environmental outcome that: *"...requires the health of the McArthur River to be protected along its entire length at all times from mine related impacts..."*.

The NT EPA Recommendations are non-statutory requirements but contain proposed actions for both the Operator and Department. The NT EPA Recommendations were provided in the EPA's *Assessment Report 86, McArthur River Mine Overburden Management Project*, July 2018. The NT EPA Recommendations under the direct control of the Operator have been adopted into statutory requirements under conditions 106 to 133 of the Authorisation dated 15 August 2019.

The NT EPA Recommendations also provide matters for action by the Department as the agency responsible for the administration of the Authorisation under the MMA. This audit report reviews the levels of compliance of both the Operator and the Department in their implementation of the NT EPA Recommendations.

## 2 Approach

### 2.1 Process

The audit was undertaken in alignment with the approach and principles of ISO 19011:2018 *Guidelines for auditing management systems*. The key principles underpinning the audit include: integrity; fair presentation; due professional care; confidentiality; independence; evidence-based approach; and risk-based approach.

The format of this audit has been designed to allow comparative evaluation between this report and subsequent years to readily identify year on year compliance performance improvements and/or indicate trends that may need to be addressed.

A quantitative audit was undertaken to assess compliance against the regulatory conditions included in the Authorisation and the WDL, as well as implementation of the non-statutory NT EPA Recommendations. The methodology and scoring guide are described in Section 2.2.

### 2.2 Quantitative Compliance Audit

The following steps were undertaken for the quantitative compliance audit, which assessed the level of compliance against the Authorisation conditions, WDL conditions and implementation of the NT EPA Recommendations:

- All conditions, sub-conditions and NT EPA Recommendations were assigned to either the Operator, the Department, or both, based on the party with the responsibility for meeting, or contributing to, each requirement.
- All conditions, sub-conditions and NT EPA Recommendations were assigned a status of active or inactive, based on whether the requirement was triggered, and/or active, during the audit period. Conditions yet to be triggered have been noted as future requirements, assigned as inactive and were scored as Not Applicable (N/A). The number of active conditions assessed in future audits will increase as additional time, activity and approval-based triggers occur.
- Compliance audits were conducted through a combination of audit interviews with representatives of the Operator and Department, and a review of sample documentation and selected relevant information obtained by the IM through a Request for Information process. Due to COVID-19 travel restrictions, the audit interviews and evidence collection and review process was undertaken remotely over the period from September 2020 to February 2021.
- The level of compliance of each active condition, sub-condition and NT EPA Recommendation was assessed and given a score between 0 to 4, using the scoring guidelines presented in Table 2-1. In cases where more than one score was applicable for a given requirement, the most conservative (lowest) score was applied. Only active conditions and sub-conditions were considered in the calculation of the compliance scores.
- The scores for each active condition, sub-condition and NT EPA Recommendation were aggregated against the highest potential total score to calculate overall compliance scores (%) for the Authorisation, WDL and NT EPA Recommendations for both the Operator and Department. Additional analysis of Operator compliance against Operator Domains and Environmental Aspects was also undertaken for the active Authorisation conditions. This is described in Section 3.2.
- Opportunities for improvement and notable successes were documented, and are presented in Sections 3, 4 and 5.

Table 2-1: Compliance scores and guidelines

Score	Description	Guidelines
0	Non-Compliance	<ul style="list-style-type: none"> <li>• Fails to meet all elements of the condition/requirement</li> <li>• Negligible/no evidence of action</li> <li>• Lack of plan to address condition/requirement</li> <li>• Represents high risk to the environment, Operator and/or Department</li> </ul>
1	Part Compliance (low)	<ul style="list-style-type: none"> <li>• Fails to meet a majority of elements of the condition/requirement</li> <li>• Limited evidence of action</li> <li>• Limited plan to address condition/requirement</li> <li>• Represents high risk to the environment, Operator and/or Department</li> </ul>
2	Part Compliance (moderate)	<ul style="list-style-type: none"> <li>• Fails to meet a number of elements of the condition/requirement</li> <li>• Medium level of evidence of action</li> <li>• Plan to address condition/requirement, but not fully implemented</li> <li>• Represents medium risk to the environment, Operator and/or Department</li> </ul>
3	Part Compliance (high)	<ul style="list-style-type: none"> <li>• Fails to meet a small number of elements of the condition/requirement</li> <li>• High level of evidence of action</li> <li>• Implemented plan to address</li> <li>• Represents low risk to the environment, Operator and/or Department</li> </ul>
4	Full Compliance	<ul style="list-style-type: none"> <li>• Full compliance based on sample evidence</li> <li>• All elements of the condition/requirement are met</li> <li>• High level of evidence of action</li> <li>• Represents negligible risk to the environment, Operator and/or Department</li> </ul>

## 2.3 Qualitative Review

The qualitative review focussed on:

- The implementation of the Operator’s voluntary commitments, refer to Section 3.5
- The Department’s key regulatory procedures and the regulatory approach, refer to Section 4.4
- The overall health of the McArthur River system in the vicinity and downstream of the Mine, refer to Section 5.

As with the quantitative compliance audit, the qualitative reviews were conducted using a combination of audit interviews with representatives of the Operator and the Department, and a review of sample documentation and selected relevant information, obtained through a Request for Information process. Due to COVID-19 travel restrictions, the interviews and evidence collection and review was undertaken remotely over the period October 2020 to February 2021.

The findings of the qualitative reviews are presented as narratives in sections 3.5, 4.4 and 5. Opportunities for improvement and notable successes are also documented in these sections.

## 2.4 Reference Documents

The main reference documents considered during the AEPAR review are listed in Table 2-2.

Table 2-2: Annual Environmental Performance Audit Report key reference documents

No.	Reference document	Document source
1	Adaptive Management Plan, McArthur River Mine (Appendix B of the Mining Management Plan, 31 January 2020)	Operator
2	Adaptive Management Plan, Appendix A – Waste Management Plan	Operator
3	Adaptive Management Plan, Appendix B – Air Quality Management Plan	Operator
4	Adaptive Management Plan, Appendix C – Rehabilitation Management Plan	Operator
5	Environmental Monitoring Report (EMR), 2019-2020, August 2020 (formerly known as the Operational Performance Report (OPR))	Operator
6	Freshwater Sawfish Management and Monitoring Plan, March 2009	Operator
7	McArthur River Freshwater Aquatic Macroinvertebrate Monitoring 2018 Program Review	Operator
8	Mining Management Plan, McArthur River Mine, 31 January 2020 (excluding appendices)	Operator
9	Mining Management Plan, McArthur River Mine, 31 January 2019 ('Bridging MMP')	Operator
10	NT EPA <i>Assessment Report 86</i> , McArthur River Mine Overburden Management Project, July 2018	NT EPA
11	Operational Performance Report 2018-2019 (01 April 2018 to 30 April 2019), July 2019	Operator
12	<i>Variation of Authorisation 0059</i> , dated 29 November 2017, reflecting approval to use the storage capacity created from the Tailings Storage Facility (TSF) Cell 2, Stage 4 lift	Department
13	<i>Variation of Authorisation 0059</i> , dated 17 July 2018, noting conditions included those to reflect the approval of the MMP amendment to undertake construction of the Eastern Perimeter Run Off Dam (EPROD) and a lift on TSF Cell 2, Stage 5 lift	Department
14	<i>Variation of Authorisation 0059</i> , dated 12 October 2018, noting conditions included those to reflect the approval of the MMP amendment to commence construction of Northern Overburden Emplacement Facility (NOEF) Central West Charlie foundation	Department
15	<i>Variation of Authorisation 0059</i> , dated 20 December 2018, noting conditions included those to reflect approval of the MMP amendment to undertake Water Management Dam siphon water release	Department
16	<i>Variation of Authorisation 0059</i> , dated 7 June 2019, noting conditions included those to reflect approval of the MMP amendment to undertake activities proposed in the Bridging MMP amendment relating to– TSF Cell 1 commissioning, Stage 4 lift, but not its use	Department

No.	Reference document	Document source
17	Variation of Authorisation 0059, dated 15 August 2019, reflecting acceptance of NT EPA Recommendations in Assessment Report 86 as conditions 106 to 133 and approval of remaining activities in the Bridging MMP	Department
18	Waste Discharge Licence 174-10, dated 28 April 2017	DEPWS
19	Waste Discharge Licence 174-11, dated 28 April 2019	DEPWS

## 2.5 Review Team

Advisian was appointed to the IM role in December 2019. Representatives of the IM visited the Mine and the BBLF in March 2020 for project inception meetings and site orientation.

The AEPAR team consisted of staff from Advisian and sub-consultants with relevant experience and qualifications (refer to Table 2-3).

Table 2-3: Annual Environmental Performance Audit Report review team members

Role	Qualifications	Number of years of experience
Lead Environmental Auditor	B. Eng., M.Env.Mgmt	28
Senior Environmental Auditor	B. Eng. (Hons 1), PhD (Eng)	20
Assistant Environmental Auditor	B.Eng.Env. (Hons), MBA Tech Mgt	20
Stakeholder Engagement Lead	B.Soc.Sc (Hons)	20
Stakeholder Engagement Lead	B.Hlth Sc. (Env Health), BSc (AES)	17
Data Analyst	B.Eng., M.Env.Mgmt	8
Data Analyst	B. Env Science., M.Env.Eng	15
Community Engagement Lead	B. Indigenous Community Mgmt	18
Aquatic Ecologist	B. Aqua Sci (Hons), PhD Aqua Sci	20
Technical Reviewer	B. Eng., M.Env.Eng (Hons)	25

## 2.6 Stakeholder Engagement

Initial stakeholder engagement with Borroloola community residents was completed by CCC (a NT-based Aboriginal business) on behalf of the IM concurrently with the preparation of the AEPAR. The purpose of this initial engagement was to introduce the IM team, gain community feedback on future engagement approaches and capture initial community views on what information participants feel is important to the local community for inclusion in the AEPAR.

A Stakeholder Engagement Plan was prepared to guide community and stakeholder engagement and communications for the IM. CCC was appointed to facilitate community engagement throughout the IM process. The Stakeholder Engagement Plan nominated community consultation activities to align with the key IM outputs and activities. The initial engagement activities and findings are discussed in Section 6.

## 3 Review of Operator

### 3.1 Objective

The objective of the review of the Operator is to assess the level of compliance of the Operator against the relevant conditions in the Authorisation, WDL and the NT EPA Recommendations. It is also to review the performance of the Operator against relevant non-regulatory commitments contained in the MMP, OPR and EMR.

### 3.2 Authorisation – Operator Compliance Audit

#### 3.2.1 Scope and Approach

The Operator was assessed against the regulatory conditions contained in the Authorisation (dated 15 August 2019) over the audit period using the quantitative audit approach and scoring criteria described in Section 2.2.

Further analysis was undertaken by categorising all Authorisation conditions and sub-conditions as either Environmental Aspects and/or Operator Domains.

**Environmental Aspects** are defined as environmental or community receptors that may be protected by relevant conditions, or impacted if the conditions are not met. An additional *Aspect Monitoring and Reporting* was added for the purposes of the audit because of its relevance to many Authorisation conditions in determining compliance. The Environmental Aspects are:

- Air Quality
- Surface Water (rivers, creeks and artificial dams)
- Marine Waters (Bing Bong)
- Groundwater
- Aquatic Fauna
- Vegetation and Rehabilitation
- Waste (mining overburden and general waste)
- Community
- Monitoring and Reporting.

**Operator Domains** are defined as areas distinguished by an operational activity and utilised by the IM as a way to examine different areas of the Mine site. In general, the Operator Domain names used in this compliance audit align with those used by the Operator in management plans, monitoring programs and reporting. An additional Domain, *Governance/ General*, was added to categorise conditions which have overarching management oversight, and/or apply to multiple Domains. The Operator Domains are:

- Governance/General
- Open Pit/Underground workings
- Tailings Storage Facility
- Water Management and Storages
- Overburden Emplacement Facilities

- Exploration
- Waterways (including river diversion)
- Bing Bong Loading Facility
- Non-Mineral Waste Management.

### 3.2.2 Findings

A summary of findings is shown in Table 3-1.

*Table 3-1: Summary of Authorisation compliance – Operator*

Description	No.
Total number of conditions and sub-conditions relevant to Operator	399
Number of active conditions and sub-conditions during the audit period	176
Overall compliance score of active conditions	95%

Detailed audit findings, supporting evidence and scores are contained in *Authorisation Compliance Workbook – Operator* (Appendix A).

A summary of the Operator’s Authorisation compliance score for each Environmental Aspect is presented in Table 3-2 and Figure 3-1.

*Table 3-2: Authorisation – Operator compliance scores by Environmental Aspect*

Environmental Aspect	Total No. of Conditions	No. of Active Conditions	Scores	Compliance (Active Conditions)
Air Quality	13	7	27	96%
Surface Water	135	66	240	91%
Marine Waters	3	3	12	100%
Groundwater	50	21	79	94%
Aquatic fauna	48	11	42	95%
Vegetation and Rehabilitation	6	5	19	95%
Waste	137	74	289	98%
Community	20	8	32	100%
Monitoring and Reporting	225	75	277	92%



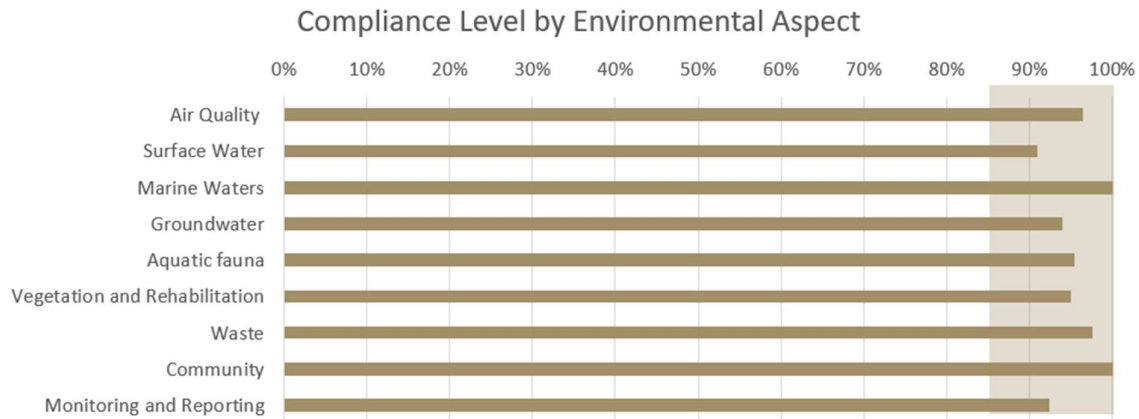


Figure 3-1: Authorisation – Operator compliance level illustrated by Environmental Aspect

The overall high to very-high level of compliance with the Authorisation conditions across the Environmental Aspects is an indicator of a high level of fulfilment of regulatory requirements by the Operator. The key findings in relation to Environmental Aspects are outlined below and detailed audit findings for compliance levels and opportunities for all Environmental Aspects are presented in Appendix A.

The *Waste* Environmental Aspect includes the management of waste rock in the overburden emplacement facilities, an area of high potential environmental risk, if risk management controls are not adequately implemented. Against the 74 active waste related conditions, the Operator had a compliance level of 98%, which is an indication that the Operator is directing environmental management resources and effort to activities which have the highest potential environmental risks.

The *Surface Water* and the *Monitoring and Reporting* Environmental Aspects were assessed as achieving a lower compliance with the Authorisation conditions than the other Environmental Aspects. Both of these Environmental Aspects had numerous conditions that were scored 3 – *Part Compliance (high)*, most commonly due to available data not presented in the prescribed format or existing information needing to be collated into a management plan.

The *Air Quality* Environmental Aspect attained a compliance score of 96% due to a lack of available evidence relating to a management plan, for exploration activities, that addresses potential dust risks.

The *Marine Waters* and *Community* Environmental Aspects achieved full compliance with the Authorisation conditions.

The *Groundwater* Environmental Aspect attained a compliance score of 94% attributable to a lack of available evidence relating to: a procedure for exploration activities to address potential hydrocarbon and drilling fluids' risks, the development of an Acid Mine Drainage (AMD) storage structures seepage plan, and metering of all bores for dewatering activities.

The *Aquatic Fauna* Environmental Aspect was assessed as having a compliance score of 95% due to fluvial sediment data being presented annually and not quarterly as prescribed, plus a lack of available evidence relating to the evaluation of the effectiveness of the EMRs interpretation and reporting of data.

The *Vegetation and Rehabilitation* Environmental Aspect was assessed as achieving a compliance score of 95% due to a lack of available evidence in relation to the submission of a rehabilitation report.

A summary of the Operator’s Authorisation compliance score for each Operator Domain is presented in Table 3-3 and Figure 3-2.

Table 3-3: Variation of Authorisation – Operator compliance scores by Operator Domain

Domain	Total No. of Conditions	No. of Active Conditions	Scores	Compliance (Active Conditions)
Governance/General	112	42	160	95%
Open Pit/Underground Workings	5	4	15	94%
Tailings Storage Facility	41	34	133	98%
Water Management and Storages	73	42	157	93%
Overburden Emplacement Facilities	128	45	177	98%
Exploration	4	4	14	88%
Waterways (including river diversion)	76	28	101	90%
Bing Bong Loading Facility	5	5	19	95%
Non-mineral Waste Management	10	0	0	-

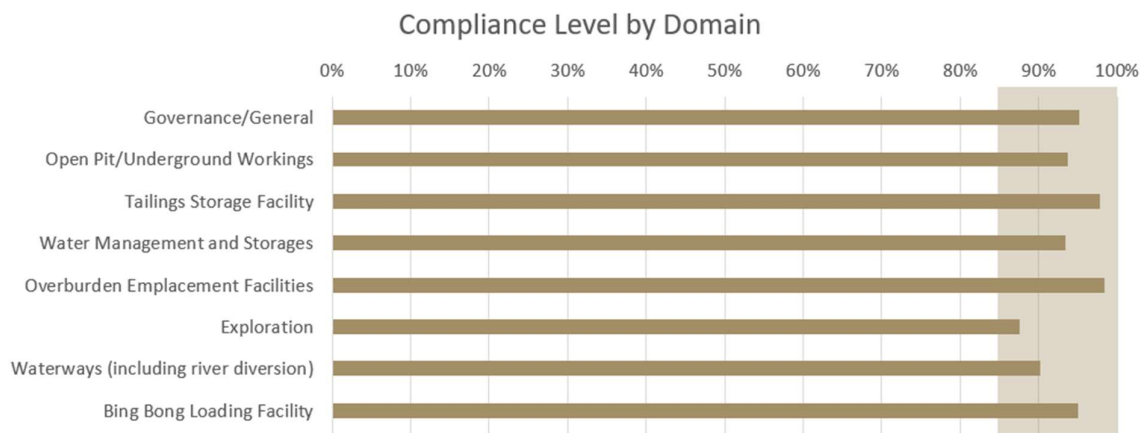


Figure 3-2: Variation of Authorisation - Operator compliance illustrated level by Operator Domain

The key findings in relation to Operator Domains are outlined below and the detailed audit findings for compliance levels and opportunities for all Operator Domains are presented in Appendix A.

The *Tailings Storage Facility* and *Overburden Emplacement Facilities* Operator Domains have amongst the highest levels of potential environmental risk and the highest levels of regulation, reflected in the numbers of active conditions (34 and 45 respectively). The *Tailings Storage Facility* and *Overburden Emplacement Facilities* Operator Domains achieved the equal highest compliance scores of all the Operator Domains at 98%, refer to Table 3-3 . This level of compliance against conditions for the *Tailings Storage Facility* and *Overburden Emplacement Facilities* Operator Domains is an indication that the Operator is directing environmental management resources and effort to activities and areas which have the highest potential environmental risks.

Governance activities are the requirements and procedural elements of the regulatory conditions that provide an overarching means to achieve compliance and environmental performance outcomes. There are 112 conditions relevant to *Governance/General* Domain, of which 42 are currently active. The Operator achieved a compliance level of 95%.

The *Exploration* Operator Domain was assessed as achieving a lower compliance (88%) with the Authorisation conditions than the other Operator Domains. Out of the four relevant active conditions two scored 3 – *Part Compliance (high)*. The part compliance findings were due to available data not being presented in the prescribed report and as exploration risks (e.g. chemical storage, erosion and sediment control, dust) information needs to be collated into a management plan.

Opportunities for improvement have been developed for those conditions assessed as having less than full compliance, these are outlined in Section 3.2.3.

### 3.2.3 Opportunities for Improvement

Potential opportunities identified by the IM for the Operator to consider, to support continuous improvement, are detailed in Table 3-4, noting these are not mandatory requirements.

Table 3-4: Authorisation - Operator opportunities for improvement

Authorisation Condition No.	Opportunities for Improvement
<b>Mining Management Plan and Reporting</b>	
6	Provide documentation of a review of the MMP on each anniversary (31 August) to demonstrate that the review is considered annually and amended as necessary.
7.d,e,g	Submit all quarterly monitoring data inclusive of soil, sediment and internal transfers, to the Department in the required format.
<b>Exploration</b>	
11.b	Update procedures for exploration activities to address hazardous material storage and erosion and sediment control.
11.c	Prepare and submit a progressive rehabilitation report as required.
<b>Waste Rock Management</b>	
17	Obtain and document agreement with the Department that the current methodology of alluvial cover is acceptable to recognise waste placement occurs all year round and to avoid restricting wet season operational activities unnecessarily.*
<b>Construction of the Central West Northern Overburden Emplacement Facility</b>	
21.a	Improve documentation of Independent Certifying Engineer (ICE) supervision during all phases of NOEF construction. (Note: Operator has advised the IM that a revised process related to documentation of ICE supervision is now in place. This will be considered during the next audit period.)
<b>Water Management and Storage</b>	
35.b	Incorporate the existing additional water transfer data and water balance data from water storages not already included, or submit a request to the Department to have the requirement reviewed, if appropriate.
35.f, 37.a	Create a single master list and inspection schedule of all AMD storages (including at BBLF) to ensure all required inspections are completed and reported and include the master list in the Water Management Plan.

Authorisation Condition No.	Opportunities for Improvement
35.g	Prepare an AMD storage structures seepage plan of actions and include this in the Water Management Plan.
36	Review the dewatering activities and ensure that all bores are metered.
37.a	Obtain and document agreement with Department for storage of AMD in any sumps or storages not listed in condition 37.a and ensure all sumps or storages that store AMD are managed to minimise contaminants entering the receiving environment.*
38.d.viii	Evaluate the effectiveness of the EMRs as a management tool for the interpretation and reporting of data and results of water transfer or discharge from any water storage structure.
<b>Tailings Storage Facility</b>	
46.d, 56a	Implement Risk Manager's Environmental Obligations Register, which assigns actions and accountabilities. (Note: Operator has advised IM that Environmental Obligations Register is being commissioned in Q2, 2021).
47,48,49	Assist the coordination of the Independent Tailings Review Board (ITRB) activities and records by the Operator taking responsibility for: <ul style="list-style-type: none"> <li>requesting Department endorsement of meeting frequency</li> <li>preparing meeting schedules, agendas and issuing ITRB meeting minutes</li> <li>retaining evidence of Department endorsement of members.</li> </ul>
52.d	Improve ICE reports on future Tailings Storage Facility cell embankment raise work by stating the relevant Authorisation conditions and MMP amendments as design criteria and that the report is certifying against these listed regulatory requirements.
<b>Environmental Monitoring</b>	
62	Prepare and implement a document control or retention procedure/policy.
64	Progress negotiations related to necessary approval requirements with other authorities to enable the construction of the permanent monitoring structures.
64.c	Submit continuous flow monitoring quarterly in the required template to the Department as required by condition 7.
69.c	Optimise use of suitable quality water, potentially target better than class 5 water, for dust suppression in more sensitive locations (e.g. near to waterways).
70.a	Audit the storage, handling and management of chemicals, toxic substances, gases, dangerous goods and flammable or combustible liquids to demonstrate compliance with Australian Standards and NT legislation.
70.b	Document the bulk storage tanks maintenance schedule to demonstrate compliance with Australian Standard/s and NT legislation.

\*Note: Opportunities for improvement for Conditions 17 and 37.a are relevant to both the Operator and Department.

### 3.2.4 Conclusions

The high level of compliance with the Authorisation conditions across all key operational activities is an indicator of a high level of fulfillment of relevant regulatory requirements achieved by the Operator.

The Operator Authorisation audit findings identified 21 opportunities for improvement (presented in Table 3-4) based on conditions having less than full compliance or general suggestions identified to support continuous improvement.

## 3.3 Waste Discharge Licence – Operator Compliance Audit

### 3.3.1 Scope and Approach

The Operator was assessed against the regulatory conditions contained in WDL 174-11 (28 April 2019 - 28 April 2021) and WDL 174-10 (28 April 2017 to 28 April 2019) during the audit period using the quantitative audit approach and scoring criteria described in Section 2.2.

### 3.3.2 Findings

A summary of findings is shown in Table 3-5.

Table 3-5: Summary of WDL compliance – Operator

Description	No.
Total number of conditions and sub-conditions relevant to Operator	200
Number of active conditions and sub-conditions during the audit period	123
Overall compliance score (combined WDL 174-11 and WDL 174-10) of active conditions.	97%

Detailed audit findings, supporting evidence and scores are contained in the *WDL Compliance Workbook – Operator* (refer to Appendix B).

The current WDL 174-11 retains conditions and sub-conditions from the preceding WDL 174-10, as well as updated or new conditions. 46 conditions and sub-conditions in WDL 174 -10 were active at the beginning of the audit period and superseded by WDL 174 -11 from 28 April 2019. Table 3-6 provides a breakdown of the number of conditions and sub-conditions and compliance scores WDL 174-11 and WDL 174-10 by WDL version. Conditions and sub-conditions common to both versions were only counted once and included in WDL 174-11 numbers.

Table 3-6: WDL – number of conditions and sub-conditions and compliance scores

WDL version	Total No. of Conditions	No. of Active Conditions	Scores	Compliance (Active Conditions)
WDL174-11 (28 April 2019 - 28 April 2021)	154	98	388	99%
WDL174-10 (28 April 2017 - 28 April 2019)	46	25	90	90%
Total	200	123	478	97%

A summary of the Operator’s combined WDL compliance score for each WDL section is presented in Table 3-7 and Figure 3-3.

Table 3-7: WDL – Operator compliance scores by section

WDL Sections	Total No. of Conditions	No. of Active Conditions	Scores	Compliance (Active Conditions)
General	37	25	99	99%
Operational	12	9	36	100%
Discharges	18	15	60	100%
Monitoring	30	26	93	89%
Recording and reporting	41	36	144	100%
Performance improvement	62	12	46	96%

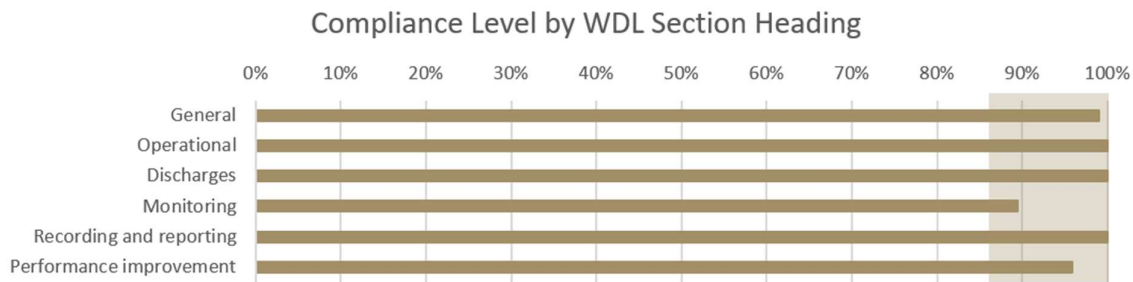


Figure 3-3: WDL – Operator compliance level by section

The key findings in relation to WDL section compliance by the Operator are outlined below and the detailed audit findings for compliance levels and opportunities for all sections are presented in Appendix B.

High levels of compliance were achieved in those WDL sections with the highest total number of conditions, namely *Performance Improvement*, *Recording and Reporting*, and *General*. This is an indication that the Operator has directed environmental management activities into areas which have the highest number of regulatory safeguards in the form of conditions.

The WDL *Monitoring* section conditions were assessed as achieving lower compliance than the other WDL sections. This was predominately due to limitations in continuous monitoring and data capture for multiple water quality parameters (e.g. electrical conductivity, pH, dissolved oxygen, temperature and river flow). Monitoring equipment was installed and maintained but did not operate continuously due to site conditions causing faults such as sediment clogging the probes and equipment which was damaged by abnormally high flows in the wet season.

The compliance score for *Monitoring* (89%) is impacted by a number of part-compliance scores assigned to monitoring parameters under conditions in WDL 174-10 that are no longer requirements in the current version (WDL 174-11). If the superseded conditions are omitted 99% compliance is achieved.

### 3.3.3 Opportunities for Improvement

Potential opportunities to support continuous improvement identified by the IM through the review and audit process are detailed in Table 3-8, noting these are not mandatory requirements.

Table 3-8: WDL – Operator opportunities for improvement

WDL Condition No.	Opportunities for Improvement
<b>General</b>	
14	Consolidate information collected for complaints into one central location by having a single community complaints register to contain all the required complaints log information listed in 14.1 to 14.10.
<b>Monitoring</b>	
25	Add a note to the internal Operator Monitoring Schedule for Bing Bong Dredge Spoil Drain to communicate that monitoring frequency is required to be increased to weekly during any future dredging activities.
<b>Performance Improvement</b>	
25,60,62	Progress negotiations related to necessary approval requirements with other authorities to enable construction of the permanent monitoring structures e.g. Glyde River.

### 3.3.4 Conclusions

The audit review has assessed the Operator as having a high level of overall compliance with active WDL conditions at 97%.

The WDL audit identified three Operator opportunities, presented in Table 3-8 to support improved environmental performance, all in areas related to *General*, *Monitoring* and *Performance Improvement*, to assist compliance with the WDL.

## 3.4 NT EPA Recommendations – Operator Compliance Audit

### 3.4.1 Scope and Approach

The NT EPA's *Assessment Report 86, McArthur River Mine Overburden Management Project*, July 2018 contained thirty recommendations. Whilst the EPA Recommendations are non-statutory, the recommendations relevant to the Operator have been adopted into statutory requirements under conditions 106 to 133 in the Authorisation (dated 15 August 2019).

The Operator's compliance with the implementation of the NT EPA Recommendations was assessed by examining compliance against the Authorisation conditions, including the conditions 106 to 133 as described in Section 3.2.

### 3.4.2 Findings

The Operator achieved full compliance with the non-statutory NT EPA Recommendations that were active during the audit period (refer to Table 3-9).

Table 3-9: Summary of NT EPA Recommendations implementation compliance – Operator

Description	No.
Total number of Recommendations (including sub-parts) relevant to Operator	19
Number of active Recommendations (including sub-parts) during the audit period	11
Overall compliance score of active Recommendations	100%

Detailed audit findings, supporting evidence and scores are contained in *NT EPA Recommendations Compliance Workbook – Operator* (refer to Appendix C).

### 3.5 Non-Regulatory Commitments – Operator Review

#### 3.5.1 Scope and Approach

In addition to the regulatory requirements under the Authorisation and WDL, as well as the NT EPA Recommendations, the Operator has made a number of voluntary commitments to support improved environmental outcomes across the operation. These voluntary actions and opportunities have been identified and adopted by the Operator, based on feedback from the community, consultants and government and have been noted in MMPs (including amendments), previous OPRs and the current EMR. The IM reviewed the following Commitments and Actions Registers to assess the implementation status of each commitment and action:

- 2018-2019 Operational Performance Report, Appendix B, dated 31 July 2019 (covering the period 1 April 2018 to 30 April 2019)
- 2019-2020 Environmental Monitoring Report, Appendix B, dated 31 August 2020 (covering the period 1 May 2019 to 30 April 2020).

As these commitments are not regulatory requirements, the scorecard approach adopted for the review of compliance performance against the Authorisation and WDL requirements was not used in this case. Instead, a qualitative review of the registers was undertaken (as described in Section 2.3), with general commentary and opportunities for improvement provided.

#### 3.5.2 Findings

In general, the tracking and reporting of commitments noted in the MMP and OPRs/EMR was limited.

The key limitations of the tracking and reporting of commitments include:

- Many of the commitments do not include a timeframe for implementation. Furthermore, in many instances the status reported in the 2018-2019 OPR and 2019-2020 EMR does not indicate a proposed or estimated timeframe for action. In some cases, little or no progress has been reported on recommendations that were made over four years prior.
- A number of items were 'closed' in the 2018-2019 OPR and/or were not included in the 2019-2020 EMR, however there is insufficient information to confirm that the recommendations were completely addressed or whether there are actions still pending. It is considered that actions should only be 'closed' when fully completed (with appropriate referencing), and/or if justification is provided.



- Additional referencing would assist to both identify the source of each commitment and to track, update and close out commitments. Ideally, this would include the document title, number, section and date. Notably, this approach was partially adopted in the 2019-20 EMR. A numbering system for the commitments would also be helpful.

Notwithstanding these limitations, the tracking and reporting of commitments in the 2019-2020 EMR has improved on the 2018-2019 OPR, suggesting increased focus on this task during the latter part of the reporting period. The improvements include addition of a column to assign responsibility for the action (for environmental management and water management commitments and actions); and additional cross referencing as evidence of actions (in some cases).

### 3.5.3 Opportunities for Improvement

Potential opportunities to support continuous improvement of the implementation, tracking and reporting of non-regulatory commitments are detailed in Table 3-10, noting the opportunities are not mandatory requirements.

*Table 3-10: Operator Commitments - opportunities for improvement*

No.	Opportunities for Improvement
1	Provide further detail on anticipated timeframes for commitments' actions to demonstrate progress.
2	Provide further information on 'closed' commitments to confirm that the recommendations were completely addressed or if there are actions still pending.
3	Provide additional referencing details to identify the source of each commitment and to track, update and close out commitments.

### 3.5.4 Conclusions

The Operator's environmental commitments performance would benefit from improved tracking and reporting of voluntary commitments. Adoption of a similar level of attention as applied to the Authorisation and WDL requirements will help to ensure that key recommendations and voluntary commitments are tracked and progressed in a timely fashion.

### 3.6 Operator Successes

The audit and review process identified some noteworthy successes achieved by the Operator during the audit period which exceed the environmental regulatory compliance requirements and have contributed to continuous improvement, refer to Table 3-11.

Table 3-11: Operator successes

Authorisation Condition No.	Operator Successes
35.b	Improvement in monitoring data in 2018/2019 has led to improvements in water balance assessments and the Mine's water management.
69.b	Continuous improvement to detect where dust from mining activities originates through additional dust deposition monitors which measure the proportion of lead and zinc to trace dust back to sources and targeting of control solutions at the source.
115.a	Operator has commenced the NOEF cover system trial early with the Department's approval, enabling several years of monitoring and analysis prior to the formal commencement of the condition.
118	Operator commenced the Ecotoxicological (ecotoxicology potential impact assessment and monitoring of receiving environment biota relevant to the McArthur River system) program ahead of approval of the 2020 MMP, enabling early monitoring and analysis of data prior to the formal commencement of the condition.

## 4 Review of Department

### 4.1 Objective

The objective of the audit of the Department is to assess the level of compliance of the Department against the relevant conditions in the Authorisation and the implementation of NT EPA Recommendations, as well as a review the of the regulatory procedures of the Department.

### 4.2 Authorisation – Department Compliance Audit

#### 4.2.1 Scope and Approach

The Department was assessed against the regulatory conditions contained in the Authorisation dated 15 August 2019, using the quantitative audit approach and scoring criteria described in Section 2.2.

#### 4.2.2 Findings

A summary of findings is shown in Table 4-1.

*Table 4-1: Summary of Authorisation compliance – Department*

Description	No.
Total number of conditions relevant to the Department	203
Number of active conditions during the audit period	60
Overall compliance score of active conditions	97%

Detailed audit findings, supporting evidence and scores are contained in *Authorisation Compliance Workbook – Department* (Appendix D).

Further analysis was undertaken by assessing Authorisation conditions and sub-conditions under Authorisation sections, generally aligned with the section headings in the Authorisation. These include:

- General- incorporating Security and Levy, Exploration, Non-mineral Waste Management and Geochemical, Geotechnical and Hydrogeological Assessment, and Investigation Drilling
- Waste Rock Management- incorporating Construction of the Central West NOEF, Construction of the Central East NOEF, and Investigation of the NOEF sections
- Water Management and Storage- incorporating Western Perimeter Run Off Dam Construction and Eastern Perimeter Run Off Dam Construction
- Tailings Storage Facility
- Environmental and Independent Monitoring
- Overburden Management Project.

A summary of the Department’s Authorisation compliance score for each Authorisation section is presented in Table 4-2 and Figure 4-1.

Table 4-2: Authorisation - Department compliance scores by section

Variation of Authorisation Sections	Total No. of Conditions	No. of Active Conditions	Scores	Compliance (Active Conditions)
General	9	3	12	100%
Waste Rock Management	32	3	12	100%
Water Management and Storage	7	2	8	100%
Tailings Storage Facility	10	5	19	95%
Environmental and Independent Monitoring	61	27	102	94%
Overburden Management Project	84	20	80	100%

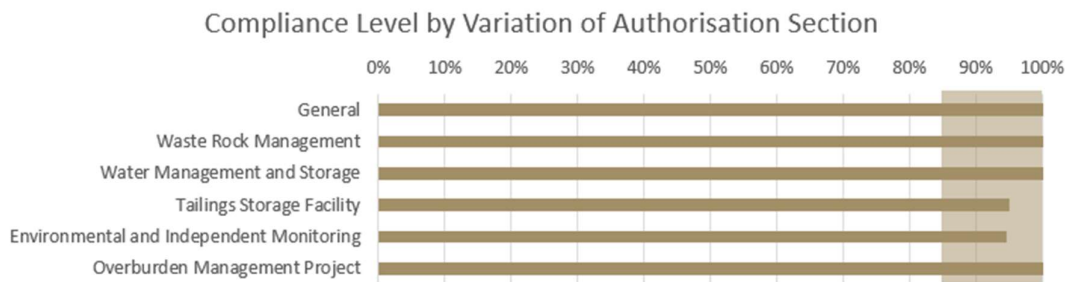


Figure 4-1: Authorisation – Department compliance level illustrated by Authorisation Section

The key findings in relation to Authorisation section compliance by the Department are outlined below and the detailed audit findings for compliance levels and opportunities for all sections are presented in Appendix D.

The proportion of active conditions is low because the majority of conditions are future requirements not triggered during the audit period for this AEPAR.

The Authorisation provides environmental safeguards in the form of additional and strengthened approval conditions especially concentrated on the potential higher environmental risks associated with the *Overburden Management Project* and *Waste Rock Management* sections.

The *Overburden Management Project* section relates to the management of waste rock in the overburden emplacement facilities which is an area of high potential environmental risk, if risk management controls are not adequately implemented. The compliance level of 100% against 20 active *Overburden Management Project* related conditions is an indication that the Department is directing effort to activities which have the highest potential environmental risks.

At 94% compliance across 27 currently active conditions for the *Environmental and Independent Monitoring* section was assessed as achieving lower compliance with the Authorisation conditions than the other sections. The lower score was attributable to a lack of available evidence relating to the construction and decommissioning of groundwater bore logs during the audit period. Subsequent to the audit period groundwater bore logs reporting conditions have been complied with.

The *Tailings Storage Facility* section attained a lower compliance score (95%) than other sections. This score was because of a lack of available evidence on the ITRB panel members and meeting frequency details at the time of the audit.

### 4.2.3 Opportunities for Improvement

Potential opportunities to support continuous improvement identified by the IM through the review and audit process are detailed in Table 4-3, noting these are not mandatory requirements.

Table 4-3: Authorisation – Department opportunities for improvement

Authorisation Condition No.	Opportunities for Improvement
<b>Mining Management Plan and Reporting</b>	
7.g	Amend the condition to remove the requirement for the Operator to submit water transfer data quarterly given the large amount of data which is provided annually.*
<b>Waste Rock Management</b>	
17	Improve the wording of the condition related to the alluvium cover placement being required prior to 01 November each year to recognise waste placement occurs all year round and to avoid restricting wet season operational activities unnecessarily.*
<b>Tailings Storage Facility</b>	
48.	Confirm details of the meeting frequency of the ITRB.
<b>Environmental Monitoring</b>	
64.b	Confirm that only Electrical Conductivity monitoring is the intent of the condition or specify other parameters required e.g. pH, flow monitoring, etc.
<b>Independent Monitoring Assessment Conditions</b>	
75.a.ii	Determine what, if any, environmental assessments and audits of the Operator shall be undertaken by the Department.

\*Note: Opportunities related to Conditions 7.g and 17 are relevant to both the Operator and Department.

### 4.2.4 Conclusions

Full compliance for the *Overburden Management Project, Water Management and Storage, Waste Rock Management* and *General* sections' active conditions is an indication that the Department is directing effort to activities which have the highest potential environmental risks.

The *Environmental and Independent Monitoring* section was assessed as achieving lower compliance (94%) with the Authorisation conditions than the other sections. This lower score related to groundwater bore logs but these reporting conditions have been complied with since.

The *Tailings Storage Facility* section was assessed as achieving a compliance score of 95%. This lower score was attributable to a lack of available evidence relating ITRB panel members and monitoring frequency details.

## 4.3 NT EPA Recommendations – Department Compliance Audit

### 4.3.1 Scope and Approach

The Department was assessed against the implementation of the relevant NT EPA Recommendations over the audit period using the quantitative audit approach and scoring criteria described in Section 2.2. In all, 116 NT EPA Recommendations and sub parts were considered relevant to the Department.

The audit of the Department’s compliance with the implementation of the EPA Recommendations considered two aspects, namely:

1. The extent to which the NT EPA Recommendations have been adopted in the wording of the Authorisation conditions
2. The extent of implementation of NT EPA Recommendations for action by the Department.

Consideration of the Department’s compliance with the implementation of NT EPA Recommendations requires that both criteria are to be met. The most conservative (lowest) score assessed against either criteria was assigned to each recommendation.

### 4.3.2 Findings

A summary of findings is shown in Table 4-4.

*Table 4-4: Summary of NT EPA Recommendations implementation compliance – Department*

Description	No.
Total number of Recommendations (including sub-parts) relevant to the Department	116
Number of active Recommendations (including sub-parts) during the audit period	97
Overall compliance score active Recommendations	98%

Detailed audit findings, supporting evidence and scores are contained in *NT EPA Recommendations Compliance Workbook – Department* (Appendix E).

Currently the number of active NT EPA Recommendations is less than the total because some of recommendations’ sub-parts are future requirements not triggered during the audit period.

### 4.3.3 Opportunities for Improvement

Potential opportunities to support continuous improvement identified by the IM through the review and audit process are detailed in Table 4-5, noting these are not mandatory requirements.

Table 4-5: NT EPA Recommendations – Department opportunities for improvement

EPA Recommendation No.	Opportunities for Improvement
<b>Aquatic Ecosystems</b>	
14	Update Authorisation condition 118 to clearly reference " <i>...the results of the (Ecotoxicological) program shall be used to inform trigger criteria in the AMP</i> ".
14	Develop and document a process for including advice on the preparation and implementation of the Ecotoxicological program from other agencies e.g. DEPWS and Commonwealth Department of Agriculture, Water and the Environment.
15.iii	Develop and document a process for including advice on the preparation and implementation of the aquatic ecosystem monitoring program from other agencies e.g. DEPWS and Commonwealth Department of Agriculture, Water and the Environment.
15.iii	Decide on which website key documents are made available. It will be more efficient to have a single master copy on a website document with links to it from other websites (e.g. Departments, Agencies or Operator).
<b>Human Health</b>	
19	Update future Authorisation to include reference to the results of the air quality monitoring plan to be audited by the IM every three years or seek agreement in writing between Department and NT EPA to accept an alternative arrangement.
20. iii	Obtain agreement with NT Department of Health that the alternative wording used on waterway signage ('prohibited access') at mining lease boundary is acceptable.
<b>Whole of Environment Considerations</b>	
24	Ensure the independently calculated amount and final amount of the security shall be published on the relevant regulator's website with any variation between the amounts explained.

#### 4.3.4 Conclusions

The audit found the Department has effectively incorporated the NT EPA Recommendations into the Authorisation conditions and has also implemented the Recommendations which are both supported by the achievement of a high level of overall compliance at 98%.

The review process identified nine relatively minor opportunities the Department may adopt as continuous improvement initiatives relating to process improvements, amendments to Authorisation conditions and/or obtaining agreement with the NT EPA to clarify some condition requirements.

## **4.4 Regulatory Procedures and Approach – Department Review**

### **4.4.1 Scope and Approach**

A review of the Department's performance in regulatory procedures and regulatory approach was conducted by examining the following key regulatory activities:

- Section 29 of the MMA reports on incidents – response process
- Tailings Storage Facilities quarterly reports – assessment process
- Quarterly monitoring data requirements
- Response to annual 2018-2019 OPR and 2019- 2020 EMR.

A qualitative review of the regulatory procedures and approach was undertaken (as described in Section 2.3), with general commentary and opportunities for improvement provided. Through interviews and assessment of relevant documents and samples of information, the review considered performance indicators, such as timeliness of actions; environmental risk profile and adequacy of response; environmental protection outcomes; follow up/close out of actions; achievements and opportunities for improvement. Standardised questions were used to provide structure and consistency around the review of the Department's regulatory procedures and regulatory approach. These focused the review on key environmental issues, environmental risk management processes, challenges and communication.

### **4.4.2 Findings**

#### **Section 29 of the MMA, Incidents**

Section 29 of the MMA requires the Operator to notify the Department of all incidents, with potential or actual environmental harm. The Department assesses the severity of the incident and the need for escalation within the Department. Incidents are generally considered higher risk if there are actual or potential offsite impacts and are considered higher priority if another government department is involved.

The Department noted that the corrective actions procedure from the Operator appears to be effective and is implemented successfully. The observation from the Department is that during the audit period, other than minor spills e.g. diesel or hydraulic fluid, there has been no reoccurrence of incidents that have been addressed through the corrective actions procedure.

The Department expressed concern that the administrative workload related to tracking and processing, responding and closing out all incidents reduces the Department's capacity to focus on priority issues. An efficiency improvement opportunity potentially exists, subject to legislative requirements, for minor spills that have been addressed through the corrective actions' procedure, with limited potential environmental impact. These incidents, subject to the relevant legislation requirements and the MMP, may potentially be included in the annual EMR rather than individually notified to the Department under the Section 29 procedures.

#### **Tailings Storage Facility Quarterly Reports**

The requirement to report quarterly monitoring data for the Tailings Storage Facility was established early in the Mine life, in response to issues around the use of the Tailings Storage Facility as a water holding structure, which included seepage. The Tailings Storage Facility quarterly report provides seepage volumes, identifies potential structural integrity issues (based on monuments/piezometers) and assessment with respect to lateral and vertical movement. The seepage and structural integrity of



the Tailings Storage Facility are potentially high environmental risks if adequate controls are not implemented. The quarterly monitoring undertaken during the audit period has assisted the management and monitoring of the Tailings Storage Facility.

Prior to the audit period there had been no analysis or tracking between earlier and subsequent TSF quarterly reports to examine whether any instructions from the Department had been implemented. In recent years the Department has implemented a process to compare previous and current report findings and recommendations to determine if the Operator has addressed or closed out actions.

#### **Quarterly Monitoring Data Requirements**

Under the Authorisation, all site monitoring data is to be submitted quarterly by the Operator to the Department. The Operator receives an acknowledgement from the Department for receipt of the data. Typically, the data may be utilised for assessment of the annual EMR, whereby the Department can refer to raw quarterly monitoring data to verify consistency, or flag if there are any concerns.

The data storage process allows the Department to retain access to all data. This supports a continuous data management process and safeguards against potential data loss should there ever be a change in Operator. The database used by the Department requires a specific template to upload the data, which the Operator is required to use.

The Department's Environmental Monitoring Unit manages the database. The uploading of data is restricted to a limited number of personnel, which has, on occasions led to data not being uploaded on time.

#### **OPR and EMR**

The Operator is required to submit to the Department an annual report on implementation and environmental performance for activities approved in Management Plans and Monitoring Programs. The annual reports during the audit period were the 2018- 2019 OPR and 2019- 2020 EMR.

The annual reports are comprehensive, and require significant time and resources to prepare and assess. In some cases, inputs from technical teams are also required to support the assessment of reports. The review has identified some opportunities to potentially improve and streamline the process.

#### **4.4.3 Opportunities for Improvement**

Potential opportunities to support continuous improvement identified by the IM through the review process are detailed in Table 4-6, which applies to regulatory procedures and in Table 4-7 which applies to the regulatory approach, noting these are not mandatory requirements.

Table 4-6: Department's regulatory procedures opportunities for improvement

Key Regulatory Activity	Opportunities for Improvement
S29 incidents	Examine legislation to determine if agreement on a process may allow low risk incidents to be notified and documented in the annual reporting to the Department (i.e. EMR) rather than individually notified under Section 29 procedures.
S29 incidents	Develop a trend analysis of Section 29 incidents as an indicator of performance of the Mine (improvement or deterioration).
TSF	Include and review of "TSF Recommendation, Instruction and Action Register" to document satisfactory progress of actions as part of a review procedure for every TSF quarterly report.
TSF	Request a copy of the independent TSF annual audit reports for Department records.
TSF	Seek agreement with the Operator to re-establish the practice of including the "TSF Recommendations, Instruction and Action Register" in future TSF Quarterly Reports.
Quarterly monitoring data requirements	Train more Department staff in the procedure to upload the quarterly monitoring data received from the Operator.
OPR and EMR	Discuss with the Operator the potential opportunities and mechanisms to communicate the trends of monitoring data to the public. e.g. via the Community Reference Group once it is established.
OPR and EMR	Determine how cumulative data and trend analysis may be obtained, analysed and reported. The EMR has not included a cumulative assessment either across time or for Environmental Aspects.
OPR and EMR	Facilitate an internal Departmental workshop to examine the annual EMR process, tasks and outputs with view to streamlining the activity. It is prudent to have the EMR but it is worth examining what is sufficient for regulatory requirements and to satisfy community expectations, and how the annual process could be more efficient.
General	Prepare an internal Departmental procedure for the regulation of the Authorisation conditions and NT EPA Recommendations to document the processes, timing, approvals, decisions, public /community communication and records requirements to assist manage the complex regulatory requirements relating to Department activities.

The review considered the Department's regulatory approach and identified some opportunities for improvement which are outlined in Table 4-7.

Table 4-7: Department's regulatory approach opportunities for improvement

No.	Opportunities for Improvement
1	Further streamline the documentation and approval process to improve efficiencies and focus on implementation of initiatives to improve performance.
2	Develop a working agenda/action list for meetings with Operator to capture and track ideas and actions, including delivery timeframes.
3	Increase time on site to verify evidence of progress and outcomes, as well as work with the Operator to resolve issues.
4	Improve communication and collaboration with other government agencies (Commonwealth and NT) to align objectives and actions, streamline processes and improve environmental outcomes.
5	Reduce reliance on key individuals within the Department to ensure consistency and continuity of compliance and performance.

#### 4.4.4 Conclusions

A review of the Department's performance in regulatory procedures and regulatory approach was conducted by examining a selection of key regulatory activities. The review acknowledges the significant technical and administrative task for the Department to regulate the Mine's activities. The review findings identified some opportunities around streamlining activities especially those recurring regulatory processes (e.g. annual EMR review, TSF quarterly reports, cumulative data capture, monitoring data upload) that may be made more efficient. The potential benefit of streamlining some of the Department's documentation and approval processes would be efficiency gains. This would enable greater focus on the implementation of initiatives to continuously improve the Mine's environmental performance.

#### 4.5 Department Successes

The audit and review process identified some noteworthy successes achieved by the Department during the audit period which exceeded the regulatory compliance requirements and have contributed to continuous improvement, refer to Table 4-8.

Table 4-8: Department's regulatory procedures successes

No.	Department Success
1	The Department has implemented a process to compare previous and current TSF quarterly report findings and recommendations to determine if the Operator has addressed or closed out Recommendation actions. The Department's attention to the TSF quarterly review has contributed to a significant improvement in TSF management.
2	The Department has undertaken a comparative analysis between previous and the most recent TSF reports to determine if the Operator has addressed potential high risk issues. The Department acknowledges receipt of each Operator quarterly report and close out of any issues (or identification of additional actions required).
3	The Operator TSF Quarterly Reports for Dec 2017 to Feb 2018 and March to May 2018 included the Operator TSF Recommendation, Instruction and Action Register. The Department added, tracked and closed out issues or identified issues as ongoing high risk if adequate risk controls were not implemented.

No.	Department Success
4	Strong focus on key environmental areas that could be high risk if adequate risk controls were not in place (e.g. high number of conditions on NOEF and TSF), and a practical approach to compliance and monitoring.
5	Improved environmental performance and high levels of regulatory compliance by the Operator can be attributed, at least in part, to the processes and approach adopted by the Department for the Mine.
6	Efforts to streamline the documentation and approval procedures (e.g. shift to Life of Mine approval for key Mine infrastructure, with appropriate milestones / steps to demonstrate compliance) have resulted in more efficient regulatory process.

## 5 Review of River System Health

### 5.1 Objective

The objective of the review of the river system health is to assess relevant aquatic ecology monitoring programs and management actions developed to meet the operating requirements. The review is also to provide an assessment of the implementation of the monitoring and the general river system health.

#### 5.1.1 Scope and Approach

The scope of this review includes reviewing the aquatic ecology-related environmental assessments and monitoring activities undertaken during the audit period by the Operator and subcontractors engaged by the Operator. The review provides an assessment of the McArthur River health over a large but defined area, in the vicinity and downstream of the Mine, covered by the monitoring programs; it does not provide information that covers the larger catchment scale area.

The river health and aquatic ecology assessment was undertaken by IM sub-consultant Freshwater Ecology Pty Ltd, and included:

- Reviewing the operating legislative requirements relevant to the aquatic ecology assessment
- Reviewing monitoring programs and management actions developed to meet the operating requirements and environmental objectives
- Assessing the Operator's implementation of the monitoring and conclusions drawn, as well as management programs and actions
- Undertaking a general health of system assessment based on the information provided by the Operator.

The review was undertaken with following limitations:

- Documents dated prior to 2018 were not reviewed as they were outside the audit period
- No site visit and associated interviews were undertaken by Freshwater Ecology staff
- River health assessment was based on data provided by the Operator only and was undertaken at a high level.

#### 5.1.2 Findings

##### General

Since the commencement of operations at the Mine in 1995 there have been numerous changes to the mining operations and the Authorisation conditions. Some of the changes have arisen from Departmental interests in the aquatic ecosystems' health and the beneficial uses of the McArthur River. These changes have broadened and strengthened the monitoring programs as they have evolved. During the audit review period the key addition has been the inclusion of non-lethal sampling of fish tissue for metal concentration analysis.

The significance of river health is reflected in the overarching environmental management objectives in the MMP, these include:

- Objective 1: Protect the McArthur River beneficial uses and community values from mining impacts
- Objective 2: Facilitate development of the ecosystems and their functions along the McArthur River diversion channel for terrestrial and aquatic flora and fauna.

## Review of Freshwater Ecology Activities

To meet the environmental objectives the Operator developed performance indicators which are assessed through the implementation of several monitoring programs, trigger action response plans (TARPs) and management actions. The monitoring programs have been developed and refined over several years to maximise their efficacy.

Management actions, related to facilitating the development of the ecosystems and their functions along the McArthur River and Barney Creek diversion channel, include the revegetation of stream banks and the introduction of instream woody debris. The effectiveness of these actions is assessed through the monitoring programs (in both the Freshwater Ecology Monitoring Program and the Rehabilitation Management Plan (RMP)).

In addition to monitoring, the Operator has ongoing controls to minimise/eliminate potential impacts as a result of mining and non-mining activities. These controls include:

- A water management system to prevent contaminated water from entering the river system
- Dust emission controls to prevent contamination of waterways via dust
- The WDL outlines the conditions under which good quality water, following storage and treatment, may be released into the surrounding waterways and not impact the environmental values detailed in the WDL
- A detailed design for the NOEF, which includes various quality control checks including the requirement for an ICE
- A detailed design for the TSF, which includes various quality control checks including the requirement for an ICE and ITRB
- Seepage-capture ponds and sumps to prevent contaminated seepage from entering waterways
- Routine inspections and monitoring of infrastructure.

## Freshwater Ecology Monitoring Programs

The Operator has undertaken freshwater ecology monitoring since 2006. There are currently four monitoring programs undertaken:

1. Macroinvertebrate Monitoring
2. Diversity and Abundance of Aquatic Fauna
3. Freshwater Sawfish and Barramundi Acoustic Monitoring
4. Metals in Aquatic Fauna.

The objectives across the four monitoring programs are:

- Monitor fish populations in permanent and semi-permanent pools
- Monitor populations of *Pristis pristis* (Freshwater Sawfish)
- Monitor fish diversity in temporary or semi-permanent pools and riffles

- Monitor fish passage success through the McArthur River diversion channel
- Monitor the diversity and distribution of species within Surprise and Barney Creeks.

### **Management Actions at the Mine**

A RMP has been prepared by the Operator to establish a rehabilitation monitoring and management system that enables the Operator to progress rehabilitation towards closure objectives, including Objective 2: Facilitate development of the ecosystems and their functions along the McArthur River diversion channel for terrestrial and aquatic flora and fauna. The RMP outlines the overall effectiveness of rehabilitation activities. The Freshwater Ecology Monitoring Program (Macroinvertebrate Monitoring and Diversity and Abundance of Aquatic Fauna) results provide an assessment of the effectiveness of the rehabilitation activities in relation to aquatic ecology outcomes.

The key rehabilitation activities relevant for aquatic ecology are:

- Revegetation along the McArthur River and Barney Creek diversion channels
- The introduction of instream woody debris.

Revegetation of the diversion channels commenced in 2007 and has continued since. The key objectives of revegetation are to:

- Increase bank stability
- Provide shading within the river channel
- Provide a source of carbon for aquatic ecosystems
- Provide a long-term source of instream woody debris.

To date, the focus has been on replanting the upper sections of the diversion channels in accordance with the schedule in the RMP.

The installation of Large Woody Debris (LWD) in the diversion channels has been undertaken since 2010. The key objectives of the LWD introduction are to:

- Increase meso and microhabitat diversity within the channel
- Alleviate bank erosion
- Provide a source of carbon for aquatic ecosystems
- Provide refuge holes for migrating fish.

To supplement the LWD program, small and medium sized woody debris has also been added to the McArthur River diversion channel. The aim of this is to add additional organic matter to the channel in an attempt to improve macroinvertebrate assemblages.

### **Compliance with Meeting Environmental Objectives**

Table 5-1 and Table 5-2 provide a summary assessment of achievement towards environmental Objectives 1 and 2. For each monitoring program / management action the following is discussed:

- The applicability of the monitoring program / management action
- Compliance with meeting the objective
- Opportunities for improvement.

It is noted that several of the OFIs have already been proposed or are currently planned.

### **Objective 1. Protect the McArthur River beneficial uses and community values from mining impacts**

The current monitoring programs are considered to be suitable and sufficiently well designed to assess potential impacts on the McArthur River ecosystems and beneficial uses. The performance indicators and trigger values provide clear direction and actions to mitigate potential impacts when and if they occur.

A summary of the review of the Operator's compliance with meeting Objective 1 is provided in Table 5-1. For each of the monitoring programs the 2019-2020 EMP assesses compliance against the relevant performance triggers. Level 1<sup>2</sup> performance trigger was achieved for all monitoring categories except tissue metal concentrations which was Level 2<sup>3</sup> performance trigger.

Exceedances of several Maximum Permitted Concentrations (Australia New Zealand Food Standards Code, Standard 1.4.1, Schedule 19) noted in the mean lead tissue concentrations in Angas's Mussel (*Vesunio angasi*) and rainbowfish (*Melanotaenia splendida*) in 2018 to 2020 were limited to the Barney Creek site within the operational areas within the Mine site area and mineral lease boundary. The public do not have access to this location as it is within the mineral lease boundary and as a precaution, waterway signage at this location states that public access to these areas is prohibited.

Reductions in the tissue metal concentrations from the 2018 to 2020 monitoring period appear to be attributable to the management actions taken to physically remove contaminated sediments within the Barney Creek diversion channel. Data collected over the 2018 to 2020 monitoring programs demonstrated that all other fish caught throughout the McArthur River catchment were considered safe to consume. This included barramundi (*Lates calcarifer*), sooty grunter (*Hephaestus fuliginosus*), archer fish (*Toxotes chatareus*) and cherabin - giant freshwater prawn (*Macrobrachium spinipes*), which are the species most likely to be consumed by people.

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<sup>2</sup> Level 1 – TARP definition – when a performance indicator is below the Level 1 trigger value this suggests performance is achieving overarching environmental objectives.

<sup>3</sup> Level 2 – TARP definition – when a performance indicator is above the Level 1 trigger value and below the Level 3 trigger value indicating that potentially adverse behaviour is occurring, however the environmental objectives continue to be met.



Table 5-1: Operator compliance with Objective 1 - Protect the McArthur River beneficial uses and community values from mining impacts

Reference	Monitoring program / Management action	Applicability of the monitoring program / management action	Compliance with meeting objective
Obj.1-01	Freshwater Macroinvertebrate Monitoring	This monitoring program has been developed and refined since 2008 to allow for a quantifiable and site-specific assessment to detect statistically significant differences in aquatic macroinvertebrate communities resulting from Mine activities.	The IM agrees with the conclusions of the Operator external experts' assessment that it indicates no statistically significant differences in macroinvertebrate assemblages in sites upstream and downstream of Mine operations for the monitoring period encompassing the 2018 to 2020 reporting periods.
Obj.1-02	Aquatic Fauna - Abundance and Diversity Monitoring	This monitoring program has been developed and refined since 2006 to allow for a quantifiable and site-specific assessment to detect statistically significant differences in aquatic macroinvertebrate communities resulting from Mine activities.	The monitoring program appears to have been implemented in accordance with the approved MMP. The IM agrees with the conclusions of the Operator's external experts' assessment that there has been no observable change in species diversity and abundance outside the range of natural variance (largely driven by inter year seasonal flow variation). The Operator's external expert's assessment that reduced abundance in the 2019-2020 period is likely to have been driven by shorter periods of flow connectivity and is supported by data collected in previous years where similar rainfall and low water conditions were noted.

Reference	Monitoring program / Management action	Applicability of the monitoring program / management action	Compliance with meeting objective
Obj.1-03	Aquatic Fauna - Metals	This monitoring program has been developed and refined since 2005. Significant improvements to the monitoring program were made in 2009 to allow species specific comparisons between sites. In 2014 larger species, more likely to be consumed by people were included in the monitoring program. These, and other, improvements, have increased the appropriateness and robustness of the program.	The IM agrees with the conclusions of the Operator's external experts' assessment that the data suggests little measurable effect on tissue metal concentrations in the McArthur River and downstream environments. The program is suitably designed to detect any potential metal tissue concentration elevations in the future. Past detection of elevated metal tissue concentrations has informed management actions.
Obj.1-04	Physical removal of sediments within the Barney Creek stream diversion channel	The management action to physically remove contaminated sediment was identified in the 2017-2018 sediment assessment. This management action provided a solution to remediating a known source of contamination, hence contributing to protecting downstream beneficial uses and environmental values.	The IM agrees that the results of the Operator's removal of contaminated sediment in the Barney Creek diversion channel show reduction in cadmium, arsenic, lead, and zinc concentrations compared with those recorded in 2018.

**Objective 2. Facilitate development of the ecosystems and their functions along the McArthur River diversion channel for terrestrial and aquatic flora and fauna.**

The current monitoring programs are considered by the IM to be suitable and sufficiently well designed to monitor the development of ecosystems and their functions along the McArthur River diversion channel. The management actions to revegetate the stream banks and to introduce instream LWD are appropriate for facilitating the development of the ecosystems and their functions along the McArthur River diversion channel. While the McArthur River diversion channel appears to offer a lower level of quality aquatic habitat than the natural river channel there appears to be trajectory of increasing ecosystem diversity and resilience.

A summary of the review of the Operator's compliance with meeting Objective 2 is provided in Table 5-2. For each of the monitoring programs the 2019-2020 EMP assesses compliance against the relevant performance triggers. Level 1 performance was achieved for all monitoring categories except

tissue metal concentrations. These exceedances are the same as for Objective 1 and are discussed below in River System Health Review section.

*Table 5-2: Operator compliance with Objective 2 - Facilitate development of the ecosystems and their functions along the McArthur River Diversion Channel for terrestrial and aquatic flora and fauna*

Reference	Monitoring program / Management action	Applicability of the monitoring program / management action	Compliance with meeting objective
Obj.2- 05	Freshwater Macroinvertebrate Monitoring	This monitoring program has been developed and refined since 2008 to monitor the development of instream habitats in the McArthur River and Barney Creek Diversion Channels. The level of sampling and sampling sites selected were appropriate for meeting the monitoring objective to assess development of macroinvertebrate assemblages within the diversion channels.	The monitoring program appears to have been implemented in accordance with the approved MMP. The IM agrees with the conclusions of the Operator's external experts' assessment. This being that the results suggest that macroinvertebrate assemblages riffle sites along the McArthur River diversion channel appeared to have resembled those in reference sites within 2 years of channel operation, and that edge habitats were becoming more similar over time.
Obj.2-06	Aquatic Fauna - Abundance and Diversity Monitoring	Components of this monitoring program have been developed and refined since 2008 to monitor changes in aquatic fauna in the diversion channels, monitor fish passage success through the McArthur River diversion channel, and assess the effectiveness of adding woody debris to the McArthur River Diversion channel as a key rehabilitation strategy.	The monitoring program appears to have been implemented in accordance with the approved MMP. The IM agrees with the conclusions of the Operator's external expert's assessment that there has been no observable change in species assemblages related to mining activities. Lower species diversity in channel habitats (particularly habitats which lack reintroduction of woody debris) suggest the channel still provides poorer habitat than natural channels. However, there appears to be a trajectory of improvement since channel operation in areas where more complex habitat has been introduced.

Reference	Monitoring program / Management action	Applicability of the monitoring program / management action	Compliance with meeting objective
Obj.2-07	Aquatic fauna – Fish Passage Monitoring	Since 2011 tagging has been focused on migratory species, notably barramundi and sawfish, this included dart tags. Specimens captured at locations whose future movements were likely to inform the objectives of the acoustic monitoring program were fitted with acoustic tags.	IM agrees that the recording of a sawfish within and upstream of the McArthur River diversion channel in both 2018-2019 and 2019-2020 periods supports the Operator's expert's assessment that fish passage for this species is not impaired.
Obj.2-08	Aquatic Fauna - Metals	The background of this monitoring program is described in Table 5-1 for Objective 1-03. This program includes sites within the diversion channels since operation.	The monitoring program appears to have been implemented in accordance with the approved MMP. The IM agrees with the conclusions of the Operator's external experts' assessment that Mine operations continue to have little measurable effect on the McArthur River main channel but that several exceedances in the Barney Creek diversion channel require maintenance to reduce the risk of future exceedances.
Obj.2-09	Revegetation of stream banks	The management action to revegetate the banks of the Barney Creek diversion channels commenced in 2007 and the McArthur River diversion channel in 2019. The revegetation of banks along the diversion channels is likely to provide short term benefits in the form of bank stabilisation, and long term by providing organic input, increased shading, and a natural source of instream woody debris recruitment.	IM agrees that the development of a functional riparian vegetation community will facilitate the development of the ecosystems along the diversion channels. Still in its early phase, rehabilitation and ultimate success will be measured over the long term. Riverbank rehabilitation establishment and coverage area success is impacted most years by large wet season flows in the McArthur River.

Reference	Monitoring program / Management action	Applicability of the monitoring program / management action	Compliance with meeting objective
Obj.2-10	Introduction of instream woody debris	The management action to introduce instream woody debris into the diversion channels commenced in 2010. The introduction of instream woody debris provides a short to medium term benefit of providing habitat, increasing mesohabitat and habitat diversity, and providing organic input for aquatic ecosystems.	The IM agrees with the results of the Operator's external experts' assessment that the introduction of instream woody debris is most likely contributing to increased macroinvertebrate assemblage development and resilience.

**River System Health Review**

This river system health review has been based on the information provided by the Operator and its consultants. It represents data collected from sites selected for the monitoring programs to meet the environmental objectives of the MMP and AMP. As such, it provides an assessment of the McArthur River health over a large but defined area in the vicinity and downstream of the Mine and does not provide information that covers the larger catchment scale area.

The Operator has classified the condition of the McArthur River, within the Mine area boundary, as a slightly to moderately disturbed ecosystem, in accordance with Australian and New Zealand guidelines for fresh and marine water quality (2018). Slightly to moderately disturbed systems (95% biodiversity protection) are ecosystems in which aquatic biological diversity may have been slightly adversely affected by human activity. However, biological communities remain in a healthy condition and ecosystem integrity is largely retained.

Overall, the monitoring results obtained from the Operator indicate that the aquatic ecosystems of the McArthur River and its tributaries are in good condition. The notable exception relates to Barney Creek which is located adjacent to mining activities within the mineral lease boundary. Barney Creek is highly ephemeral and retains little water for much of the year. While tissue metal concentrations were detected in aquatic biota these were restricted to smaller fish species (which are unlikely to be consumed) and a mollusc species. The tissue metal concentrations were found in low concentrations and in amounts which are unlikely to cause human health concerns. The public do not have access to the areas of Barney Creek located within the mineral lease boundary and collection and consumption of aquatic biota from these areas is prohibited. Monitoring and management of mining activities and the impacts on aquatic ecosystems is ongoing.

Data collected over the 2018 to 2020 monitoring programs found that all other fish from the McArthur River catchment taken outside the mineral lease boundary, had low levels of metals, and poses a low risk to human health through the consumption of fish.

Consistently high levels of metals have been recorded in freshwater mussels in most river catchments throughout the region, including river catchments unlikely to be affected by the mine. It is considered unlikely that sufficient numbers of mussels could be collected and consumed by people to exceed an

intake of metals that would have a detrimental health effect. However, because of the high levels of metals found in the mussels in the region, it is suggested that consumption of mussels be limited.

The 2018 to 2020 monitoring findings showed that it was safe for people to eat commonly fished animals from the McArthur River, namely: barramundi, sooty grunter, archer fish and cherabin (giant freshwater prawn).

The McArthur River diversion channel was constructed over the 2008-2009 wet season. As such it is an artificial channel that does not provide the same habitat as naturally formed river channels. There have been significant and ongoing efforts to reinstate habitat conditions typical of natural river channels, primarily development of the riparian vegetation and the introduction of instream woody debris. The monitoring data collected to date suggest that these actions have improved and are likely to continue to improve the aquatic habitat along the McArthur River diversion channel.

During stakeholder engagement undertaken with the local community in 2020, eight waterway sites were identified as being important to local communities, a list of these sites is provided in Table 6-1. The ability to consider these sites as a part of the metal tissue contamination monitoring program presents an opportunity to provide directly relevant information to the local community. The location of these sites was compared with the current metal contamination monitoring sites to identify if any of these sites were not currently being assessed. Of the eight sites, seven are currently located in proximity to one or more sites for which samples are collected for tissue metal concentrations. The only site noted outside of the monitoring program and of significance for local communities was at Batten Point in the McArthur River estuary. Inclusion of tissue metal concentration sampling at this remote site should be given consideration to determine if this data would be beneficial to enhance the relevance of the monitoring program to the local community.

### 5.1.3 Opportunities for Improvement

Potential opportunities to support continuous improvement identified for river system health through the review and audit process are detailed in Table 5-3, noting these are not mandatory requirements.

Table 5-3: River System Health – Operator opportunities for improvement

Reference	Monitoring program / Management action	Opportunities for Improvement
Obj. 2-05	Freshwater Macroinvertebrate Monitoring	Adopt the conclusions of the Operator’s external experts that it is preferable to increase the number of reference sites along the McArthur River rather than in adjacent catchments.
Obj. 2-06	Aquatic Fauna - Abundance and Diversity Monitoring	Maintain longer term data collection for comparison of annual aquatic fauna program to better understand longer-term trends and influences of inter year variability in flow on aquatic fauna community development and resilience in the McArthur River diversion channel.
Obj. 2-08	Aquatic Fauna - Metals	Determine if inclusion of tissue metal concentration sampling at the remote Batten Point (McArthur River estuary) location would be beneficial to the monitoring program and/or enhance the relevance of the monitoring program to the local community.

#### **5.1.4 Conclusions**

The review provides a general assessment on overall river system health as it relates to key user definitions – fish health and general aquatic ecology based on the information provided by the Operator. Overall, the McArthur River and its tributaries were considered to be in good health, with some exceptions noted in areas immediately adjacent and proximal to operational areas.

During the auditing period the performance of the Operator in meeting their environmental objectives was assessed. The Operator has a broad range of monitoring programs and management actions that have been developed over the Mine life to meet the environmental objectives. These were well implemented and where impacts were noted they were adequately described, and mitigation actions recommended in line with the TARPs. The review supports the continuation of the current aquatic ecology monitoring programs as these activities are appropriate and effective to achieve the river system health objectives.

A broad river health assessment was undertaken with the information provided by the Operator. It determined that the McArthur River and its tributaries are in good condition. However, there are localised issues associated with some elevated levels of metals in smaller creeks immediately adjacent to mining activities within the mineral lease boundary and these will require ongoing monitoring and management.

Data collected over the 2018 to 2020 monitoring programs found that all other fish from the McArthur River catchment taken outside the mineral lease boundary, had low levels of metals, and poses a low risk to human health through the consumption of fish.

Consistently high levels of metals have been recorded in freshwater mussels in most river catchments throughout the region, including river catchments unlikely to be affected by the mine. It is considered unlikely that sufficient numbers of mussels could be collected and consumed by people to exceed an intake of metals that would have a detrimental health effect. However, because of the high levels of metals found in the mussels in the region, it is suggested that consumption of mussels be limited.

Monitoring of the McArthur River diversion channel suggests that the management actions to vegetate the riparian zone and introduce instream woody debris are facilitating the development of the ecosystems and their functions.

## 6 Stakeholder Engagement

### 6.1 Scope and Approach

The IM's stakeholder engagement approach aims to meet the following objectives:

- Communication reflect stakeholders' interests
- Engagement is appropriate, relevant and inclusive and builds stakeholders' trust of the IM team, process and outcomes
- Stakeholders' perceive the IM process as transparent, which facilitates stakeholder trust of the outcomes
- Community and key stakeholders are informed about the environmental review and audit report findings.

A comprehensive Stakeholder Engagement Plan was prepared to guide community and stakeholder engagement and communications for the IM. Advisian engaged CCC to facilitate community engagement throughout the IM process.

The Stakeholder Engagement Plan nominated a phased engagement approach for the IM process that aligns with the key IM output and activities.

- **Phase 1: Initial engagement** – Engagement to inform the local communities and stakeholders of the IM process, and to understand stakeholders' key interests and ascertain how the community would like to be engaged.
- **Phase 2: Engagement regarding the AEPARs** – Engagement to communicate the outcomes of the IM's AEPAR to the community and other stakeholders.
- **Phase 3: Engagement regarding other report findings** – Engagement to communicate the outcomes of the IM's annual reports and review activities.

Phase 1 initial engagement took place in September and October 2020, with Phase 2 engagement scheduled to commence in the first half of 2021 and Phase 3 occurring in 2021 and 2022.

A revised Stakeholder Engagement Plan was developed in response to COVID-19 restrictions and was conducted concurrently with the IM activities during the preparation of the AEPAR.

The initial engagement approach and report findings are summarised in the following section.

### 6.2 Initial Engagement

The Phase 1 – initial engagement process set out to:

- Introduce the IM team to local stakeholders and explain the role and responsibilities of the IM
- Capture current community perceptions about the existing IM process and engagement
- Capture community feedback on the proposed future IM engagement process and confirm how the local community and local stakeholders would like to be consulted into the future
- Capture community views about what information is important to the local community for inclusion in the AEPAR and IM communications.



COVID-19 prevented the IM team from physically travelling to the local community in Borroloola to complete the initial round of engagement. Consequently, engagement was conducted in the local community by CCC. CCC also completed community consultation via telephone calls and emails.

Community fact sheets and a PowerPoint presentation were prepared to describe the IM role and engagement process and were provided to stakeholders via email. The emails were subsequently followed up with phone calls from CCC.

Stakeholder feedback was collated, and a summary of consultation outcomes is presented in Section 6.3. Stakeholder feedback will be used to guide future communication content and the stakeholder engagement approach for subsequent engagement.

## **6.3 Findings**

Initial engagement shows that stakeholder interest focused primarily upon four broad issue areas:

- River and fish health
- Transparency of information
- Preference for face-to-face consultations and maintaining ongoing community-IM dialogue
- Provision of clear and simple information by the IM with local relevance.

### **6.3.1 River and Fish Health**

Stakeholders reported that guaranteeing the health of the river and the animals in it, particularly the fish, is a critical issue for community stakeholders. The river is an essential part of the community in the region and represents not only recreational interests but also a traditional food source for many community members. The health of the environment surrounding the community more broadly is considered to be fundamental for the future of the community.

### **6.3.2 Transparency of Information**

Transparent information sharing with the community about issues of importance is also something that community stakeholders view as critical.

Community stakeholders were informed that the IM is planning to prepare visual annual report cards which would condense AEPAR information in a clear and simple way. Stakeholders said the report cards would help communicate IM outcomes, especially if the report cards were paired with verbal engagement. This would allow the community individually or in small groups to ask questions and receive answers verbally and to clarify any points as required.

### **6.3.3 Face-to-Face Consultations and Maintaining Community Relationships**

Relationships and relationship building are an essential aspect of engaging effectively with Aboriginal communities. When travel is open again, the majority of key stakeholders consulted indicated that they would like to meet and be introduced to the IM team members in person.

Although the COVID-19 pandemic has led to an increase in the use of virtual and online engagement tools such as Zoom or Microsoft Teams, these were not viable options for the initial IM engagement. This was primarily due to stakeholders not having access to technology and due to stakeholder constraints in attending proposed online engagement activities.

Stakeholders reported that the one-on-one consultations worked well as they felt comfortable to share ideas freely. It was discussed that one-on-one, or small group consultations are a good engagement approach for the IM to continue into the future as it would allow people to better understand the information in the annual reports.

### 6.3.4 Clear and Simple Information with Locational Relevance

While the annual report cards are a key component of providing useful information from the annual environmental reports to the community in a simple and clear way; community stakeholders also indicated they would like to have visual communication materials that note locational areas that are relevant to community members. This could include maps of areas such as those listed in Table 6-1.

*Table 6-1: Key waterway locations identified by the local community*

No.	Location Name
1	The main river crossing at the bridge before Garrawa 1 and 2
2	The river mouth where Rocky Creek meets the McArthur River
3	Bing Bong (Mule Creek) boat ramp
4	Barney Creek
5	Five Mile fishing spot (location to be confirmed)
6	Surprise Creek
7	Batten Point
8	McArthur River crossing near Merlin (8 mile)

## 6.4 Conclusions

Stakeholder interest focused primarily upon four broad issues, namely: river and fish health, transparency of communications, preference for ongoing face to face consultation, and the provision of clear information with local relevance. The stakeholder feedback will be used to guide future communication content and the stakeholder engagement approach for future engagement.

Phase 2 engagement is scheduled to commence in the first half of 2021 and will communicate the outcomes of this AEPAR. An AEPAR Annual Report Card will be developed to support engagement and provide the community with an easy-to-read summary of the AEPAR 2020 findings that are relevant to the community's areas of interest.

Records of future consultation will continue to be documented in engagement summary reports.

## 7 Overall Conclusions

The IM has assessed that both the Operator and Department have achieved a high level of overall compliance with the Authorisation conditions and with implementation of the NT EPA Recommendations. The Operator's level of regulatory compliance has assisted to proactively manage potential environmental risks to enable approved operations while safeguarding environmental values.

The audit period covered 01 April 2018 to 30 April 2020 and during this time the Operator has revised operating practices and applied effort to allow the Mine to re-establish effective management over air emissions and other potential environmental risks. It is the opinion of the IM that during the audit period the Operator has continued a transition from reacting to problems to avoiding or minimising potential problems by proactively managing and monitoring environmental issues across a wide range of site activities and with a strategic focus on continuous improvement in environmental performance.

The Operator's level of compliance with the Authorisation conditions across all key operational activities is a measure of the high level of fulfillment of regulatory requirements. The Operator has also attained a high level of compliance with the WDL conditions. Full compliance was achieved for the active NT EPA Recommendations applicable to the Operator. Opportunities for the Operator to improve tracking and reporting of voluntary commitments were identified, noting these commitments are voluntary and not administered by the Department.

The review of the Department's regulatory procedures and approach identified some efficiency opportunities around streamlining activities, especially those involving recurring regulatory processes. The review found the Department to have a strong focus on key environmental risks (e.g. high number of conditions on NOEF and TSF), and a practical approach to compliance and monitoring. Furthermore, the improved environmental performance and high levels of regulatory compliance by the Operator can be attributed, at least in part, to the processes and approach adopted by the Department. The Department has effectively incorporated the NT EPA Recommendations into the Authorisation conditions and has also implemented the recommendations which require action by the Department.

The review provides a general assessment on overall river system health based on the information provided by the Operator. Overall, the McArthur River and its tributaries were considered to be in good health, with some exceptions noted in areas immediately adjacent to operational areas within the mineral lease boundary, where public access is not permitted and which require ongoing management.

Stakeholder interest focused primarily upon four broad issues, namely: river and fish health, transparency of communications, preference for ongoing face to face consultation, and the provision of clear information with local relevance.

Each section of the AEPAR describes the findings of the environmental compliance review, identifies opportunities for improvement and provides relevant conclusions. The listed opportunities are considerations aimed at continuous improvement for potentially enhanced environmental compliance, noting these are not mandatory requirements. Noteworthy successes that achieved improved performance beyond regulatory compliance by the Operator or Department have been identified. The AEPAR did not identify any environmental issues requiring urgent investigation.

During the audit period a number of Authorisation conditions, WDL conditions and NT EPA Recommendations were not applicable as they relate to 'future' requirements subject to the approval of the OMP which took effect on 13 November 2020. The compliance performance of the McArthur River Mine against these recently commenced regulatory requirements will be assessed in subsequent AEPARs.



**Appendix A**  
Authorisation  
Compliance Workbook – Operator

Authorisation Compliance Workbook - Operator

2019 Authorisation Condition No.		Condition/Requirement	ASPECT										Score	Compliance Level	Evidence	Comments	
			Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting						
<b>Authorisation 0059 (dated 15 August 2019), Audit period 01 April 2018 to 30 April 2020</b>																	
<b>DEFINITIONS</b>																	
1		In this document, unless the contrary intention appears:															Note that sub-conditions 1.a to 1.z are not listed as they are all definitions and are unable to be audited for compliance.
<b>INTERPRETATION</b>																	
2		In this document, unless the contrary intention appears:															Note that sub-conditions 2.a to 2.h are not listed as they are all interpretations and are unable to be audited for compliance.
<b>GENERAL</b>																	
3		Subject to any conditions contained in the Act and this document,[1] the Operator must comply with the commitments and activities contained in the MMP including the implementation of all systems referred to in the MMP.[2]										N/A	Not Applicable				Assessed by evaluation of all other conditions.
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.										N/A	Not Applicable				Assessed by evaluation of all other conditions.
<b>MINING MANAGEMENT PLAN AND REPORTING</b>																	
5		The mine site is to be developed and operated in accordance with relevant legislation e.g. Environment Protection and Biodiversity Conservation Act 1999, Territory Parks Wildlife and Conservation Act 2006 and Heritage Conservation Act 2011.										N/A	Not Applicable				Assessed by evaluation of all other conditions.
6		The Operator must on 31 August 2017 and on each anniversary of that date (or such other date as nominated by the Operator and approved by the Minister), review the MMP and if necessary, amend the MMP.[1]										3	Part Compliance (High)	MMP is not always reviewed and amended as required (annually on the 31 August) with material changes in operational activities. Most recent MMP updated and submitted to DPIR on 31Jan2020.  PRO-2600069 Change Management Procedure provided, which includes the requirement for a risk assessment to be completed for "the introduction of significant change to existing systems, processes, or equipment". Change is defined in the Change Management Procedure as "Change is an addition, revision, deletion, modification or replacement of a non like-to-like nature to any aspect of the organisation..." and "Change is significant if it could potentially have a material impact on the achievement of objectives". Appendix I of the Change Management Procedure includes screen shots of the online change request forms that show prompts for if there are any HSEC and governance risks associated with the proposed changes and if the change will impact any licences, permits or statutory requirements. The management team will then make a decision on whether to go ahead and what controls will be required. This change management process demonstrates that the Operator considers if the MMP requires updating based on assessment of the significance of the proposed changes.  Insufficient evidence available at time of the audit.		OFI: Provide documentation of a review of the MMP on each anniversary (31 August) to demonstrate that the review is considered annually and amended as necessary.	
7		The Operator must submit quarterly all environmental monitoring data[2] 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:															
7.a		surface water;		1			1					1	4	Full Compliance	Sighted Q4 2018 Quarterly Monitoring Report 1810-1812. Provided email submission for Quarterly Monitoring Report 1810-1812 dated 08Feb2019. Included in the Quarterly Monitoring Report 1810-1812 submitted via email dated 08Feb2019. Performed as required.	Check of SW11 discharge monitoring required weekly was undertaken. Over the quarter there was one week missing on 7Oct2019.	
7.b		groundwater;				1						1	4	Full Compliance	Sighted Q4 2018 Quarterly Monitoring Report 1810-1812. Provided email submission for Quarterly Monitoring Report 1810-1812 dated 08Feb2019. Groundwater included in the Quarterly Monitoring Report 1810-1812 submitted via email dated 08Feb2019. Performed as required.		
7.c		dust	1									1	4	Full Compliance	Sighted Q4 2018 Quarterly Monitoring Report 1810-1812. Provided email submission for Quarterly Monitoring Report 1810-1812 dated 08Feb2019. PM <sub>10</sub> included in the Quarterly Monitoring Report 1810-1812 submitted via email dated 08Feb2019. Performed as required.		

Authorisation Compliance Workbook - Operator		ASPECT										Score	Compliance Level	Evidence	Comments
2019 Authorisation Condition No.	Condition/Requirement	Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
7.d	soil;										1	3	Part Compliance (High)	Sighted Q4 2018 Quarterly Monitoring Report 1810-1812. Provided email submission for Quarterly Monitoring Report 1810-1812 dated 08Feb2019. Soil monitoring data was not reported quarterly nor via the template required by Condition 7 during the reporting period. Soil Monitoring Annual Report October 2019 - Environmental Monitoring Report - Appendix D (also titled: Soil Monitoring Report McArthur River Mine and Bing Bong Loading Facility May 2019 - April 2020 Rev Final - 001 dated 01Jul2020). Soil Monitoring Report McArthur River Mine and Bing Bong Loading Facility April 2018 - April 2019 Rev Final - 001 dated 12Jul2019. Monitoring data provided annually not quarterly and not in the prescribed format.	Soil Monitoring Annual Reports (attached to the OPR/EMR) were reviewed as evidence of monitoring being undertaken, and submitted to the DPIR.  Although the monitoring has been undertaken, this condition requires submission quarterly and in the required format, which has not occurred. A part compliance (high) has been scored on the basis of the administrative nature of the condition and the low level of environmental risk.  OFI: Submit all quarterly monitoring data inclusive of soil, sediment and internal transfers, to the Department in the required format.
7.e	sediments;					1					1	3	Part Compliance (High)	Sighted Q4 2018 Quarterly Monitoring Report 1810-1812. Provided email submission for Quarterly Monitoring Report 1810-1812 dated 08Feb2019. Fluvial Sediment monitoring data was not reported quarterly nor via the template required by Condition 7 during the reporting period. Appendix X - Fluvial Sediment Monitoring, 2018 (McArthur River Mining Fluvial Sediment Monitoring 2018 Revision 0 dated 04Dec2018) 2019 Monitoring of Metals/Lead in Fluvial Sediments & Aquatic Fauna Environmental Monitoring Report – Appendix L (also titled: MONITORING OF SELECT ANALYTES AND LEAD ISOTOPE RATIOS IN FLUVIAL SEDIMENTS, FISH, CRUSTACEANS AND MOLLUSCS OF THE LIMMEN, McARTHUR, AND ROBINSON RIVERS 2019 Rev 0 dated 25Feb2020 Monitoring data provided annually not quarterly and not in the prescribed format.	The Fluvial Sediment Monitoring Annual Reports (attached to the OPR/EMR) provided as evidence of monitoring being undertaken, and submitted to the DPIR. Note the fluvial sediment monitoring data was included in the same report as the Metals in Aquatic Fauna monitoring in the EMR 2020 reporting period.  Although the monitoring has been undertaken, this condition requires submission quarterly and in the required format, which has not occurred. A part compliance (high) has been scored on the basis of the administrative nature of the condition and the low level of environmental risk.  OFI: Submit all quarterly monitoring data inclusive of soil, sediment and internal transfers, to the Department in the required format.
7.f	gas; and	1									1	4	Full Compliance	SO <sub>2</sub> included in the Quarterly Monitoring Report 1810-1812 submitted via email dated 08Feb2019. Performed as required.	
7.g	water transfers and discharges (including dates, times and volumes).6		1								1	3	Part Compliance (High)	Limited evidence of this condition given not all water transfers are reported in the required format or quarterly.  Quarterly Monitoring Report 1810-1812 submitted via email dated 08Feb2019 had a tab for discharges records with the entry NIL.  Reviewed the Water Management Plan 31Jan2020 (Version 1.0) Appendix A (2019/20 Site Water Balance for the McArthur River Mine (0790-67-C1) Rev 1 dated 09Dec2019).	Water discharge data provided is in quarterly submissions. Operator advised that on-site water transfers have not been reported via data submissions required by Condition 7 given the large amount of data and validation required.  The 2019/20 Site Water Balance for the McArthur River Mine provides metered flow data in Figure 3.2 and Tables 3.1 to 3.4. This is generally annual data split into daily averages so not quarterly monitoring required by this condition.  OFI: Submit all quarterly monitoring data inclusive of soil, sediment and internal transfers, to the Department in the required format.  OFI DITT: Department may amend the condition to remove the requirement for the Operator to submit water transfer data quarterly given the large amount of data which is provided annually.
<b>SECURITY AND LEVY</b>															
8	The Operator must provide a security of \$519,728,466 in the form of cash or an unconditional bank guarantee to the Minister prior to undertaking any mining activities authorised by this Variation of Authorisations 0059-01 and 0059-02.[7]											4	Full Compliance	Sighted email 02May2019 DPIR Receipt Confirmation.	Bank Guarantee coupled with a levy.
9	The security provided for under condition 8 will be reassessed, and may be revised, following each assessment of an amended MMP. The Operator must provide the revised security amount in the form of cash or an unconditional bank guarantee to the Minister.											4	Full Compliance	Sighted MMP amendment (January 2019) email stating that bank guarantees were received (email 29Apr2019).	
10	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 that written notice.[8]											4	Full Compliance	DPIR Tax Invoice 20180822 Remittance_Advice_For_Past_Payment_For_A_Nominated_Supplier	Evidence of written notice of levy to be paid and remittance for same amount was provided. Operator advised that the 2019/20 levy is currently being processed, which is outside of the audit period.
<b>EXPLORATION</b>															
11	The Operator must ensure that:												-		

Authorisation Compliance Workbook - Operator		ASPECT										Score	Compliance Level	Evidence	Comments
2019 Authorisation Condition No.	Condition/Requirement	Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
11.a	Works are undertaken in accordance with management systems detailed in Condition 1.i;										4	Full Compliance	Example provided for exploration on site. Geology team submit a dig and clear permit to relevant Operator departments (Environment, Survey, Community, etc) for approval especially on sensitive vegetation areas. Sighted permit to clear procedure MRMFRM220001 permit to clear operational area (4Jun2020). Sighted permit to clear procedure PRO2200033 which is frequently implemented as part of the operational activities.	A dig and clear permit is submitted prior to site visits by the geo team. The enviro team are required to check the permit against the MMP to ensure it is within the boundary specified and that the clearing isn't proposed to be more than what is entered into the security calculation.  Condition 1.i is Sustainable Development Mining Management Plan 2013-2015 volumes 1 and 2 dated 03Mar2015 plus numerous amendments are considered throughout the conditions of the Authorisation. Generally a high level of compliance.	
11.b	An environmental management plan is in place that addresses chemical use/storage (e.g. hydrocarbons, drilling fluids), erosion and sediment control, dust and associated risks common for exploration works;	1	1		1			1			3	Part Compliance (High)	Sighted Drilling Pad Preparation and Remediation Procedure SPC-3100001.  Insufficient evidence available at time of the audit.	OFI: Update procedures for exploration activities to address Hazardous Material Storage and Erosion and Sediment Control.	
11.c	Rehabilitation must be undertaken for locations not needed for further use, including the submission of a rehabilitation report that includes details on proposed adjustment of total security as a result of the works, to the satisfaction of the Minister.						1			1	3	Part Compliance (High)	The IM was advised by the Operator that rehabilitation has occurred in limited areas including exploration and river diversion. No rehabilitation reports have been submitted to date.  Insufficient evidence available at time of the audit.	Rehabilitation occurs after exploration activities. Rehabilitation has occurred in the river diversion area. No rehabilitation has occurred on the NOEF. Currently awaiting approvals e.g. AAPA certificate. No reports have been prepared to adjust security as a result of the works. A rehabilitation trial on the mine site levy wall established plants in difficult location on a steep bank in 2020.  OFI: Prepare and submit a progressive rehabilitation report as required.	
<b>NON-MINERAL WASTE MANAGEMENT</b>															
12	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:														CWF site is designated and a detailed design has been completed. Operator needs AAPA approval to commence. MMP January 2020 states the CWF will be constructed in 2020. It is not mentioned in the EMR.
12.a	concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.i.ii.12, ensuring:							1			N/A	Not Applicable			Future item. To be reviewed in 2021.
12.a.i	Detailed designs follow the approved concepts for the facility (including 100 year ARI flood immunity, CCL and protective armour, drainage works and bio-security control). The detailed design must include design objectives that satisfies both engineering and environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives;							1			N/A	Not Applicable			Future item. To be reviewed in 2021.
12.a.ii	The detailed designs must include allowances for 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; and				1			1			N/A	Not Applicable			Future item. To be reviewed in 2021.
12.a.iii	The detailed designs must be reviewed and endorsed by an Independent Certifying Engineer (ICE) without limitation on responsibility and provided to the department prior to commencement of construction.							1			N/A	Not Applicable			Future item. To be reviewed in 2021.
13	An ICE must warrant and accept both the design and construction works, without limitation on responsibility:														Future item.
13.a	during all phases of construction (including at hold points) the ICE must be present at the CWF site to oversee and certify the works that they meet design specifications and approve re-commencement of construction at defined hold points;							1			N/A	Not Applicable			Future item. To be reviewed in 2021.
13.b	any material changes to the design during construction must be approved by the ICE;							1			N/A	Not Applicable			Future item. To be reviewed in 2021.
13.c	if the ICE wishes to use the Operator's project manager/resident engineer as an onsite representative then the ICE must agree that this does not diminish responsibility or liability for the project;										N/A	Not Applicable			Future item. To be reviewed in 2021.
13.d	the ICE must hold appropriate public and professional indemnity insurance to cover the scope of works associated with the CWF design and construction;										N/A	Not Applicable			Future item. To be reviewed in 2021.



2019 Authorisation Condition No.		Condition/Requirement	ASPECT											Score	Compliance Level	Evidence	Comments
			Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting						
13.e		at completion of the construction works the ICE must approve an "as-constructed" construction report that is to be submitted to the Department. The report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied; and							1				N/A	Not Applicable		Future item. To be reviewed in 2021.	
13.f		the existing waste facilities must be decommissioned and rehabilitated, but only after an approval of rehabilitation plan by the Department. The rehabilitation plan must include details on proposed adjustment of total security as a result of the works.							1				N/A	Not Applicable		Future item. To be reviewed in 2021.	
<b>REHABILITATION TRIALS</b>																	
14		The Operator is authorised to undertake the following rehabilitation trials, in accordance with concepts defined in Condition 1.1.ii.12 and ensuring any contaminated runoff is contained with the water management circuit:															Future action. Test pads on the west side of the NOEF.
14.a		Construction Test Pads (CTP) on NOEF West stage;						1					4	Full Compliance	Mining Management Plan Amendment revision 0 dated 18Jan2019 Performed as required.	CTPs will be covered off in the 2019 MMP. 4.2.3.14 NOEF Rehabilitation discusses the NOEF rehabilitation trial to assess cover system constructability and longer-term performance. Figure 14 shows the location of the trial on the NOEF west stage.	
14.b		PAF(RE) Cell and Cover System Performance on NOEF Southeast stage; and						1					4	Full Compliance	Mining Management Plan Amendment revision 0 dated 18Jan2019 Performed as required.	Construction has not yet been completed. Cover postponed until following the next wet season. Construction reports sighted demonstrating that the construction is underway. Figure 14 of MMP Amendment shows the location of the PAF(RE) Cell trial on NOEF South East stage.	
14.c		Mine Levee revegetation.						1					N/A	Not Applicable		Proposed for later in 2020.	
<b>WASTE ROCK MANAGEMENT</b>																	
15		Waste rock is defined in Condition 1.z															
16		From the commencement of this variation to Authorisation Non-benign Waste is to be permanently placed:															
16.a		above the 100 year ARI flood level, unless flood mitigation measures are provided consistent with the 2013-2015 MMP Amendment defined in Condition 1.1.ii.12 and relevant Detailed Designs submitted to the Department in accordance with the conditions of this variation of Authorisation, with the exception of PAF(RE);		1		1			1		1		4	Full Compliance	OPR 2018 - 2019 Appendix B – MRM Commitments and Actions Register 2018-19 and EMR 2019-2020 Appendix B - 2019-2020 Reconciliation of Commitments and Actions "Parts of the NOEF base below the 1:100 year average recurrence interval (ARI) year flood level contain non-benign materials. MRM has committed to providing flood protection to these areas by developing: • suitable mitigation designs and schedules using updated flood predictions; and • NOEF designs by assessing options and assessment of risks." Implementation of this was demonstrated through: • for 2018-2019: "Construction works on flood barriers south of the Mine Infrastructure Area (MIA) and west of the South East Perimeter Runoff Dam (SEPROD) are completed. Designs for SEPROD to EPROD, and from EPROD to WPROD, are in final draft. These will be submitted once the OMP EIS is accepted." • for 2019-2020: "Refer to January 2020 MMP Section 4.2.3.12. The construction of flood levees around the NOEF are described in the NOEF MP and NOEF Construction and Design Guidelines (attached to NOEF MP). Temporary flood protection levees (20 year ARI) are proposed to be constructed, where required, to allow for the placement of non-benign material at the NOEF. Temporary levees will remain for a maximum two year period, at which time, will be upgraded to a permanent flood protection levee (100 year ARI)"  The Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report dated 04Apr2019 stated "GHD considers that the MRM report has identified all of the issues with the construction management and operation of CE Alpha in the broader context of the NOEF performance. The design is consistent with the Waste Rock management conditions of the current mine authorisation, [...]"  EMR 2019-2020 states in Section 2.5.2 "Construction of the Central East levee and installation of the temporary section of the 100-year ARI flood protection barrier between WPROD and EPROD was also undertaken as described in the January 2019 Amendment. Construction of the 20-year flood protection to the south of EPROD is described in the SE stage works."	Condition 1.1.ii.12 is the MRM MMP Amendment, January 2019, which states "non-benign materials can be placed below the 100 year average recurrence interval (ARI) flood level, subject to the progressive flood protection construction as per Section 10.8.2 of the Draft EIS Appendix U - Surface Water Impact Assessment Report."	



2019 Authorisation Condition No.		ASPECT										Score	Compliance Level	Evidence	Comments
Condition/Requirement		Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
16.b	on a compacted clay liner (CCL) or engineered low permeability material that slopes towards a Perimeter Runoff Dam (PROD) or a storage structure, as defined in 37(a);		1					1			4	Full Compliance	<p>NOEF Central West Phase Design, Construction and Operations Manual (MIN-TEC-PLN-1000-0002). Refer to Sections 6 and 8. Performance Review, Monitoring and Reporting.</p> <p>NOEF Central East Alpha Stage Complete Design Report. Refer to Section 6.1.1.1</p> <p>Section 6.2 of NOEF Central West Phase Design, Construction and Operations Manual The base or foundation of the facility has been designed to generally grade towards the east where a collection sump has been designed to allow interim collection of surface run-off (until the dump sheds into WPROD) and any underdrainage from the base of the facility. Until the 'wedge' that drains into WPROD has been completed, surface runoff must be managed by sumps in the east.</p> <p>Section 6.4.2. requires all non-benign material stored inside an encapsulating CCL.</p> <p>Section 8.2.2.2 of NOEF Central West Phase Design, Construction and Operations Manual includes checking as-built against design for the CCL for gradient of the surface to ensure that flow paths are present across the liner.</p> <p>NOEF Central East Alpha Stage Complete Design Report. Refer to Section 6.1.1.1 discusses the in-situ foundations of Central East being better than an engineered CCL, the proposed engineered CCL for the new section of CE Alpha and sloping for seepage capture.</p> <p>The Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report dated 04Apr2019 stated "GHD considers that the MRM report has identified all of the issues with the construction management and operation of CE Alpha in the broader context of the NOEF performance. The design is consistent with the Waste Rock management conditions of the current mine authorisation,[...]"</p>		
16.c	and encapsulated in a minimum of a 600mm thick CCL, or engineered low permeability material, upon construction being finalised; and		1					1			N/A	Not Applicable	<p>NOEF Central West Phase Design, Construction and Operations Manual (MIN-TEC-PLN-1000-0002). Section 6.2.1.1</p> <p>Section 6.2.1.1 requires that PAF and non-benign waste material shall be encapsulated by a minimum 0.6m compacted clay liner (CCL).</p> <p>The Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report dated 04Apr2019 stated "GHD considers that the MRM report has identified all of the issues with the construction management and operation of CE Alpha in the broader context of the NOEF performance. The design is consistent with the Waste Rock management conditions of the current mine authorisation,[...]"</p>	Future item as construction not finalised.	
16.d	the encapsulation CCL or engineered low permeability material must be covered by benign material to protect it from erosion and desiccation.		1					1			N/A	Not Applicable	<p>NOEF Central West Phase Design, Construction and Operations Manual (MIN-TEC-PLN-1000-0002). Section 6.2.1.1</p> <p>The CCL is covered by rock armouring as shown on Figure 14. Section 6.4.2.1 also highlights that fundamental to the CCL performance is careful selection and preparation of the waste rock above and below the CCL's to limit exposure to erosion and piping.</p> <p>The Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report dated 04Apr2019 stated "GHD considers that the MRM report has identified all of the issues with the construction management and operation of CE Alpha in the broader context of the NOEF performance. The design is consistent with the Waste Rock management conditions of the current mine authorisation,[...]"</p>	Future item as construction not finalised.	
17	PAF (HC) and PAF (RE) waste rock cells, if not finalised, will have interim alluvium covers placed prior to the 1st November each year.							1			3	Part Compliance (High)	<p>Operator advised that alluvial layers are "continuously being placed daily" and that wet season active areas need to remain operational.</p> <p>CE ICE Report Letter "Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 4Apr2019 "GHD considers that the MRM report has identified all of the issues with the construction management and operation of CE Alpha in the broader context of the NOEF performance. The design is consistent with the Waste Rock management conditions of the current mine authorisation,[...]"</p> <p>Insufficient evidence available at time of the audit.</p>	<p>OFI DITT: The wording of the alluvium cover placement prior to 1 November each year condition may be improved to recognise waste placement occurs all year round and not unnecessarily restrict wet season operational activities.</p> <p>OFI: Obtain and document agreement with the Department that the current methodology of alluvial cover is acceptable to recognise waste placement occurs all year round and to avoid restricting wet season operational activities unnecessarily.</p>	

Authorisation Compliance Workbook - Operator		ASPECT										Score	Compliance Level	Evidence	Comments
2019 Authorisation Condition No.	Condition/Requirement	Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
18	The Operator must only place PAF (HC) and PAF (RE) Waste Rock at the following locations:														Waste is reported in the EMR and OPR - breakdown of waste material and location of placement in the reporting period. Note that the mined PAF in Table 5 of OPR 2018-2019 equalled the waste dumped PAF in Table 7 of the OPR 2018-2019 (i.e. no missing waste volume of PAF). Table 7 of EMR 2019-2020 has PAF (HC) and PAF (RE) placed at NOEF Central West and the PAF (RE) Trial Pad. The PAF (RE) Trial Pad is located outside of the areas approved for placement of PAF (RE) waste rock. Condition 14.b approves the PAF trial pad (0.02Mt of PAF (RE)) that is located in NOEF Southeast stage and therefore is compliant with this condition.
18.a	NOEF West A, B, C and D;							1				4	Full Compliance	McArthur River Mine 2018-2019 Operational Performance Report (dated: 31Jul2019) Table 7 shows PAF (HC) and PAF (RE) placed at NOEF Central West. Table 7 of EMR 2019-2020 has PAF (HC) and PAF (RE) placed at NOEF Central West and the PAF (RE) Trial Pad. Performed as required.	OPR/EMR tracks and reports where waste material is placed.
18.b	Central West NOEF (CWNOEF) Alpha and Bravo stages, but only after the Western Perimeter Runoff Dam (WPROD) has been designed, constructed and commissioned in accordance with all requirements of the Minister;							1				4	Full Compliance	McArthur River Mine 2018-2019 Operational Performance Report (dated: 31Jul2019) Table 7 shows PAF (HC) and PAF (RE) placed at NOEF Central West. Table 7 of EMR 2019-2020 has PAF (HC) and PAF (RE) placed at NOEF Central West and the PAF (RE) Trial Pad. Performed as required.	WPROD was completed in July 2017 (before the audit period commenced) and IM sighted a completion report dated 14Jul2017.  OBS: It was problematic to distinguish between the placement of waste at Alpha and Bravo stages or Charlie stages as they were listed together in Table 7 of the EMR 2019-2020. The IM understands that the latest Authorisation approved 13Nov2020 no longer contains this condition as all areas are approved. Therefore no OFI is included.
18.c	Central West NOEF (CWNOEF) Charlie stage, only after approval under the EPBC Act; and							1				4	Full Compliance	McArthur River Mine 2018-2019 Operational Performance Report (dated: 31Jul2019) Table 7 shows PAF (HC) and PAF (RE) placed at NOEF Central West. Table 7 of EMR 2019-2020 has PAF (HC) and PAF (RE) placed at NOEF Central West and the PAF (RE) Trial Pad.  EPBC Act was granted in June 2019. Charlie stage foundation and CCL construction is discussed in section 2.5.2 of OPR 2018-2019. EMR 2019-2020 Section 2.5.2 discusses pre August 2019 benign materials only in Charlie stage and after that time (related to MMP amendment approval) non-benign material placed in Charlie stage, which is consistent with this condition.  Performed as required.	OBS: It was problematic to distinguish between the placement of waste at Alpha and Bravo stages or Charlie stages as they were listed together in Table 7 of the EMR 2019-2020. The IM understands that the latest Authorisation approved 13Nov2020 no longer contains this condition as all areas are approved. Therefore no OFI is included.
18.d	Central East NOEF (CENOEF) Alpha and Bravo, but only after:							1				4	Full Compliance	McArthur River Mine 2018-2019 Operational Performance Report (dated: 31Jul2019) Table 7 shows PAF (HC) and PAF (RE) placed at NOEF Central West. Table 7 of EMR 2019-2020 has PAF (HC) and PAF (RE) placed at NOEF Central West and the PAF (RE) Trial Pad.  Performed as required.	As the EPROD is not commissioned, no placement of PAF (HC) and PAF (RE) Waste Rock at Central East NOEF is approved and none occurred in 2018-2019 and 2019-2020 based on the OPR and EMR, respectively.
18.d.i	approval under the EPBC Act;							1				N/A	Not Applicable		Not applicable as d.i, d.ii and d.iii are all required and d.iii is not active.
18.d.ii	the completion of construction in accordance with Conditions 25 and 27; and							1				N/A	Not Applicable		Not applicable as d.i, d.ii and d.iii are all required and d.iii is not active.
18.d.iii	commissioning of the Eastern Perimeter Runoff Dam (EPROD) in accordance with Conditions 43, 44 and 45.		1									N/A	Not Applicable	Future item.	EPROD commenced construction in the 2018/2019 period but not completed prior to 19/20 wet season. Now planned to be commissioned in 2020.
CONSTRUCTION OF THE CWNOEF															
ALPHA AND BRAVO STAGES															
19	The Operator must construct, operate and maintain the CWNOEF Alpha and Bravo Stages in accordance with:														

Authorisation Compliance Workbook - Operator		ASPECT										Score	Compliance Level	Evidence	Comments
2019 Authorisation Condition No.	Condition/Requirement	Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
19.a	The version of the document entitled Northern Overburden Emplacement Facility (Central West Phase) Design, Construction & Operations Manual which has been approved by the Minister from time to time, subject to any conditions imposed or changes required by the Minister[9].							1				4	Full Compliance	Sighted NOEF Central West Phase Design, Construction and Operations Manual (MIN-TEC-PLN-1000-0002. Rev 2.1 Dated August 2015).  OPR 2018 - 2019 states in Section 2.5.2 "Bravo was undertaken as described in the February 2016 Amendment, with benign materials in the 'wedge' zone and non-benign materials in a CCL encapsulated PAF cell. Alluvium advection barriers were applied to the non-benign materials to control air flows through the pile. This process effectively regulated oxidation rates of the PAF (RE) materials. Wedge CCL construction of Bravo stage was completed over an area of 7.4 ha."  EMR 2019 - 2020 states the following "Prior to the approval of the January 2019 MMP Amendment, construction in CW stage was undertaken as described in the 2013-2015 MMP Amendment – Mining Activities and NOEF Central West (CW) Alpha and Bravo Stages, dated 05Feb2016 (the February 2016 Amendment)."	Note [9]: At the date of this document [sic Authorisation approval 15Aug2019], version 2.1 of the manual had been approved subject to the changes set out in the Operator's submission to the former Department of Mines and Energy dated 05Feb2016 (identified as MDOC2016/00840 in the Department's document management system).
19.b	Concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.I.ii.12. Should future review of the designs 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.							1				N/A	Not Applicable	EMR 2019 - 2020 states "Following the approval of the January 2019 Amendment in August 2019, the CW Charlie Stage was developed as per the OMP EIS methodology, including the development of: • a 5 m MS-NAF Base on top of the Basal CCL, sloped to direct surface runoff to the CW Charlie Sump; • 'Wedge' geometry on top of the Base zone, constructed from non-benign material in up to 7.5 m lifts, with alluvium advection barriers between each lift, and sloped to assist surface water runoff to WPROD; • the Core zone constructed from non-benign waste in up to 7.5 m lifts, with alluvium advection barriers between each lift to limit oxidation of the PAF material; and • the PAF(RE) Cell, constructed in up to 2 m lifts, with alluvium advection barriers between each lift to limit oxidation of the PAF(RE) waste."  The Operator is not aware of any further review by independent experts that require additional matters to be addressed so condition considered not applicable.	
20	During construction of the CWNOEF Alpha and Bravo stages,											-	-		Future item.
20.a	the Operator must ensure:											-	-		
20.a.i	PAF is emplaced in lift heights that minimises particle size segregation and creation of chimney structures, and must not exceed 7.5m; and							1				N/A	Not Applicable	This condition commenced in August 2019 and the Operator advised that there was no PAF remaining to be placed hence not applicable.  The following files were provided: - 62356 R1 Rev2.0 GHD letter 27Feb2015 - MRM20141209 - GHD Review of initial stage 62356 09Dec2014 Rev2  The McArthur River Mining Pty Ltd Peer Review of NOEF Monthly Construction Progress Report February 2020 dated October 2020 covered the period December 2019 onwards and stated "Wet season capping on Bravo stage continued during the reporting period." No other works in Alpha or Bravo stages were mentioned.	CW Phase ICE endorsement letters included (separate letters for foundation and then dumping onto foundation). CW Phase encompasses both Alpha and Bravo stages. Evidence provided is outside the audit period.
20.a.ii	advection barriers of appropriate thickness and moisture condition are emplaced at suitable intervals that disrupt the formation of oxygen convection cycles							1				N/A	Not Applicable	This condition commenced in August 2019 and the Operator advised that there was no PAF remaining to be placed, hence not applicable.  The following files were provided: - 62356 R1 Rev2.0 GHD letter 2015-02-27 - MRM20141209 - GHD Review of initial stage 62356 2014-12-09 Rev2.  The McArthur River Mining Pty Ltd Peer Review of NOEF Monthly Construction Progress Report February 2020 dated October 2020 covered the period December 2019 onwards and stated "Wet season capping on Bravo stage continued during the reporting period." No other works in Alpha or Bravo stages were mentioned.	CW Phase ICE endorsement letters included (separate letters for foundation and then dumping onto foundation). CW Phase encompasses both Alpha and Bravo stages. Evidence provided is outside the audit period.

2019 Authorisation Condition No.		ASPECT										Score	Compliance Level	Evidence	Comments
Condition/Requirement		Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
20.a.iii	The ICE verifies the suitability of the PAF placement methodology with respect to particle size segregation and advection barriers.							1				N/A	Not Applicable	This condition commenced in August 2019 and the Operator advised that there was no PAF remaining to be placed hence not applicable.  The following files were provided: - 62356 R1 Rev2.0 GHD letter 2015-02-27 - MRM20141209 - GHD Review of initial stage 62356 2014-12-09 Rev2.  The McArthur River Mining Pty Ltd Peer Review of NOEF Monthly Construction Progress Report February 2020 dated October 2020 covered the period December 2019 onwards and stated "Wet season capping on Bravo stage continued during the reporting period." No other works in Alpha or Bravo stages were mentioned.	CW Phase ICE endorsement letters included (separate letters for foundation and then dumping onto foundation). CW Phase encompasses both Alpha and Bravo stages. Evidence provided is outside the audit period.  Refer to OFI in condition 21.a.
20.b	the Operator must provide construction reports to the Minister upon request including the following:							1	1			N/A	Not Applicable		The IM is not aware of any reports being requested by the Minister.
20.b.i	QA and QC results and reporting for CCLs; and							1	1			N/A	Not Applicable		The IM is not aware of any reports being requested by the Minister.
20.b.ii	results and reporting of testing undertaken to waste rock placement.;							1	1			N/A	Not Applicable		The IM is not aware of any reports being requested by the Minister.
20.b.iii	results and reporting of testing undertaken to confirm alluvial materials placed at the CWNOEF would not generate AMD if exposed to water and were geotechnically suitable for the location they were placed.							1	1			N/A	Not Applicable		The IM is not aware of any reports being requested by the Minister.
21	An Independent Certifying Engineer (ICE) must warrant and accept both the design and construction works, without limitation on responsibility:														
21.a	during all phases of construction (including at hold points) the ICE must be present at the CWNOEF Alpha and Bravo stages to oversee and certify the works that they meet design specifications and approve re-commencement of construction at defined hold points;							1				2	Part Compliance (moderate)	The evidence provided is outside the audit period. However, the February 2020 proposal would include the end of the audit period. The following was provided: - CW Alpha Cell 4B 2016 - CW Bravo Cell 5F 2017 - NOEF ICE Scope of Works 2020 Proposal.	NOEF ICE Scope of Works 2020 Proposal - GHD's Construction Phase Services will include provision of site staff able to interpret the technical provisions of the design and specifications contained within the Operator endorsed design and to progressively sign-off technical compliance of hold points and liaise with the off-site GHD engineering review team.  No evidence was provided for within the audit period to demonstrate ICE supervision.  OFI: Improve documentation of Independent Certifying Engineer (ICE) supervision during all phases of NOEF construction. (Note: Operator has advised the IM that a revised process related to documentation of ICE supervision is now in place. This will be considered during the next audit period.)
21.b	any material changes to the design during construction must be approved by the ICE;							1				N/A	Not Applicable	Site Instruction 251115 SI019 provided.	Example of Site Instruction for Change in CCL specification as approved by the ICE in 2015. Evidence provided is outside audit period. Operator advised there were no material changes to the design during the reporting period that required ICE approval during the reporting period.
21.c	any monitoring equipment/structure installed or to be installed as part of the construction must remain functional at the conclusion of the construction works. If such equipment becomes non-functional, then replacement or an ICE approved alternative must be implemented;							1	1			N/A	Not Applicable		Not applicable. The Operator advised that no monitoring equipment has been installed in this stage since this Condition was included.
21.d	If the ICE wishes to use the Operator's project manager/resident engineer as an onsite representative then the ICE must agree that this does not diminish responsibility or liability for the project;							1				N/A	Not Applicable		Not applicable. The Operator advised that the ICE does not use the Operator as an onsite representative.
21.e	the ICE must hold appropriate public and professional indemnity insurance to cover the scope of works associated with the CWNOEF design and construction; and							1				4	Full Compliance	Insurances were referenced as below: - GHD Pty Ltd_AUD 5m - GHD Pty Ltd (PPL)_AUD 5m.	Current Certificate of Placement – Public and Products Liability and Certificate of Placement – Professional Indemnity provided meet this condition.
21.f	at completion of the construction works the ICE must approve an "as-constructed" construction report. The report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied.							1	1			N/A	Not Applicable		Advised by the Operator that construction of the stage is not complete. On this basis, the condition is not active. (The following has been provided as evidence of progressive works: - 17.11_CW NOEF Construction_GHD Progress Report - October_November 2017_Rev0).

2019 Authorisation Condition No.		Condition/Requirement	ASPECT											Score	Compliance Level	Evidence	Comments	
			Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting							
		<b>CHARLIE STAGE</b>																
22		The Operator is authorised to complete works to prepare and construct CWNOEF Charlie stage in accordance with:																
22.a		the 2013-2015 MMP amendment entitled Mining Management Plan Amendment: North Overburden Emplacement Facility – Central West Charlie Stage Foundation and additional information provided to the Department, as defined in condition 1(j)(ii)(10). The Operator must ensure:							1				4	Full Compliance	<p><i>The following are evidence:</i>            -CWC ICE Review Letter 20Aug2019            -EMR 2019-2020.</p> <p>Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20Aug2019 states "The design is consistent with the latest approvals that include the OMP EIS NOEF concepts."</p> <p>EMR states that "Foundation and Basal CCL development continued in CW Charlie as per the McArthur River Mining, 2013-2015 Mining Management Plan Amendment dated September 2018 (September 2018 Amendment) during this time, with benign materials only in the 'wedge'." Following the approval of the January 2019 Amendment in August 2019, the CW Charlie Stage was developed as per the OMP EIS methodology[...]."</p>			
22.a.i		including allowances for survey accuracy/tolerances, the post construction CCL thickness is not less than 500mm;							1				4	Full Compliance	<p>CWC ICE Review Letter 20Aug2019</p> <p>Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20 August 2019 states "A 0.5m compacted clay liner (CCL) will continue to be placed over the foundation of this stage, with KCB modelling confirming this is adequate and material testing including recent field experience giving excellent results for CCL construction;" This condition is considered met.</p>			
22.a.ii		the acceptance criteria for all tests, including those outlined in the condition 1.l)(ii)(10), that are to be undertaken as part of the construction must be provided to the Department prior to commencement of the construction;							1				4	Full Compliance	<p>The acceptance criteria for all Compacted Clay Liner tests are included in the "Compacted Clay Liners (CCL's)" Section of the relevant stage Construction Specification/Design Report. The relevant stage reports for the reporting period have been provided:            Central West Operations Manual Rev2.1 (Section 9.5)            CW Charlie 2018 Design Report V4 (Section 6.3)            CW Charlie Complete Works Report V2 (Appendix 1 CW Charlie Complete Works Construction Specification - Section 6.3)</p> <p>Section 6.3 of Appendix 1 - CW Charlie Complete Works Construction Specification from the CW Charlie Complete Works Report V2 checked and compliant for CCL. Additional acceptance criteria for subgrade in Section 6.2, protective rockfill layers in Section 6.4, Structural Fill in Section 6.5, etc. This condition is considered met.</p>	These reports are provided to the Department, with the ICE endorsement letters, prior to the commencement of construction.		
22.a.iii		waste rock used for construction of the CWNOEF Charlie stage foundation, as outlined in the condition 1.l)(ii)(10), meets the geochemical criteria for classification as benign;							1				4	Full Compliance	<p>CWC ICE Review Letter 20Aug2019</p> <p>Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20 August 2019 states "The design report covers works associated with the placement of non-benign materials in the stage". This condition is considered met.</p>			
22.a.iv		results and reporting of testing undertaken to confirm alluvial materials placed at the CWNOEF would not generate AMD if exposed to water and were geotechnically suitable for the location they were placed; and							1	1			4	Full Compliance	<p>MRM_MEM_Alluvium_Waste_Characterisation_CHY_20190819</p> <p>- MRM_MEM_Alluvium_Waste_Characterisation_CHY_20190819 concluded that "the vast majority of alluvial material used in construction of the CWNOEF is environmentally benign, with 94% of samples returning as LS-NAF(HC). Although some samples did return with elevated metals, this was due to residual soils in extremely weathered material within the oxidised zone in proximity to bedrock, which would not be mined as alluvium."</p>			
22.a.v		the construction of the foundation will not impede surface water and underdrainage systems ability to convey all water to the sediment trap.		1					1				4	Full Compliance	<p>CWC ICE Review Letter 20Aug2019</p> <p>Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20Aug2019 states "Additional underdrains are proposed to promote toe seepage and further reduce basal seepage into the foundation." and "Reasonable contingency seepage interception plans have been identified with a commitment being made to further develop the groundwater monitoring strategy". The ICE has signed off on the report stating it includes conditions.</p>			

2019 Authorisation Condition No.		ASPECT										Score	Compliance Level	Evidence	Comments
Condition/Requirement		Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
22.b	concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.I.ii.12, and subject to Condition 18c, ensuring:							1				4	Full Compliance	CWC ICE Review Letter 20Aug2019 Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20Aug2019 states "The design is consistent with the latest approvals that include the OMP EIS NOEF concepts."	
22.b.i	Detailed designs follow the approved concept designs for CWNOEF and must include design objectives that satisfies both engineering and environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives. One of the construction hold points must include verification of PAF waste placement methodology;							1				4	Full Compliance	CWC ICE Review Letter 20Aug2019  Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20Aug2019 states: **"The design is consistent with the latest approvals that include the OMP EIS NOEF concepts." **"MRM shall ensure that all Hold Points identified in the specifications are signed off by GHD progressively as construction occurs." **"Importantly, GHD shall also be consulted in the preparation and endorsement of the following documentation as part of the ongoing management of the dump: -PAF cell and cover trial designs (including instrumentation provisions)"  This condition is considered met.	
22.b.ii	The detailed designs must be reviewed and endorsed by an ICE without limitation on responsibility and provided to the department prior to commencement of construction; and							1				4	Full Compliance	CWC ICE Review Letter 20Aug2019 Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20Aug2019 references the new conditions received on the 15Aug2019.	
22.b.iii	Should future review of the designs 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.							1				N/A	Not Applicable		Not applicable. No further reviews by independent experts have been undertaken.
23	During construction, and subject to Condition 18c,												-		
23.a	The Operator must ensure:												-		
23.a.i	PAF is emplaced in lift heights that minimises particle size segregation and creation of chimney structures, but must not exceed 7.5m;							1				4	Full Compliance	The following are evidence: -EMR 2019-2020 Section 2.5.2 -June 2020 NOEF Construction_GHD Progress Report -ITP_CWC1_C004_PAFHC Week 36.  June 2020 NOEF Construction_GHD Progress Report Section 3.2.1"The haulage and dumping of PAF HC material to form a 7.5 m lift at core lift 2 continued during the first two weeks of the month. Works included the 7.5 m lift, shaping the batters and spreading of 100 mm of alluvial materials to complete the advection barrier covering the lift."  ITP_CWC1_C004_PAFHC Week 36 (outside audit period) ITP includes sign off of 7.5m lift maximum.  EMR 2019-2020 states • "Wedge" geometry on top of the Base zone, constructed from non-benign material in up to 7.5 m lifts, with alluvium advection barriers between each lift, and sloped to assist surface water runoff to WPROD; • the Core zone constructed from non-benign waste in up to 7.5 m lifts, with alluvium advection barriers between each lift to limit oxidation of the PAF material;"	
23.a.ii	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; and	1						1				4	Full Compliance	The following are evidence: -EMR 2019-2020 Section 2.5.2 -ITP_CWC1_C007_PAFRE.  ITP_CWC1_C007_PAFRE includes "Placement of PAF (RE) Cell (up to 2m thick) Layer"  EMR states "the PAF(RE) Cell, constructed in up to 2 m lifts, with alluvium advection barriers between each lift to limit oxidation of the PAF(RE) waste."	



Authorisation Compliance Workbook - Operator		ASPECT										Score	Compliance Level	Evidence	Comments
2019 Authorisation Condition No.	Condition/Requirement	Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
23.a.iii	Advection barriers of appropriate thickness and moisture condition is emplaced at suitable intervals that disrupts formation of oxygen convection cycles;							1			4	Full Compliance	<p>The following are evidence:            -EMR 2019-2020 Section 2.5.2            -June 2020 NOEF Construction_GHD Progress Report            -ITP_CWC1_C004_PAFHC Week 36            -ITP_CWC1_C007_PAFRE.</p> <p>June 2020 NOEF Construction_GHD Progress Report Section 3.2.1 "The haulage and dumping of PAF HC material to form a 7.5 m lift at core lift 2 continued during the first two weeks of the month. Works included the 7.5 m lift, shaping the batters and spreading of 100 mm of alluvial materials to complete the advection barrier covering the lift."</p> <p>June 2020 NOEF Construction_GHD Progress Report Section 3.1 "The works include transportation and emplacement of specified materials in the correct locations, as per the design plans, and the construction of batters, wedges and advection barriers as required. The onsite laboratory also completed geochemical analysis of selected samples in order to compare to site specification requirements for material classification."</p> <p>- ITP_CWC1_C004_PAFHC Week 36 (outside audit period) ITP includes check of advection barrier.</p> <p>EMR states "the PAF(RE) Cell, constructed in up to 2 m lifts, with alluvium advection barriers between each lift to limit oxidation of the PAF(RE) waste."            EMR 2019-2020 Section 2.5</p>		
23.a.iv	The Central West Charlie Sump is appropriately lined to receive AMD; and							1			4	Full Compliance	<p>EMR states "high density polyethylene (HDPE) lining of Central West Charlie Sump occurred."            EMR 2019-2020 Section 2.5</p>		
23.b	The 100 year ARI flood level mitigation system along the northern footprint of the structure is in place prior to the oncoming wet season;		1					1			4	Full Compliance	<p>EMR section 2.5 states the following was undertaken: Flood protection: Construction of flood protection prior to the wet season at CW Charlie north face (100-year ARI); CW Charlie to EPROD (100-year ARI); EPROD to SEPROD (20-year ARI).</p>		
24	An Independent Certifying Engineer (ICE) must warrant and accept both the design and construction works, without limitation on responsibility:							1			4	Full Compliance	<p>The following are evidence:            -NOEF ICE Scope of Works 2020 Proposal            -Feb 2020 NOEF Construction_GHD Progress Report_REV1            -June 2020 NOEF Construction_GHD Progress Report.</p> <p>NOEF ICE Scope of Works 2020 Proposal - GHD's Construction Phase Services will include provision of site staff able to interpret the technical provisions of the design and specifications contained within the Operator endorsed design and to progressively sign-off technical compliance of hold points and liaise with the off-site GHD engineering review team.</p>		
24.a	during all phases of construction the ICE or approved delegate must be present at the CWNOEF Charlie site to oversee and certify and be accountable that all materials and material testing undertaken, QA/QC procedures and construction methods used satisfy the design intent and meet all the design specifications and approve re-commencement of construction at defined hold points. Where tests conducted demonstrate non-compliance to the acceptance criteria, evidence of corrective action taken (such as re-working of materials and re-testing) must be provided in the final report (as per clause (f));							1			4	Full Compliance	<p>The following are evidence:            -ITP CWC Cell 6-M            -CWC Piezo Data            -NOEF ICE Scope of Works 2020 Proposal            -Feb 2020 NOEF Construction_GHD Progress Report_REV1.</p> <p>Compliance Form and associated data for Basal CCL Cell reviewed showed evidence of compliance with this condition in addition to NOEF ICE Scope of Works 2020 Proposal.            Feb 2020 NOEF Construction_GHD Progress Report_REV1 Section 1.1 "GHD's role has been to specify the details of the QA/QC requirements including sampling density, sample locations within the dump profile and survey data required, as well as witnessing construction processes including surface preparation, construction and testing. GHD's role also included certifying the test results are acceptable as works are completed; and if not, what work or rework is required to rectify the faults and ensure construction is completed according to the specifications and design intent."</p>		
24.b	if the ICE wishes to use a delegate as an onsite representative then the ICE must agree that this does not diminish the ICE's responsibility or liability for the project and documented evidence be provided prior to commencement of works that lists the name of the delegate, their qualifications and experience and the level of duties assigned;							1			N/A	Not Applicable		Not applicable. Advised by the Operator that the ICE does not use the Operator as onsite representative.	
24.c	any material changes to the amendment must be approved by the ICE and the Department notified as soon as practicable;							1			N/A	Not Applicable		IM advised by the Operator that no material changes made to date.	

2019 Authorisation Condition No.		Condition/Requirement	ASPECT										Score	Compliance Level	Evidence	Comments	
			Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting						
24.d		the frequency of the permeability testing be no less than 1 test per 10,000 cubic metres;							1			4	Full Compliance	In addition to the files provided for 24.a, the following was also provided: - CW Charlie CCL Testing Summary.  Evidence incorporated in the included Compliance Form and data. Also included is an overall summary of the testing completed for CW Charlie Stage, showing the frequency of testing for the stage. 30 tests were required and 36 were undertaken meeting this condition.			
24.e		the Vibrating Wire Piezometers, and any other monitoring equipment/structure to be installed as part of the construction, should be installed in such a manner that it remains functional at the conclusion of the construction works and during future activities on the structure. If such equipment becomes non-functional, then replacement or an ICE approved alternative must be implemented that achieves the intent of the inoperable equipment, given the importance of such data for future approvals; and							1			4	Full Compliance	CWC Piezo Data	No indication within the data reviewed of faulty monitoring equipment.		
24.f		at completion of the construction works the ICE must approve an "as-constructed" construction report. The report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied.							1	1	N/A	Not Applicable		Construction is not complete so this condition is not active. Example Progress Reports were provided for Condition 23 and Condition 27.			
<b>CONSTRUCTION OF THE CENOEF</b>																	
25		The Operator must construct, operate and maintain the CENOEF in accordance with:															
25.a		Concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.i.ii.12, and subject to Condition 18d, ensuring:							1			4	Full Compliance	The following are evidence: -CE ICE Report Letter "Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 04Apr2019 -NOEF ICE Scope of Works 2020 Proposal.  Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report. "Designed in accordance with the Overburden Management Plan Environmental Impact Statement (OMP EIS), Variation of Authorisation 0059 (as amended) and approved Sustainable Development Mining Management Plan (2013 2015) (as amended) (MMP 2013 2015)." Construction evidence based on ICE Scope of Works 2020 Proposal.			
25.a.i		Detailed designs follow the approved concept designs CENOEF and must include design objectives that satisfies both engineering and environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives. One of the construction hold points must include verification of PAF waste placement methodology;							1			4	Full Compliance	The following are evidence: -CE ICE Report Letter "Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 04Apr2019 -CE Alpha Design Report version 2, 10Apr2019.  Construction Hold Points are nominated in Appendix 1 CE Alpha Complete Works Construction Specification in the CE Alpha Design Report. The CE Alpha Design Report doesn't specify a hold point for verification of PAF waste placement methodology. However, the ICE is responsible and accountable for Approval of Construction QA/QC Plan and Methodology Statements.	No inconsistencies with the concept designs noted by ICE.  Advised by Operator that no PAF(RE) Cells have been constructed in Central East Stage as of yet (supported by no PAF (RE) in the NOEF CE shown in Table 7 of the OPR 2018-2019 and EMR 2019-2020). The IM has not viewed the Inspection and Test Plans.  OBS: A further improvement would be to include documentation of a construction hold point specifically for verification of PAF waste placement methodology.		
25.a.ii		new areas of the NOEF foundation development (i.e. areas at base level) that do not currently contain PAF wastes must include a compacted clay layer (CCL) or, an engineered low permeability liner, of at least 0.5m thickness and maximum saturated hydraulic conductivity of 1 x 10 <sup>-9</sup> metres per second, above which future PAF wastes are to be stored;							1			4	Full Compliance	The following are evidence: CE ICE Report Letter dated 04Apr2019 CEA 3D ITP - Complete July 2020 (outside audit period).  Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report states "0.5m CCL placed over new foundation areas," CEA 3D ITP - Complete includes CCL hold points - min thickness of 500mm.			
25.a.iii		The detailed designs must be reviewed and endorsed by an ICE without limitation on responsibility and provided to the department prior to commencement of construction; and							1			4	Full Compliance	The following are evidence: CE ICE Report Letter "Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 04Apr2019.  The detailed designs were not submitted to the Department in the audit period as construction has not commenced.			



2019 Authorisation Condition No.		ASPECT										Score	Compliance Level	Evidence	Comments
Condition/Requirement		Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
25.a.iv	Should future review of the designs 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.							1				N/A	Not Applicable		Not applicable. IM advised by Operator that no further reviews by independent experts have been undertaken.
26	During construction, and subject to Condition 18d(i),												-		
26.a	The Operator must ensure:												-		
26.a.i	PAF(RE) is emplaced in lift heights that minimises particle size segregation and creation of chimney structures, but must not exceed 2m;	1						1				N/A	Not Applicable		Future item. No PAF(RE) Cells have been constructed in Central East Stage as of yet (supported by no PAF (RE) in the NOEF CE shown in Table 7 of the OPR 2018-2019 and EMR 2019-2020).
26.a.ii	Advection barriers of appropriate thickness, moisture conditioned (if required), is emplaced at suitable intervals that disrupts formation of oxygen convection cycles. If the PAF(RE) cells are not finalised, a 1m thick compacted advection barrier must be placed prior to every wet season;							1				N/A	Not Applicable		Future item. No PAF(RE) Cells have been constructed in Central East Stage as of yet (supported by no PAF (RE) in the NOEF CE shown in Table 7 of the OPR 2018-2019 and EMR 2019-2020).
26.a.iii	The 100 year ARI and 20 year ARI flood level mitigation systems along the eastern footprint of the structure is in place prior to the oncoming wet season.		1					1				N/A	Not Applicable		Future item. No PAF(RE) Cells have been constructed in Central East Stage as of yet (supported by no PAF (RE) in the NOEF CE shown in Table 7 of the OPR 2018-2019 and EMR 2019-2020).
27	An independent Certifying Engineer (ICE) must warrant and accept both the design and construction works, without limitation on responsibility:							1				4	Full Compliance	<p>The following are evidence:            -CE ICE Report Letter "Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 04Apr2019            -CE Alpha Design Report version 2, 10Apr2019            -NOEF ICE Scope of Works 2020 Proposal            -MRM Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020.</p> <p>Design evidence provided via letter Engineering Review of NOEF Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report.</p> <p>Construction evidence based on ICE Scope of Works 2020 Proposal and MRM Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020 Table 1-1: Summary of GHD site presence as Independent QA Engineers that states attendance from January 2020 through April 2020. Section 1.1 of MRM Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020 stated "GHD's role included witnessing construction processes including surface preparation, material selection, batter emplacement and advection barrier placement. Additionally GHD has reviewed and approved the Inspection and Test Plans (ITPs) that MRM provide weekly, which specify the works completed in each area each week. This includes reviewing witness and hold points to ensure compliance with the relevant design reports (refer Section 1.2). GHD's role also included certifying that the ITPs test results are acceptable as works are completed, and if not, what works and re-works are required to rectify the faults and ensure the construction is according to the specifications and design intent."</p>	OBS: Construction phase evidence was provided for the end of the audit period.  Refer to OFI in condition 21.a.
27.a	During all phases of construction the ICE or approved delegate must be present at the CENOE site to oversee and certify and be accountable that all materials and material testing undertaken, QA/QC procedures and construction methods used satisfy the design intent and meet all the design specifications and approve re-commencement of construction at defined hold points. Where tests conducted demonstrate non-compliance to the acceptance criteria, evidence of corrective action taken (such as re-working of materials and re-testing) must be provided in the final report (as per clause 27(g));							1				4	Full Compliance	<p>CEA 3D ITP signed off by the ICE- Completed July 2020 (outside audit period).</p> <p>MRM Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020 is out side of the audit period however appendix B includes 14 Emerson tests from April 2020 that are within the audit period) and Table 1-1: Summary of GHD site presence as Independent QA Engineers that states that attendance was from January 2020 through April 2020.</p> <p>NOEF ICE Scope of Works 2020 Proposal - "GHD's Construction Phase Services will include provision of site staff able to interpret the technical provisions of the design and specifications contained within the Operator endorsed design and to progressively sign-off technical compliance of hold points and liaise with the off-site GHD engineering review team."</p>	Refer to OFI in condition 21.a.
27.b	If the ICE wishes to use a delegate as an onsite representative then the ICE must agree that this does not diminish the ICE's responsibility or liability for the project and documented evidence be provided prior to commencement of works that lists the name of the delegate, their qualifications and experience and the level of duties assigned;							1				N/A	Not Applicable		Advised by the Operator that the ICE does not use the Operator as onsite representative therefore this condition is not applicable.

2019 Authorisation Condition No.		ASPECT										Score	Compliance Level	Evidence	Comments
Condition/Requirement		Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
27.c	any material changes to the design must be approved by the ICE in writing;							1			4	Full Compliance	NOEF Central East Foundation Investigation - ICE Review Letter from GHD to Operator "Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 23Apr2020  Letter from GHD to Operator "Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 23Apr2020 states "The report findings are endorsed and GHD considers that the investigation provides sufficient evidence that the existing stockpile foundation meets the design intent and satisfies (and likely exceeds) the minimum 0.5 m thick, minimum 1x10-9 m/s CCL specification."	A material change was proposed to use in-situ clay to achieve the same design intent of the Basal CCL. ICE endorsement of proposal is included. This has not been constructed yet as waiting for confirmation in 2020 MMP. In addition, examples of minor changes to specification are outlined in Progress Reports.	
27.d	including allowances for survey accuracy/tolerances, the post construction CCL thickness is not less than 500mm;							1			4	Full Compliance	CE Alpha Design Report version 2, 10Apr2019 CEA 3D ITP - Complete July 2020 (outside audit period) MRM Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020.  In the CE Alpha Design Report Appendix 1 CE Alpha Complete Works Construction Specification Section 6.3.3 "The tolerance on finished surface levels for the placed clay liner shall ensure that a shedding surface is maintained and minimum clay liner thickness is achieved.  Quality assurance shall be undertaken by the Survey Department to ensure that a minimum 0.5 m thickness is achieved throughout for the clay liner for the Basal CCL."  MRM Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020 includes in section 2.3.1.1 "The CCL was generally constructed in 2 x 300 mm compacted layers (the lower layer incorporating some sub-grade material into the CCL) aiming at an overall target thickness of 600 mm. The Specification tolerance allows for the CCL thickness to be a minimum 500 mm, -0 / + 200 mm, i.e. 500 - 700 mm."	ITP includes ICE signoff for 500mm thickness for CCL (outside of audit period).	
27.e	the frequency of the CCL permeability testing be no less than 1 test per 10,000 cubic metres;							1			4	Full Compliance	CE Alpha Design Report version 2, 10Apr2019 CE CCL Testing Summary 9Oct20 (outside of audit period) CEA 3D ITP - Complete July 2020 (outside audit period)  In the CE Alpha Design Report Appendix 1 CE Alpha Complete Works Construction Specification Section 6.3.2. Geotechnical Testing Frequency requires 1 test per 10,000m <sup>3</sup> for permeability of the CCL.	10 tests were required and 12 were undertaken (outside of the audit period) CEA 3D ITP - Complete July 2020 (outside audit period) includes 1 test per 10,000m <sup>3</sup> .	
27.f	any monitoring equipment/structure installed or to be installed as part of the construction must remain functional at the conclusion of the construction works and during future activities on the structure. If such equipment becomes non-functional, then replacement or an ICE approved alternative must be implemented that achieves the intent of the inoperable equipment; and							1	1		N/A	Not Applicable		No monitoring equipment installed in Central East stage during the audit period.	
27.g	at completion of the construction works the ICE must approve an "as-constructed" construction report. The report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied.							1	1		N/A	Not Applicable		Construction is not complete so this condition is not active. The following has been provided as an example: 01Jul2020 NOEF Construction_GHD Progress Report	
<b>INVESTIGATION OF THE NOEF</b>															
28	Engagement of Consultant and scope of works:											-			Pre-reporting period.
28.a	The Operator must engage an Independent third-party (Consultant) to investigate whether the placement and containment of mining waste at the NOEF is causing, or may cause, environmental harm to the Receiving Environment (Investigation).							1	1		N/A	Not Applicable		Pre-reporting period.	
28.b	The Operator must ensure that the Consultant engaged by it in accordance with condition a:											-			

2019 Authorisation Condition No.		Condition/Requirement	ASPECT										Score	Compliance Level	Evidence	Comments
			Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
28.b.i		has expertise in each of the following areas: groundwater hydrogeology; ecotoxicology; water treatment; and							1		1	N/A	Not Applicable		Pre-reporting period.	
28.b.ii		carries out the Investigation in accordance with this document.							1		1	N/A	Not Applicable		Pre-reporting period.	
28.c		The Operator must provide a detailed scope of works for the Investigation to the Executive Director of the Mines Division of the Department of Primary Industry and Resources (ED) for approval by not later than 12:00pm on 22 April 2016.							1		1	N/A	Not Applicable		Pre-reporting period.	
28.d		Upon receipt of the scope of works referred to in condition c, the ED may in his or her discretion: i approve the scope of works; ii refuse to approve the scope of works; or iii request that the Operator submit further information in relation to the scope of works to enable him or her to decide whether to approve or refuse to approve the scope of works.										-				
28.e		If the ED requires further information in accordance with condition d.iii:										-				
28.e.i		the Operator must provide the further information within the time frame requested by the ED; and							1		1	N/A	Not Applicable		Pre-reporting period.	
28.e.ii		if the Operator fails to submit the further information the ED may refuse to approve the scope of works.										-			Pre-reporting period.	
29		General conduct of the Investigation: The Investigation must										-			Pre-reporting period.	
29.a		identify the location and boundaries of any groundwater aquifer that may potentially be impacted by the NOEF, including the placement or containment of mining waste at the NOEF;				1					1	N/A	Not Applicable		Pre-reporting period.	
29.b		for each aquifer identified in accordance with this condition, identify the nature and type of the aquifer, including:										-				
29.b.i		the direction of flow;				1					1	N/A	Not Applicable		Pre-reporting period.	
29.b.ii		groundwater contours;				1					1	N/A	Not Applicable		Pre-reporting period.	
29.b.iii		groundwater depth;				1					1	N/A	Not Applicable		Pre-reporting period.	
29.b.iv		aquifer connectivity;				1					1	N/A	Not Applicable		Pre-reporting period.	
29.b.v		potential pathways along faults; and				1					1	N/A	Not Applicable		Pre-reporting period.	
29.b.vi		recharge rates.				1					1	N/A	Not Applicable		Pre-reporting period.	
29.c		identify the source, cause and extent, or any potential source, cause and extent, of any environmental harm from the placement or containment of mining waste at the NOEF to each groundwater aquifer identified in accordance with condition b;				1					1	N/A	Not Applicable		Pre-reporting period.	
29.d		identify and define the Environmental Values of the Receiving Environment in accordance with the methodology in the document entitled Australian and New Zealand Guidelines for Fresh and Marine Water Quality <sup>[1]</sup> ; and				1					1	N/A	Not Applicable		Pre-reporting period.	
29.e		identify the source, cause and extent, or any potential source, cause and extent, of any environmental harm from the placement or containment of mining waste at the NOEF to the Receiving Environment.				1					1	N/A	Not Applicable		Pre-reporting period.	
30		Review of monitoring programmes:										-				
30.a		As part of the Investigation, the Consultant must review all monitoring programmes required to be carried out by the Operator under the MMP:									1	N/A	Not Applicable		Pre-reporting period.	
30.b		The Consultant's review of the Operator's monitoring programmes referred to in condition a must:										-				
30.b.i		assess the adequacy of the current groundwater monitoring programme to effectively identify any release or potential release of Contaminants from the placement and containment of mining waste at the NOEF;				1					1	N/A	Not Applicable		Pre-reporting period.	
30.b.ii		identify whether any additional groundwater monitoring bores are required to improve the effectiveness of the existing groundwater monitoring programme and, if so, identify suitable locations for those bores;				1					1	N/A	Not Applicable		Pre-reporting period.	
30.b.iii		identify whether any additional surface water monitoring sites are required and, if so, identify appropriate locations for those sites; and		1							1	N/A	Not Applicable		Pre-reporting period.	

Authorisation Compliance Workbook - Operator

2019 Authorisation Condition No.		Condition/Requirement	ASPECT											Score	Compliance Level	Evidence	Comments
			Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting						
30.b.iv		identify whether any additional water quality parameters are required to be measured and, if so, provide recommendations for the inclusion of those parameters into the current surface water monitoring programme.		1								1	N/A	Not Applicable			Pre-reporting period.
31		Assessment of contamination of the environment:												-			
31.a		As part of the Investigation, the Consultant must review all monitoring programmes required to be carried out by the Operator under the MMP;										1	N/A	Not Applicable			Pre-reporting period.
31.b		Without limiting the obligation in condition 31.a, the Consultant must provide:												-			
31.b.i		an assessment of all practical options to address any environmental harm referred to in condition 31.a;										1	N/A	Not Applicable			Pre-reporting period.
31.b.ii		a detailed description of any remedial works required to address any environmental harm referred to in condition 31.a;										1	N/A	Not Applicable			Pre-reporting period.
31.b.iii		an estimate of the likely costs of implementing the remedial works referred to in condition 31.b.ii; and										1	N/A	Not Applicable			Pre-reporting period.
31.b.iv		an appropriate time frame for the implementation of the remedial works referred to in condition 31.b.ii.										1	N/A	Not Applicable			Pre-reporting period.
32		Interim revised monitoring programme:												-			
32.a		the Operator must provide to the Minister an interim revised monitoring programme that sets out any interim improvements that can be made to the current monitoring programmes that are required to be carried out by the Operator under the MMP; and										1	N/A	Not Applicable			Pre-reporting period.
32.b		the Operator must provide the interim revised monitoring programme referred to in condition 22.a to the Minister by no later than 12:00 pm on 22 June 2016.										1	N/A	Not Applicable			Pre-reporting period.
33		Interim remediation options report:												-			
33.a		the Operator must provide to the Minister a report that sets out any interim remedial options that should be implemented pending the finalisation of any long-term remedial works referred to in condition 33.a										1	N/A	Not Applicable			Pre-reporting period.
33.b		the Operator must provide the interim remediation options report referred to in condition 33.a to the Minister by no later than 12:00 pm										1	N/A	Not Applicable			Pre-reporting period.
34		Final investigation report:												-			
34.a		as part of the Investigation, the Consultant must prepare an investigation report (Final Report):										1	N/A	Not Applicable			Pre-reporting period.
34.a.i		addressing each of the matters set out in condition 31;										1	N/A	Not Applicable			Pre-reporting period.
34.a.ii		providing remediation options;										1	N/A	Not Applicable			Pre-reporting period.
34.a.iii		providing a revised monitoring programme; and										1	N/A	Not Applicable			Pre-reporting period.
34.a.iv		any other relevant findings of the Investigation.										1	N/A	Not Applicable			Pre-reporting period.
34.b		the Operator must submit a copy of the Final Report to the Minister by no later than 12:00 pm on 22 June 2017.										1	N/A	Not Applicable			Pre-reporting period.
34.c		upon receipt of the Final Report, the Minister may in his or her discretion: i approve the Report; ii refuse to approve the Report; or iii request that the Operator submit further information in relation to the Report, or the matters the subject of the Report, to enable the Minister to decide whether to approve or refuse to approve the Report.												-			
34.d		If the Minister requires further information in accordance with condition 34.c.iii:												-			
34.d.i		the Operator must provide the further information within the time frame requested by the Minister; and										1	N/A	Not Applicable			Pre-reporting period.
34.d.ii		if the Operator fails to submit the further information in accordance with condition 34.d.i, the Minister may refuse to approve the Report.												-			
<b>WATER MANAGEMENT AND STORAGE</b>																	
35		When appropriate, the Operator must prepare, review and include the following for each MMP and where appropriate each MMP amendment, a Water Management Plan which includes:												-			

2019 Authorisation Condition No.		ASPECT										Score	Compliance Level	Evidence	Comments
Condition/Requirement		Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
35.a	modelling of surface water at and around the Mine;		1							1	4	Full Compliance	<p>Reviewed the Water Management Plan 31Jan2020 (Version 1.0) Section 3.9.1 and Appendix A (2019/20 Site Water Balance for the McArthur River Mine (0790-67-C1) Rev 1 dated 09Dec2019).</p> <p>2019/20 Site Water Balance for the McArthur River Mine (0790-67-C1) states in Section 6.2.4 Catchment runoff "The AWBM model was used to represent the runoff characteristics of different land use types within local mine site catchments."</p> <p>Section 6.1.2 of 2019/20 Site Water Balance for the McArthur River Mine (0790-67-C1) states "An AWBM model (Boughton, 2003) for the McArthur River has been calibrated to recorded flows at the Pump stream gauging station. The calibrated AWBM model was used to extend the McArthur River flow record at the M.I.M. Pump station and use within the water balance model for the assessment of off-site water release opportunities from the Mine site."</p>		
35.b	a whole of Mine water balance which takes account of the modelling of surface water;		1							1	4	Full Compliance	<p>Reviewed the Water Management Plan 31Jan2020 (Version 1.0) Section 3.9.1 and Appendix A (2019/20 Site Water Balance for the McArthur River Mine (0790-67-C1) Rev 1 dated 09Dec2019).</p> <p>Annual review of model performance based upon previous year. Version submitted with the 2020 Mining Management Plan Version 1.0. Water Balance and Calibration including data capture, modelling upcoming year, review of model based upon actual, plan for water/wet season management plan. This approach has occurred for more than 5 years and is well established.</p> <p>2019/20 Site Water Balance for the McArthur River Mine (0790-67-C1) Section 5.5.1 "Daily water level and pumped water transfer data are available for OP PP and OP VDD with some gaps. Daily or weekly water level and pumped water transfer data are available for the NOEF SPROD, NOEF SEPROD, NOEF WPROD for varying periods with some gaps. The available data is considered reasonably accurate due to significant improvements in monitoring data in the 2018/19 reporting period, which has led to notable improvements in the individual dam water balance assessments."</p> <p>6.1.2 states that surface runoff is included in the water balance.</p>	Success: Improvement in monitoring data in 2018/19 has led to improvements in water balance assessments and the Mine's water management. OFI: Incorporate the existing additional water transfer data and water balance data from water storages not already included, or submit a request to the Department to have the requirement reviewed, if appropriate.	
35.c	calibration of the modelling of surface water to confirm its accuracy;		1							1	4	Full Compliance	<p>Reviewed the Water Management Plan 31Jan2020 (Version 1.0) Appendix A (2019/20 Site Water Balance for the McArthur River Mine (0790-67-C1) Rev 1 dated 09Dec2019).</p> <p>Annual review of model performance based upon previous year. Version submitted with the 2020 Mining Management Plan Version 1.0. Water Balance and Calibration including data capture, modelling upcoming year, review of model based upon actual, plan for water/wet season management plan. This approach has occurred for more than 5 years and is well established.</p> <p>2019/20 Site Water Balance for the McArthur River Mine (0790-67-C1) Section 6.1.2 states that the AWBM (surface water) model is calibrated.</p> <p>In addition, the executive summary states "The Mine water balance model was validated against the recorded historical behaviour of the water management system at the Mine over the last nine years (July 2010 to June 2019)." Section 6 describes the Mine water balance model development and the validation of the model against available monitoring data."</p> <p>Section 6.2.4 "The AWBM model parameters were determined based on the Goldsim model calibration results and previous experience with similar catchments."</p>		
35.d	a written plan detailing how water at the Mine will be managed for the forthcoming wet season;		1							1	4	Full Compliance	<p>Reviewed the Water Management Plan 31Jan2020 (Version 1.0) Section 3.9.2 and Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used.</p>	The Operator updates the TARPs trigger levels for each year (including TARPs for maximum operating levels (MOLs) and release conditions). Each of the storages NOEF SEPROD, NOEF SPROD, NOEF WPROD, NOEF EPROD, OP PP, OP LA, OP P2, OP NC1A, OP VDD, Mill CRP, Mill APP, TSF Cell 1 Decant Pond, TSF Cell 2 Decant Pond and TSF WMD, have a TARP and are assigned an optimum operating level (OOL) and a MOL which are used to drive management decisions. These TARPs are only applicable to one specific wet season with new ones prepared annually.	
35.e	a plan of actions which will be undertaken to reduce the risk of any releases from AMD storage structures;		1							1	4	Full Compliance	<p>Reviewed the Water Management Plan 31Jan2020 (Version 1.0) Section 3.9.2 and Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used.</p>	The Operator updates the TARPs trigger levels for each year (including TARPs for maximum operating levels and release conditions). Each of the storages NOEF SEPROD, NOEF SPROD, NOEF WPROD, NOEF EPROD, OP PP, OP LA, OP P2, OP NC1A, OP VDD, Mill CRP, Mill APP, TSF Cell 1 Decant Pond, TSF Cell 2 Decant Pond and TSF WMD, have a TARP and are assigned an OOL and a MOL which are used to drive management decisions. These are not specific to only AMD storage structures.	

2019 Authorisation Condition No.		ASPECT										Score	Compliance Level	Evidence	Comments
Condition/Requirement		Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
35.f	a plan of actions, including engineers' reporting schedules, which will be undertaken to ensure the structural integrity of all AMD storage structures; and		1							1	3	Part Compliance (High)	<p>IM was advised by the Operator that storage structures have quarterly inspections. IM did not sight schedule.</p> <p>MRM 2018 Mine Dam Inspection Reports - Intermediate Surveillance Report (April 2019)</p> <p>MRM Bing Bong Dam Safety - 2018 Intermediate Surveillance Report (Rev 0 October 2019)</p> <p>Geotechnical Inspection Procedure Version 4 provides inspection frequency</p> <p>Major dams (only) have quarterly audits against an inspection protocol and produce audit reports. Advised that other dams are picked up in other inspections. There are different owners for mining dams and metallurgy dams with oversight by the Manger Projects &amp; Water.</p> <p>There was insufficient evidence available at the time of the audit to demonstrate a plan of actions exists to ensure structural integrity of all AMD storage structures.</p>	<p>The Water Management Plan reviewed (Water Management Plan 31Jan2020 (Version 1.0)) did not fulfil this requirement.</p> <p>The Fatal Hazard Protocol captures TSF and major dams requiring annual safety checks by engineers. The online Risk manager allocates the inspection date. Any actions that are identified during the inspection will go through layers of management for checking. Any actions that come out of the audit (critical control audit) will be registered on the risk manager.</p> <p>Note the Intermediate Surveillance Reports are completed annually.</p> <p>MRM 2018 Mine Dam Inspection Reports - Intermediate Surveillance Report (April 2019) includes:</p> <p>MRM Bing Bong Dam Safety - 2018 Intermediate Surveillance Report (Rev 0 October 2019) includes: Bing Bong Dredge Spoils (BBDS) and Bing Bong Surface Runoff Ponds (BBSRP).</p> <p>Higher-frequency inspections have been discussed and provided as part of Condition 37 below.</p> <p>OFI: Create a single master list and inspection schedule of all AMD storages (including at BBLF) to ensure all required inspections are completed and reported and include the master list in the Water Management Plan.</p>	
35.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.		1		1					1	2	Part Compliance (moderate)	<p>No specific AMD Storage Structure Seepage Plan exists.</p> <p>Refer evidence in condition 37 supporting seepage management.</p> <p>There is no specific plan, however monitoring of groundwater quality (e.g. EMR 2020 Appendix U) and estimations of PROD dam seepage rates (e.g. Water Balance 2019 Section 6.3.4) is undertaken, and management is implemented as required. Evidence of the Operator improving seepage management is the HDPE lining of SPROD (refer to EMR 2020 Plate 5) as a result of impacts to groundwater quality detected in downstream bore GW095S in 2017.</p> <p>There was insufficient evidence available at time of the audit.</p>	<p>OFI: Prepare an AMD storage structures seepage plan of actions and include this in the Water Management Plan.</p> <p>The Water Management Plan reviewed (Water Management Plan 31Jan2020 (Version 1.0)) did not fulfil this requirement. Documents in condition 37 provide some evidence to support this condition. However, a systematic approach including all AMD storage structures is required and needs to be included in the water management plan.</p>	
36	Dewatering activities as part of pit development and borefield development for beneficial use must be metered to allow determination of parameters for assessment of extraction volumes and aquifer sustainability		1		1					1	3	Part Compliance (High)	<p>No evidence of how dewatering metering data is used in determination of parameters for assessment of extraction volumes and aquifer sustainability.</p> <p>The Operator provided the IM a screenshot of email correspondence demonstrating engagement with the Department.</p> <p>Daily emails on the dewatering volumes.</p> <p>2019/20 Site Water Balance for the McArthur River Mine Section 5.3 for MUDS.</p> <p>WMS Report - 01Nov2020</p> <p>Abstraction rates MASTER</p> <p>Table 9 in 2019/20 Site Water Balance for the McArthur River Mine shows that 3 out of 13 operational bores did not have flow monitoring for that period (WIKI Borefield).</p> <p>There was insufficient evidence available at time of the audit.</p>	<p>The open cut mine is dewatered continuously and borefield extraction is metered.</p> <p>The MUDS (Mine Underground Dewatering System) is described in Section 5.3 of the 2019 water balance. Upcoming DENR water resource regulation requirement to have all bores licenced. The Operator advised that they are looking to characterise the aquifers and address aquifer sustainability. The Operator advised that they are in the process of commissioning studies on aquifers prior to lodging applications for licences. No due date at present.</p> <p>Dewatering activities as part of pit development are included in the daily WMS reports.</p> <p>In terms of groundwater abstraction borefields (e.g. MIMEX, Emu, Donkey, Wiki), this data is not reported in the daily WMS report, and is accessed when required (managed by different areas of the business).</p> <p>OFI: Review the dewatering activities and ensure that all bores are metered.</p>	



Authorisation Compliance Workbook - Operator		ASPECT										Score	Compliance Level	Evidence	Comments
2019 Authorisation Condition No.	Condition/Requirement	Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
37	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:												<p>The following were evidence:</p> <ul style="list-style-type: none"> <li>-Water Management Plan 31Jan2020 (Version 1.0) Section 3.4.5.</li> <li>-Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used.</li> <li>-MRM 2018 Mine Dam Inspection Reports - Intermediate Surveillance Report (April 2019)</li> <li>-MRM Bing Bong Dam Safety - 2018 Intermediate Surveillance Report (Rev 0 October 2019)</li> <li>-Geotechnical Inspection Procedure Version 4</li> <li>-CW Bravo Sump inspection 20200426</li> <li>-EPROD Inspection_20190912</li> <li>-Lake Archer Inspection_20190912</li> <li>-MIA Sump Inspection_20200315</li> <li>-Mill CRP Sump Inspection_20200407</li> <li>-Petes Pond Inspection_20190914</li> <li>-Pond 2 Inspection_20190920</li> <li>-SEPROD Inspection_20190915</li> <li>-WPROD Inspection 20200129</li> <li>-BB Water Management - October 2019</li> <li>-3219255-REP-0_2019 Intermediate Dam Safety Surveillance Report_PROD</li> <li>-180321_37764_EPROD Detailed Design Report_Rev2.</li> </ul> <p>EPROD Detailed Design Report_Rev2 demonstrated compliance for design in the audit period.</p> <p>Compliance is scored in sub-conditions 37.a.i to 37.a.xxii based on the listed water storage structure.</p>	<p>The management requirements of the condition related to the dams are addressed in the Water Management Plan via TARPs with the exception of the Bing Bong Surface Runoff Ponds. There is limited evidence for the sumps. These sump storages and Bing Bong Runoff Ponds do not have a TARP: CWAS, CWCS, OSD, CE1S, EDS, WDS, MIAS, WAS, BBSRP1, BBSRP2 and BBSRP3 (a TARP is not a regulatory requirement). Any AMD storage is conditioned by DPIR and constructed in accordance with those conditions. Any new storage design and construction is verified by the ICE (Independent Certifying Engineer). The storages are monitored using TARPs to manage water levels and avoid overtopping, regularly inspected for structural integrity and critical control protocols are implemented.</p> <p>The Operator updates the TARPs trigger levels for each year (including TARPs for maximum operating levels and release conditions). Storages NOEF SEPROD, NOEF SPROD, NOEF WPROD, NOEF EPROD, OP PP, OP LA, OP P2, OP NC1A (not AMD), OP VDD, Mill CRP, Mill APP, TSF Cell 1 Decant Pond (not listed in this condition), TSF Cell 2 Decant Pond (not listed in this condition) and TSF WMD (not AMD), have a TARP and are assigned an OOL and a MOL which are used to drive management decisions. These TARPs are only applicable to one specific wet season.</p>	
37.a	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:											3	Part Compliance (High)	<p>Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used.</p> <p>There was insufficient evidence available at time of the audit.</p>	<p>The following water storage structures are listed with class 5 or 6 water in the WMP table 8 but are not listed in this condition: Mill ORS, Underground void and open pit, SOEF Sump, TSF Cell 1, TSF Cell 2, TSF C1SA and TSF C1SB. The IM understands that the Underground void and open pit is not a storage, TSF C1SA and TSF C1SB no longer exist and the Authorisation 13Nov2020 has added SOEF Sump. The IM considers it is acceptable that the TSF is considered conditioned elsewhere in the Authorisation.</p> <p>OFI: Create a single master list and inspection schedule of all AMD storages (including at BBLF) to ensure all required inspections are completed and reported and include the master list in the Water Management Plan.</p> <p>OFI: Obtain and document agreement with Department for storage of AMD in any sumps or storages not listed in condition 37a, and ensure all sumps or storages that store AMD are managed to minimise contaminants entering the receiving environment.</p>
37.a.i	Southern Perimeter Runoff Dam (SPROD);		1									4	Full Compliance	Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used.	Class 5/6 water in WMP 2020. TARP included in WMP.
37.a.ii	Southern Perimeter Sediment Runoff Dam (SPD);		1									N/A	Not Applicable		Combined into SPROD in 2018 based on comment in WMP 2020 Table 8.
37.a.iii	South East Perimeter Runoff Dam (SEPROD);		1									4	Full Compliance	Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used. SEPROD Inspection_20190915	Class 4 water in WMP 2020. TARP included in WMP.
37.a.iv	Western Perimeter Runoff Dam (WPROD);		1									4	Full Compliance	Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used. WPROD Inspection 20200129	Class 5/6 water in WMP 2020. TARP included in WMP.
37.a.v	Eastern Perimeter Runoff Dam (EPROD)-contingent on also meeting conditions 43, 44 and 45;		1									N/A	Not Applicable	EPROD Inspection_20190912	Not applicable as not yet commissioned. Class 5/6 water in WMP 2020. TARP included in WMP.
37.a.vi	Central West (CW) A Sump (CWAS);		1									3	Part Compliance (High)	<p>There was insufficient documentation or records available at time of the audit to demonstrate that CWAS was designed, constructed and managed in accordance with the condition.</p> <p>CW Bravo Sump inspection 20200426</p>	<p>Class 5/6 water in WMP 2020. - CWAS renamed to CWBS. No TARP available for sumps.</p> <p>Insufficient evidence is likely to be a documentation issue rather than an implementation issue.</p> <p>Condition 37a includes an OFI that relates to this sub-condition.</p>
37.a.vii	Central West C Sump (CWCS)		1									N/A	Not Applicable	Not as much evidence was available for this storage compared to other AMD storages listed.	<p>Listed as Central West C Sediment trap CWCS to be converted to a sump - Class 2 water in WMP2020 (not AMD). No TARP available for sumps.</p> <p>Considered N/A as AMD not listed for this sump.</p>

2019 Authorisation Condition No.		ASPECT										Score	Compliance Level	Evidence	Comments
Condition/Requirement		Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
37.a.viii	Anti-Pollution Pond (APP);		1								4	Full Compliance	Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used.	Class 5/6 water in WMP 2020. TARP included in WMP.	
37.a.ix	Concentrator Runoff Pond (CRP);		1								4	Full Compliance	Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used. Mill CRP Sump_Inspection_20200407	Class 6 water in WMP 2020. TARP included in WMP.	
37.a.x	Van Duncan's Dam (VDD);		1								4	Full Compliance	Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used.	Class 5/6 water in WMP 2020. TARP included in WMP. - VDD also named Duncan's Dam.	
37.a.xi	Pete's Pond (PP);		1								4	Full Compliance	Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used. Petes Pond Inspection_20190914	Class 5/6 water in WMP 2020. TARP included in WMP.	
37.a.xii	Lake Archer (LA);		1								4	Full Compliance	Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used. Lake Archer Inspection_20190912	Class 5/6 water in WMP 2020. TARP included in WMP.	
37.a.xiii	Old Stores Dam (OSD);		1								3	Part Compliance (High)	There was insufficient documentation or records available at time of the audit to demonstrate that OSD was designed, constructed and managed in accordance with the condition.	Class 5 water in WMP 2020.No formal geotechnical inspection exists for OSD, which is pumped to the larger Mill storages (APP, CRP, overflows to LA). No TARP available for sumps. Insufficient evidence is likely to be a documentation issue rather than an implementation issue. Condition 37a includes an OFI that relates to this sub-condition.	
37.a.xiv	Pond 2 (P2);		1								4	Full Compliance	Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used. Pond 2 Inspection_20190920	Class 4 water in WMP 2020. TARP included in WMP.	
37.a.xv	Central East 1 Sump (CE1S);		1								N/A	Not Applicable		Class 5 water in WMP 2020. - CE1S also named GE Sump. The Environmental Monitoring Schedule names this dam Eastern Sediment Trap (EST) and the recently submitted MMP names this Central East Bravo Sump (CEBS). Advised by Operator currently not used as an AMD storage. No TARP available for sumps. N/A because advised by the Operator that it was not used as an AMD storage in the audit period.	
37.a.xvi	East Drain Sump (EDS);		1								3	Part Compliance (High)	There was insufficient documentation or records available at time of the audit to demonstrate that EDS was designed, constructed and managed in accordance with the condition.	Class 5/6 water in WMP 2020. Advised by Operator that this storage is not included in the Geotechnical Inspection Procedure given its smaller capacity and infrequent storage of water (as captured water is pumped to the PROD dams for treatment). Inspections are undertaken by the Dewatering Team when completing pump maintenance, a formal procedure for geotechnical inspection however does not exist. No TARP available for sumps. Insufficient evidence is likely to be a documentation issue rather than an implementation issue. Condition 37a includes an OFI that relates to this sub-condition.	
37.a.xvii	West D Sump (WDS);		1								3	Part Compliance (High)	There was insufficient documentation or records available at time of the audit to demonstrate that WDS was designed, constructed and managed in accordance with the condition.	Class 5/6 water in WMP 2020. Advised by Operator that this storage is not included in the Geotechnical Inspection Procedure given its smaller capacity and infrequent storage of water (as captured water is pumped to the PROD dams for treatment). Inspections are undertaken by the Dewatering Team when completing pump maintenance, a formal procedure for geotechnical inspection however does not exist. No TARP available for sumps. Insufficient evidence is likely to be a documentation issue rather than an implementation issue. Condition 37a includes an OFI that relates to this sub-condition.	
37.a.xviii	Mine Infrastructure Area Sump (MIAS);		1								3	Part Compliance (High)	MIA Sump Inspection_20200315 There was insufficient documentation or records available at time of the audit to demonstrate that MIAS was designed, constructed and managed in accordance with the condition.	Class 5 water in WMP 2020. No TARP available for sumps. Condition 37a includes an OFI that relates to this sub-condition.	



Authorisation Compliance Workbook - Operator		ASPECT										Score	Compliance Level	Evidence	Comments	
2019 Authorisation Condition No.	Condition/Requirement	Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting						
37.a.xix	West A Sump (WAS);		1									3	Part Compliance (High)	There was insufficient documentation or records available at time of the audit to demonstrate that WAS was designed, constructed and managed in accordance with the condition.	Class 5/6 water in WMP 2020. Advised by Operator that this storage is not included in the Geotechnical Inspection Procedure given its smaller capacity and infrequent storage of water (as captured water is pumped to the PROD dams for treatment). Inspections are undertaken by the Dewatering Team when completing pump maintenance, a formal procedure for geotechnical inspection however does not exist. No TARP available for sumps.  Condition 37a includes an OFI that relates to this sub-condition.	
37.a.xx	Bing Bong Site Runoff Pond 1 (BBSRP1);		1	1								4	Full Compliance	Bong Dam Safety - 2018 Intermediate Surveillance Report (Rev 0 October 2019) Work Area Environmental Inspection - Bing Bong Water Management Infrastructure - October 2019	BBSRP1 was not included in WMP 2020. MRM Bing Bong Dam Safety - 2018 Intermediate Surveillance Report (Rev 0 October 2019) includes: Bing Bong Dredge Spoils (BBDs) and Bing Bong Surface Runoff Ponds (BBSRP). No TARP in the WMP. The BBSRPs are subject to the routine internal inspections (BB Water Management - October 2019) and annual intermediate dam safety inspections by GHD Pty Ltd (2018 Intermediate Surveillance Report GHD- BB.  Condition 37a includes an OFI that relates to this sub-condition.	
37.a.xxi	Bing Bong Site Runoff Pond 2 (BBSRP2); and		1	1								4	Full Compliance	Bong Dam Safety - 2018 Intermediate Surveillance Report (Rev 0 October 2019) Work Area Environmental Inspection - Bing Bong Water Management Infrastructure - October 2019	BBSRP2 was not included in WMP 2020. MRM Bing Bong Dam Safety - 2018 Intermediate Surveillance Report (Rev 0 October 2019) includes: Bing Bong Dredge Spoils (BBDs) and Bing Bong Surface Runoff Ponds (BBSRP). No TARP in the WMP. The BBSRPs are subject to the routine internal inspections (BB Water Management - October 2019) and annual intermediate dam safety inspections by GHD Pty Ltd (2018 Intermediate Surveillance Report GHD- BB.  Condition 37a includes an OFI that relates to this sub-condition.	
37.a.xxii	Bing Bong Site Runoff Pond 3 (BBSRP3).		1	1								4	Full Compliance	Bong Dam Safety - 2018 Intermediate Surveillance Report (Rev 0 October 2019) Work Area Environmental Inspection - Bing Bong Water Management Infrastructure - October 2019	BBSRP3 was not included in WMP 2020. MRM Bing Bong Dam Safety - 2018 Intermediate Surveillance Report (Rev 0 October 2019) includes: Bing Bong Dredge Spoils (BBDs) and Bing Bong Surface Runoff Ponds (BBSRP). No TARP in the WMP. The BBSRPs are subject to the routine internal inspections (BB Water Management - October 2019) and annual intermediate dam safety inspections by GHD Pty Ltd (2018 Intermediate Surveillance Report GHD- BB.  Condition 37a includes an OFI that relates to this sub-condition.	
38	The Operator must not transfer water to or discharge water from any water storage structure until water quality analysis has been received and interpreted by the Operator and results confirm the water is suitable for the destination, having regard to the requirements of this document and the MMP and any other relevant restrictions on transfer or discharge of water within or from the Mine. In this regard:		1									4	Full Compliance	Sighted waste discharge detailed calculations (Dilution Calculator spreadsheet for Discharge Point SW11 10Mar2019) PRO-2200035 Waste Discharge Procedure provided.  The Waste Discharge Procedure requires checking the monitoring requirements of the latest WDL and Authorisation and ensuring the Monitoring Schedule and checklists align with the requirements.	A discharge will typically occur each wet season. Surface water sampling is conducted weekly on site. Should site storage and river conditions require a discharge, a discharge calculation is undertaken to ensure that there will be no impact on the water quality of the river. Monitoring results from the previous week will be used as part of this calculation. Run continuously every single day and watched closely. No Discharge occurred in 2019/2020.	
38.a	The Operator is authorised to undertake works to release water from WMD to Little Barney Creek in accordance with the 2013-2015 MMP amendment and additional information provided to the Department, as defined in Condition 1(j)(ii)(11) and Condition 38(b).		1			1						4	Full Compliance	PRO-2200035 Waste Discharge Procedure provided.  Provided monitoring data for the March 2019 discharge event.	No discharge during the 19/20 wet season.	
38.b	Water releases are authorised from the following points WMD Mine Levy Release Point X 3 and South East Levy 1 release point		1			1						4	Full Compliance	Sighted photographs of permanent water discharge structures. Water Management Plan 31Jan2020 (Version 1.0) Section 3.8.  Operator is only authorised to discharge from set locations (physical pipes, not overland flow etc). The WMP in Section 3.8 included discharge point MLDP (mine levee pumping outlets) and SEL1 DP (South-east levee 1 discharge point).		
38.c	Total loads of mine-derived contaminants from all source inputs must be characterised for the 2017-2018 period by 30 June 2020, unless otherwise agreed in writing by the Department.		1			1				1		4	Full Compliance	Sighted the report dated 08May2020 2017-2018 Mine Derived Analyte Loads Assessment provided along with letter to DPRI with its submission.  2017-2018 Mine Derived Analyte Loads Assessment Report dated 01Feb2019 fulfils this condition.  The daily analyte loads were estimated by interpolating the available weekly water quality data, with some of the interpolation undertaken over extended periods.		
38.d	The Operator must ensure:															

Authorisation Compliance Workbook - Operator		ASPECT										Score	Compliance Level	Evidence	Comments
2019 Authorisation Condition No.	Condition/Requirement	Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
38.d.i	The WMD release to Little Barney Creek is undertaken in a way that minimises localised erosion, and utilises suitable energy dissipation and flow spreader structures (e.g. rock basin) and be monitored daily during release events;		1									4	Full Compliance	Sighted webcam of location showing placed rock erosion protection and energy dissipation. WMD Release Point Checklist (for 2020/21 Wet Season)	WMD Release Point Checklist (for 2020/21 Wet Season) requires monitoring during discharge - daily inspection of the rock basin at the release point to ensure erosion is being suitably controlled.
sub 38.d	In the event of erosion at the Carpentaria Highway culvert system, remediation must be implemented to the satisfaction of DIPL and Department;		1									N/A	Not Applicable		IM was advised by the Operator that erosion at the Carpentaria Highway culvert system did not occur in the audit period.
38.d.ii	A cross-section profile survey is undertaken immediately up-stream and down-stream of the Carpentaria Highway crossing, prior to and following each wet season;		1									4	Full Compliance	Little Barney Creek figures_201104 (shows LiDAR for October 2018, August 2019 and August 2020).  For 2018/19 assessment, refer to OPR 2019 Appendix V, Section 2.5.5.2 and Appendix XII.  For 2018/19 assessment, OPR 2019 Appendix V, Section 2.5.5.2 and Appendix XII states "scans were completed on January 22, 2019 (pre-discharge event) and May 5, 2019 (post-discharge event and wet season rainfall)."  LiDAR and associated cross sections upstream and downstream of the Carpentaria Highway were provided for October 2018, August 2019 and August 2020.	Surveys undertaken annually in the dry season so each survey relates to following one wet season and prior to the next wet season.
38.d.iii	Significant changes to creek morphology as function of time are quantified, prior to first water release, and following the last water release, for each wet season. 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);		1									4	Full Compliance	Sighted morphology study report as part of the 2019 OPR.  IM advised by the Operator that drone fly over occurs once a year to assess any significant morphology changes.	The IM was advised by the Operator that drone monitoring only commenced in 2019.
38.d.iv	Evidence is available for inspection of continuous flow in Little Barney Creek along the length of the drainage system between WMD release outlet and Little Barney Creek Diversion Channel;		1							1		4	Full Compliance	2019/20 Continuous Logger Data  019/20 Continuous Logger Data includes the 2018/2019 and 2019/2020 wet season flows for Little Barney Creek.	Flow monitoring occurs, however continuous capture of data is problematic due to extreme climate and flow conditions impacting monitoring equipment. Faulty equipment maintained or replaced as necessary.
38.d.v	measurement and recording of flow duration, flow rate and volume of all water released from WMD into Little Barney Creek;		1							1		4	Full Compliance	Sighted table 2.2 Managed Discharge Events 2018/2019 Wet Season including flow rate, flow volume, location.	
38.d.vi	The surface water monitoring schedule for the mine site includes SW06, and must be assessed for identical parameters as defined for SW03 as per Condition 1.1)(ii)(11). At monitoring points SW03 and SW06:		1			1				1		4	Full Compliance	Sighted SW03 and SW06 on the MRM Adaptive Management Plan January 2020 Operator Monitoring Schedule 2019/20 Rev. 2  Upon Discharge Surface Water Field Sheet 2018/19 does not include SW03.WMD Release Point Checklist (for 2020/21 Wet Season) has identical field sampling requirements for SW03 and SW06. The surface water monitoring schedule 2019 2020 rev 2 includes SW06 and it is assessed for the parameters that SW03 is plus additional parameters.	SW03 and SW06 are surface water monitoring locations.  Checked Q4 2018 Quarterly Monitoring Report 1810-1812 but as there was no release there was no monitoring to check.
38.d.vi.a	Field parameters must also be measured daily during water release from WMD into Little Barney;		1			1				1		4	Full Compliance	Operator Monitoring Schedule 2018/19 Rev. 0 Operator Monitoring Schedule 2019/20 Rev. 2 Upon Discharge Surface Water Field Sheet 2018/19 WMD Release Point Checklist (for 2020/21 Wet Season) WMD RP Monitoring Data (discharge event 24 to 29 March 2019)	The release point checklist requires daily field readings at SW03 and SW06 during discharge. Checked Q4 2018 Quarterly Monitoring Report 1810-1812 but as there was no release there was no monitoring to check. Operator provided WMD monitoring data.
sub 38.d.vi	The surface water monitoring analytical suite must include thallium, boron and cobalt.		1			1				1		4	Full Compliance	Operator Monitoring Schedule 2018/19 Rev. 0 Operator Monitoring Schedule 2019/20 Rev. 2 WMD RP Monitoring Data (discharge event 24 to 29 March 2019)  Monitoring schedule includes thallium, boron and cobalt. WMD monitoring data from discharge event 24 to 29 March 2019 includes thallium, boron and cobalt.	Checked Q4 2018 Quarterly Monitoring Report 1810-1812 but as there was no release there was no monitoring to check.
38.d.vi.b	The surface water monitoring 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,		1			1				1		4	Full Compliance	WMD Release Point Checklist (for 2020/21 Wet Season) WMD RP Monitoring Data (discharge event 24 to 29 March 2019)  WMD Release Point Checklist (for 2020/21 Wet Season) requires daily field readings at SW03 and SW06 for two weeks after discharge finishes. WMD RP Monitoring Data (discharge event 24 to 29 March 2019) showed that sampling continued until there was no flow at the sampling location.	Checked Q4 2018 Quarterly Monitoring Report 1810-1812 but as there was no release there was no monitoring to check.

Authorisation Compliance Workbook - Operator		ASPECT											Score	Compliance Level	Evidence	Comments	
2019 Authorisation Condition No.	Condition/Requirement	Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting							
38.d.vii	total loads of analytes (including lead and zinc) from all controlled discharge activities entering McArthur River must be measured at location SW06.		1			1					1	4	Full Compliance	Operator Monitoring Schedule 2018/19 Rev. 0 Operator Monitoring Schedule 2019/20 Rev. 2 WMD RP Monitoring Data (discharge event 24 to 29 March 2019)  The monitoring schedules do include that total metals, including for lead and zinc should be included at SW06 when WDL is expected to reach SW06 (in addition to weekly sampling when there is a flow) and WMD RP Monitoring Data (discharge event 24 to 29 March 2019) includes total loads of analytes including lead and zinc.			
38.d.viii	All data and results acquired as part of the activity be interpreted and reported in the Operator's Annual Operational Performance Report and the performance of this activity evaluated in terms of its effectiveness as a management tool.		1			1					1	3	Part Compliance (High)	EMR 2020: Appendix T Environmental Monitoring Report 2019/20 - Surface Water. OPR 2019: Surface Water Monitoring Report, 2018-19 (KCB, 2019a) is provided in Appendix V.  2020 EMR Section 4.1.3 "No water was discharged under the waste discharge licence WDL174-11 over the reporting period owing to site water shortage from August 2019 to February 2020." EMR 2020: Appendix T Environmental Monitoring Report 2019/20 - Surface Water includes: *Natural surface water program and artificial surface water program (monitoring data included in appendices V and VIII respectively); *Internal water transfers (e.g. Figure 2.48 Recorded TSF WMD Stored Volume, Transfers and Discharges, May 2019 – April 2020.) OPR 2019: Surface Water Monitoring Report, 2018-19 (KCB, 2019a) is provided in Appendix V.  Sufficient evidence of evaluation of activity's effectiveness as a management tool not available.	OPI: Evaluate the effectiveness of the EMRs as a management tool for the interpretation and reporting of data and results of water transfer or discharge from any water storage structure.		
39	Surface water management infrastructure associated with the lead filtration facility at the Mine must be suitably designed and constructed to contain a 1:100 ARI rainfall event.		1									N/A	Not Applicable		The lead filtration facility at the mill is located inside the open pit flood levy wall which has a 1:100 ARI. The new lead filtration facility (listed in MMP 2013-15 Section 4.3.14.1) has not been constructed and no design drawings are available. Updates on this project have been included in the OPR/EMR within the Reconciliation of Operational Commitments and Actions tables.		
40	Water management using the Centre Pivot Irrigator is authorised within the Mine Levee in accordance with concept presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12. The system is to be configured to maximise evaporation and minimise surface spray drift, surface runoff and infiltration into underlying natural soils.		1		1							N/A	Not Applicable		The centre pivot irrigator has not yet been installed. The TSF is operating to meet its conditions without the Centre Pivot Irrigator.		
<b>WPROD CONSTRUCTION</b>																	
41	The Operator must construct the WPROD in accordance with the following regime:												-		Completed in 2017 and so is outside of the audit period.		
41.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;		1								1	N/A	Not Applicable		Completed in 2017 and so is outside of the audit period.		
41.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;		1								1	N/A	Not Applicable		Completed in 2017 and so is outside of the audit period.		
41.c	field parameters must include pH, SEC, temperature, REDOX and dissolved oxygen;		1								1	N/A	Not Applicable		Completed in 2017 and so is outside of the audit period.		
41.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;		1								1	N/A	Not Applicable		Completed in 2017 and so is outside of the audit period.		
41.e	additional sampling and analysis must be undertaken if there is a substantial change in field parameters (approximately 30%);		1								1	N/A	Not Applicable		Completed in 2017 and so is outside of the audit period.		
41.f	analysis must include: SEC, major ions (Ca, K, Mg, Na, Cl, CO <sub>3</sub> , HCO <sub>3</sub> and SO <sub>4</sub> ), Al, As, Cd, Co, Cu, Fe, Mn, Ni, Se and Zn;		1								1	N/A	Not Applicable		Completed in 2017 and so is outside of the audit period.		
41.g	field parameters and samples for analysis must be taken from the dewatering source, not the receiving storage;		1								1	N/A	Not Applicable		Completed in 2017 and so is outside of the audit period.		
41.h	if flow meters fail, then dewatering must cease until they are repaired or replaced;		1								N/A	Not Applicable		Completed in 2017 and so is outside of the audit period.			

2019 Authorisation Condition No.		Condition/Requirement	ASPECT										Score	Compliance Level	Evidence	Comments
			Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
41.i		field water quality parameters, flow meter volumes and laboratory analysis must be submitted to Department on a monthly basis;		1							1	N/A	Not Applicable		Completed in 2017 and so is outside of the audit period.	
41.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; and				1						N/A	Not Applicable		Completed in 2017 and so is outside of the audit period.	
42		Construction reports including QA and QC data must be provided to the Department within 30 days of construction being completed.		1							1	N/A	Not Applicable			
<b>EPROD CONSTRUCTION</b>																
43		The Operator is authorised to complete works to construct the EPROD in accordance with the document entitled McArthur River Mining Pty Ltd - Eastern Perimeter Runoff Dam - Detailed Design Report - March 2018 (GHD Report) ensuring that only benign material be used in the construction of the western embankment wall.		1								N/A	Not Applicable		Not yet commissioned - as such construction report is not yet available.	
44		The Operator must construct the EPROD in accordance with the following regime in the event groundwater dewatering is necessary:														
44.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;		1							1	N/A	Not Applicable		The Operator's mining department verbally advised that no groundwater has been encountered.	
44.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;		1							1	N/A	Not Applicable		The Operator's mining department verbally advised that no groundwater has been encountered.	
44.c		field parameters must include pH, SEC, temperature, REDOX and dissolved oxygen;		1							1	N/A	Not Applicable		The Operator's mining department verbally advised that no groundwater has been encountered.	
44.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;		1							1	N/A	Not Applicable		The Operator's mining department verbally advised that no groundwater has been encountered.	
44.e		additional sampling and analysis must be undertaken if there is a substantial change in field parameters (approximately 30%);		1							1	N/A	Not Applicable		The Operator's mining department verbally advised that no groundwater has been encountered.	
44.f		analysis must include: SEC, major ions (Ca, K, Mg, Na, Cl, CO <sub>3</sub> , HCO <sub>3</sub> and SO <sub>4</sub> ), Al, As, Cd, Co, Cu, Fe, Mn, Ni, Se and Zn;		1							1	N/A	Not Applicable		The Operator's mining department verbally advised that no groundwater has been encountered.	
44.g		field parameters and samples for analysis must be taken from the dewatering source, not the receiving storage;		1							1	N/A	Not Applicable		The Operator's mining department verbally advised that no groundwater has been encountered.	
44.h		if flow meters fail, then dewatering must cease until they are repaired or replaced;		1								N/A	Not Applicable		The Operator's mining department verbally advised that no groundwater has been encountered.	
44.i		field water quality parameters, flow meter volumes and laboratory analysis must be submitted to Department on a monthly basis;		1							1	N/A	Not Applicable		The Operator's mining department verbally advised that no groundwater has been encountered.	
44.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; and				1					1	N/A	Not Applicable		The Operator's mining department verbally advised that no groundwater has been encountered.	
45		Construction reports including QA and QC data endorsed by the Independent Certifying Engineer (ICE) must be provided to the Department prior to commencement of operation within 30 days of construction being completed									1	N/A	Not Applicable		Not yet commissioned - as such construction report is not yet available.	

2019 Authorisation Condition No.		Condition/Requirement	ASPECT										Score	Compliance Level	Evidence	Comments	
			Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting						
<b>TAILINGS STORAGE FACILITY</b>																	
46		An Independent Certifying Engineer (ICE) must oversee and be responsible for any works undertaken at the TSF:							1			4	Full Compliance	MRM Cell 2 Raise 5 RL 10059m Construction Report 3219255-REP-0_2019 Intermediate Dam Safety Surveillance Report_TSF and WMD April 2020 32-19255-MRM_Cell 1 RL10059m IFC_Reduced_Size GHD Pty Ltd_AUD05m GHD Pty Ltd (PPL)_AUD05m  The evidence demonstrated compliance with this condition.			
46.a		The ICE must warrant and accept both the design and construction works, without limitation on responsibility;							1			4	Full Compliance	3219255-REP-0_2019 Intermediate Dam Safety Surveillance Report_TSF and WMD April 2020 MRM Cell 2 Raise 5 RL 10059m Construction Report  "This report has been prepared by GHD for McArthur River Mining Pty Ltd and may only be used and relied on by McArthur River Mining for the purpose agreed between GHD and McArthur River Mining for compliance with the regulatory requirement for annual inspection of the nominated dams. GHD otherwise disclaims responsibility to any person other than McArthur River Mining arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible." The construction report is reviewed and approved by ICE B Hanslow (2nd last page of document).			
46.b		during all phases of construction the ICE must be present at the TSF site to oversee and certify that the works meet the approved design specifications. If the ICE wishes to use the Operator's project manager/resident engineer as an onsite representative then the ICE must agree that this does not diminish responsibility or liability for the project;							1			4	Full Compliance	MRM Cell 2 Raise 5 RL 10059m Construction Report  Periodic engineering inspections were carried out by GHD Engineers (as ICEs) throughout the works. MRM Cell 2 Raise 5 RL 10059m Construction report is reviewed and approved by ICE B Hanslow (2nd last page of document).	Advised by MRM that there is no delegation by the ICE to use the Operator's project manager/resident engineer.		
46.c		the ICE must hold appropriate public and professional indemnity insurance to cover the scope of works associated with any embankment raise contemplated in the MMP; and							1			4	Full Compliance	GHD Pty Ltd_AUD05m GHD Pty Ltd (PPL)_AUD05m  Certificate of Placement – Public and Products Liability and Certificate of Placement – Professional Indemnity provided meet this condition.			
46.d		construction reports including QA and QC data must be provided to the Department within 30 days of construction being completed.							1	1		3	Part Compliance (High)	Sighted MRM Cell 2 TSF Stage 5 Raise to RL 10059m. Sighted email dated 24Aug2020. Construction was completed in 2018 however the as constructed report was not delivered to the department until 24Aug2020.  Part compliance- high (due date missed).	The IM understands that the Operator are rolling out Risk Manager's Environmental Obligations Register, to allow the relevant work areas to see and own requirements via actions being assigned directly to them when appropriate. Consider also assigning actions to members of the Environment Team to check in as a secondary measure.  OFI: Implement Risk Manager's Environmental Obligations Register, which assigns actions and accountabilities. (Note: Operator has advised IM that Environmental Obligations Register is being commissioned in Q2 2021).		
47		The Operator must convene an advisory board (Independent Tailings Review Board or ITRB) and the Operator must ensure that includes independent geotechnical, tailings, and groundwater specialists which meets regularly to advise on operation of the TSF and any future modifications to its design. Should future review of the designs 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.							1			4	Full Compliance	Sighted ITRB presentation 20180509_MRM_ITRB_GW_Meeting Minutes	Formal meeting minutes have generally not been maintained to date, which would provide supporting evidence of meeting this condition. The Operator advised the IM that they will look to maintain meeting minutes in the future, following consultation with the ITRB.  OFI: Assist the coordination of the Independent Tailings Review Board (ITRB) activities and records by the Operator taking responsibility for: •requesting Department endorsement of meeting frequency •preparing meeting schedules, agendas and issuing ITRB meeting minutes •retaining evidence of Department endorsement of members.		

2019 Authorisation Condition No.		ASPECT										Score	Compliance Level	Evidence	Comments	
Condition/Requirement		Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting						
48	Details of the members of the ITRB panel and meeting frequency must be submitted to the Department for endorsement by the Department.							1				3	Part Compliance (High)	DME letter- ITRB proposed members dated 15 September 2015 MRM re Proposed change to ITRB member dated 17 October 2016  20180509_MRM_ITRB_GW_Meeting Minutes  Initial letter (dated 04Sep2015) referred to by the then DME could not be located. This timeframe and the correspondence reviewed from the then DME dated 15Sep2015 are outside of the audit period. Similarly letter from Operator to DPIR dated 17Oct2016 advising of an ITRB member change is outside the audit period.  There was insufficient evidence available at the time of the audit to show endorsement of the current ITRB.  20180509_MRM_ITRB_GW_Meeting Minutes doesn't include Bruce Brown or David Williams who appear on subsequent documents (along with Tamie Weaver) as the ITRB.	See OFI in condition 47.	
49	The ITRB is required to meet within 90 days from commencement of construction to allow sufficient time for review of subsequent modification to the TSF.							1				4	Full Compliance	Cell 2, Stage 6 Raise The following files were provided in support of the Cell 2, Stage 6 raise: - MRM TSF Cell 2 Stage 6 Design Report (referral to the ITRB) emailed to ITRB (Tamie Weaver, Bruce Brown and David Williams) letter addressed to David Williams dated 30 July 2019 - ITRB Review of McArthur River Mining Pty Ltd Cell 2 TSF Stage 6 Raise to RL 10061 Detailed Design Report dated 01Sep2019 - ITRB endorsement of the Cell 2, Stage 6 raise  Construction commenced on 03Sep2019 so although it is unclear if the ITRB "met" or only did a review, this condition is considered met.  Cell 1, Stage 5 Raise The following files were provided in support of the TSF Cell 1, Stage 5 raise: - 20.05.26 ITRB Presentation - Cell 1 Stage 5 Design Report (letter to David, Tamie and Bruce dated 09Jun2020) - RE Cell 1 Stage 5 - Design Report Rev 0 - RE MRM ITRB Risk Register - TSF Cell 1 Stage 5 Raise to RL 10059 Detailed Design Report  The 26 May meeting satisfies meeting within 90 days of construction commencing (12 August) as it was 78 days.	See OFI in condition 47.	
50	The Operator must 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 not limited to:							1				4	Full Compliance	Sighted McArthur River Mining Cell 1 Raise 4 and TSF Seepage Interception Trench Independent Technical Review dated 15Mar2018. ITRB endorsement Cell 1 Raise 4 ITRB endorsement Cell 2 Raise 6		
50.a	Studies and/or trials to inform future construction and/or operation of the structure; and							1				4	Full Compliance	ITRB endorsement Cell 1 Raise 4 ITRB endorsement Cell 2 Raise 6  ITRB endorsement Cell 1 Raise 4 and Cell 2 Raise 6 confirmed.		
50.b	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.							1				4	Full Compliance	TSF Operations, Maintenance and Surveillance (OMS) Manual, 31/07/2020, Version 5.0 Revision following Cell 1 Stage 4 Raise to RL 10,056 m.  ITRB endorsement Cell 1 Raise 4 and Cell 2 Raise 6 confirmed. TARP updated in TSF Operations, Maintenance and Surveillance (OMS) Manual.		
51	The Operator is authorised to complete works to recommission TSF Cell 1 in accordance with the 2013-2015 MMP amendment and additional information provided to the Department, as defined in Condition 1.1.ii.12. The Operator must ensure:															
51.a	The existing clay cap, if redundant, is removed as part of the recommissioning works; and							1				4	Full Compliance	TSF Cell 1 Stage 4 - Raise to RL 10056m Construction Report (July 2020)  The clay cap has been removed to allow maximum space for tailings. The As constructed report confirmed this in Section 3.3.		



2019 Authorisation Condition No.		Condition/Requirement	ASPECT											Score	Compliance Level	Evidence	Comments
			Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting						
51.b		The Cell 1 Seepage Interception Trench system must be constructed and an operation manual detailing rules of operation, maintenance and environmental monitoring requirements be developed prior to operation of the system; and							1		1	4	Full Compliance	TSF Operations, Maintenance and Surveillance (OMS) Manual, 31Jul2020, Version 5.0 Revision following Cell 1 Stage 4 Raise to RL 10,056 m fulfilled this condition.	Cell 1 recommissioning is a future system that was not operational during the audit period. Commissioning anticipated 2020/2021.		
51.c		The TSF OMS manual, including the TARP must be updated to include Cell 1.							1		1	4	Full Compliance	TSF Operations, Maintenance and Surveillance (OMS) Manual, 31Jul2020, Version 5.0 Revision following Cell 1 Stage 4 Raise to RL 10,056 m fulfilled this condition.	Cell 1 recommissioning is a future system that was not operational during the audit period. Commissioning anticipated 2020/2021.		
52		The Operator is authorised to complete lift Cell 1 embankment raise works as follows:															
52.a		Cell 1 Stage 4 is to be in accordance with the 2013-2015 MMP amendment and additional information provided to the Department, as defined in Condition 1.i.ii.2;							1			4	Full Compliance	TSF Cell 1 Stage 4 - Raise to RL 10056m Construction Report (July 2020)	No inconsistencies with Condition 1.i.ii.1 were found.		
52.b		Trials and investigations, including but not limited to blending of tailings with clay, investigation of in-situ Cell 1 conditions at east and west sumps, restriction on rate of placement of embankment materials and any other works identified by ITRB must be undertaken to inform the final construction;							1			4	Full Compliance	ITRB endorsement Cell 1 Raise 4 TSF Cell 1 Stage 4 - Raise to RL 10056m Construction Report (July 2020)  The ITRB endorsed the TSF Cell 1 Stage 4 - Raise to RL 10056m Construction Report and therefore works identified by the ITRB must have been undertaken to inform the final construction. Section 5.3.2 discusses blending the existing Cell 1 clay material with the existing tailings and the trials/investigations that were undertaken. Section 3.3 discussion stripping the eastern sump.			
52.c		If construction works are not completed prior to the start of the wet season, the Operator must make allowances of rainfall on the stability of the structure to the satisfaction of the ICE;							1			N/A	Not Applicable		Operator advised completed prior to the wet season late 2019.		
52.d		At completion of the construction works the ICE must approve an "as-constructed" construction report and updates to the TSF Operations, Maintenance and Surveillance Manual and TARPs. The construction report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied to the Department; and							1		1	4	Full Compliance	TSF Cell 1 Stage 4 - Raise to RL 10056m Construction Report TSF Operations, Maintenance and Surveillance (OMS) Manual, 31/07/2020, Version 5.0 Revision following Cell 1 Stage 4 Raise to RL 10,056 m  Construction report: includes hold point signoffs in the Borrow Management Plan MRM TSF Cell 1 Raise-4 and sighted laboratory geotechnical testing listed in Appendix B in 2019 TSF Cell 1 Raise to RL10056m - Lot Register. Note: the term responsible engineer/designer appears to be used. Reviewed and signed by ICE (second last page). Manual:"Section2.2.3Responsible Engineer The Responsible Engineer is the professional engineer responsible for verifying that the TSF / WMD is designed, constructed and operated in accordance with best practice and the applicable guidelines, standards and regulations. The Responsible Engineer is also responsible for or technical supervision during construction, and should certify that the works have been constructed in conformance with the design, drawings, and specifications." Operations manual includes updated TARPs. Operations manual was updated following Cell 1 Stage 4 Raise to RL 10,056 m.	OFI: Improve ICE reports on future Tailings Storage Facility cell embankment raise work by stating the relevant Authorisation conditions and MMP amendments as design criteria and that the report is certifying against these listed regulatory requirements.		
52.e		The TSF Cell seepage mitigation system is fully operational and optimised within 12 months of recommencing tailings deposition in Cell 1.				1			1			N/A	Not Applicable		Not applicable - TSF cell 1 seepage system commissioning anticipated 1/12/20. This is a future item.		
53		The Cell 2 Raise 3 lift of the TSF may be via upstream construction. Cell 2 Raise 4 lift of the TSF has been reviewed and approved by the ITRB. Cell 2 Raise 5 lift of the TSF has been reviewed and approved by the ITRB. Any further lifts will be subject to review and approval by the ITRB which must consider all information on previous designs, construction and QA/QC information.							1			N/A	Not Applicable		Condition is a statement only. Retains the history of previous Authorisation conditions.		
54		The Operator must operate and maintain the TSF in accordance with the most up-to-date TSF OMS manual, ensuring:							1			4	Full Compliance	MRM TSF Quarterly Report – September to November 2019 TSF Operations, Maintenance and Surveillance (OMS) Manual, 31Jul2020, Version 5.0 Appendix A - Routine daily inspection form  See TSF Operations, Maintenance and Surveillance (OMS) Manual, 31Jul2020, Version 5.0 Section 6.1 n 6 'Surveillance objectives' outlines the process for the routine visual inspections daily. The routine visual inspections are only performed by personnel trained as per Section 2.4.			

Authorisation Compliance Workbook - Operator		ASPECT										Score	Compliance Level	Evidence	Comments
2019 Authorisation Condition No.	Condition/Requirement	Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
54.a	not discharge water into the TSF unless it is water contained within the Tailings stream which is at normal operational slurry densities;							1			4	Full Compliance	MRM TSF Quarterly Report – September to November 2019 TSF Operations, Maintenance and Surveillance (OMS) Manual, 31Jul2020, Version 5.0 Appendix A - Routine daily inspection form  Operator advised that the mill has a target range for the slurry density and it is constantly monitored. Section 3.2.1.4 shows that densities consistently met the target density of between 50 and 55%. This condition is stated in the TSF Operations, Maintenance and Surveillance (OMS) Manual. Section 6.1 discusses the daily visual inspections, that include checking the density.		
54.b	deposit all Tailings sub-aerially to allow proper beaching and drying between deposition cycles;							1			4	Full Compliance	TSF Operations, Maintenance and Surveillance (OMS) Manual, 31Jul2020, Version 5.0 Appendix A - Routine daily inspection form  This condition is stated in the TSF Operations, Maintenance and Surveillance (OMS) Manual and incorporated in Section 4.1, which states that tailings delivered sub-aerially through offtake spigots located at approximately 50 m intervals.		
54.c	maintain surface water levels in the TSF such that they do not come into contact with the embankment internal walls; and		1					1			4	Full Compliance	TSF Operations, Maintenance and Surveillance (OMS) Manual, 31Jul2020, Version 5.0 Appendix A - Routine daily inspection form  This condition is stated in the TSF Operations, Maintenance and Surveillance (OMS) Manual. The Routine daily inspection form includes checking water levels and the minimum distance to the walls and this requirement is discussed in Section 6.1. Section 4.1 states that the embankments are not designed to be water retaining, and ponding must be kept a minimum of 50 m away from the embankment walls.		
54.d	manage the phreatic surface to avoid compromising the integrity of the embankment.							1			4	Full Compliance	TSF Operations, Maintenance and Surveillance (OMS) Manual, 31Jul2020, Version 5.0 Appendix A - Routine daily inspection form  This condition is stated in the TSF Operations, Maintenance and Surveillance (OMS) Manual. Section 4.1 states that the embankments are not designed to be water retaining, and ponding must be kept a minimum of 50 m away from the embankment walls.		
55	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:		1		1			1		1	4	Full Compliance	MRM TSF Quarterly Report – September to November 2019 Attachment A – VWP Review September to November 2019 MRM TSF Quarterly Report – Cover Letter (September to November 2019)  The quarterly report September to November 2019 was submitted to DPIR on 06Jan2020.		
55.a	water levels in the TSF;		1					1		1	4	Full Compliance	MRM TSF Quarterly Report – September to November 2019  Refer Table 1 for monthly average levels.		
55.b	all monitoring data associated with the seepage (including geotechnical and environmental monitoring);		1		1			1		1	4	Full Compliance	MRM TSF Quarterly Report – September to November 2019		
55.c	flow rate of each seep;		1		1			1		1	4	Full Compliance	MRM TSF Quarterly Report – September to November 2019  Refer Figure 6 for daily volumes of seepage (flow rate of volume/day).		
55.d	all actions undertaken during the quarter associated with the seepage and management of Tailings; and		1		1			1		1	4	Full Compliance	MRM TSF Quarterly Report – September to November 2019  The report meets this condition including Surprise Creek Seepage Interception Trench (Section 4.3), FIGURE 4. NEW SEEPAGE COLLECTION SYSTEM AT OLD SPILLWAY, Non-woven geotextile was placed over the southern embankment seepage and Section 3.4 TSF Stability).		
55.e	all actions planned for the next quarter associated with seepage and management of Tailings.[1]		1		1			1		1	4	Full Compliance	MRM TSF Quarterly Report – September to November 2019  Refer Table 3 for ongoing operational activities.		
56	The Operator is authorised to complete works to raise the embankment of the TSF in accordance with the document entitled McArthur River Mining Pty Ltd - Cell 2 TSF Stage 5 Raise to RL 10059 - Detailed Design Report – May 2018 (GHD Report), ensuring:							1			4	Full Compliance	Sighted MRM Cell 2 TSF Stage 5 Raise to RL 10059m.  MRM Cell 2 TSF Stage 5 Raise to RL 10059m Section 1.2 refers to "Cell 2 TSF – Stage 5 Raise to RL 10059, Detailed Design Report", GHD, May 2018 and Section 10 stated "Based on observations from engineering inspections and a thorough review of the construction records, it is the opinion of GHD that the TSF Cell 2 Raise 5 has been constructed to an appropriate standard, in line with the design intent."		



2019 Authorisation Condition No.		ASPECT										Score	Compliance Level	Evidence	Comments
Condition/Requirement		Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
56.a	Construction reports including QA and QC data endorsed by the Independent Certifying Engineer (ICE) must be provided to the Department prior to the deposition of tailings within the Cell 2 Raise 5 storage capacity and within 30 days of construction being completed.		1					1		1	3	Part Compliance (High)	Sighted MRM Cell 2 TSF Stage 5 Raise to RL 10059m. Sighted email dated 24Aug2020. Construction was completed in 2018 however the as constructed report was not delivered to the department until 24Aug2020.  Part compliance - high (due date missed).	The IM understands that the Operator is rolling out Risk Manager's Environmental Obligations Register, to allow the relevant work areas to see and be accountable for requirements via actions being assigned directly to them when appropriate. Consider also assigning actions to members of the Environment Team to check in as a secondary measure.  OFI: Implement Risk Manager's Environmental Obligations Register, which assigns actions and accountabilities. (Note: Operator has advised IM that Environmental Obligations Register is being commissioned in Q2 2021).	
57	The operator is authorised to construct, operate and maintain Cell 2 Stage 6 embankment lift in accordance with:														
57.a	concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12, ensuring:							1			4	Full Compliance	Cell 2 Raise 6 Design Report 26.07.19_GHD_Draft A Enclosure 1 – ITRB Review and Endorsement (INDEPENDENT TAILINGS REVIEW BOARD (ITRB) - DOCUMENT COMMENT TRACKING REGISTER 1 September 2019) Ltr-DPIR (ITRB Endorsement Cell 2 Stage 6)  No inconsistencies with Condition 1.1.ii.12 were found.	Operator advised that construction is underway but not yet completed.	
57.a.i	Detailed designs follow the approved McArthur River Mining Pty Ltd Tailings Storage Facility Raising General Specification for Design and Construction and must include design objectives that satisfies both engineering and environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives;							1			4	Full Compliance	Cell 2 Raise 6 Design Report 26.07.19_GHD_Draft A  TSF Cell 2 Embankment Raise - RL10061m Technical Specification September 2019, revision 0  The report includes evaluation of dam safety and environmental risks as recommended by ANCOLD (2012a), and presents strategies to manage and mitigate risk. A risk matrix is attached to the LOM Report that is consistent with the overall Operator EIS approach, and consists of implementing a 'likelihood and consequence' risk matrix, determining the rating for each identified risk, the control measures used to mitigate that risk, and then an assessment of the residual rating after taking these control measures into account. Section 7 discusses critical issues pertaining to construction, design validation, performance and the ongoing dam safety program for the Stage 6 Cell 2 TSF.  Section 2.4 Engineering Hold Points of the TSF Cell 2 Embankment Raise - RL10061m Technical Specification September 2019, revision 0 states "Mandatory Engineering Hold Points shall include those specified to ensure compliance with the intent of the designs and with other specified requirements, and to ensure that critical and/or irreversible activities are not constructed incorrectly."		
57.a.ii	The detailed designs must be reviewed and endorsed by the ITRB provided to the department prior to commencement of construction; and							1		1	4	Full Compliance	Enclosure 1 – ITRB Review and Endorsement (INDEPENDENT TAILINGS REVIEW BOARD (ITRB) - DOCUMENT COMMENT TRACKING REGISTER 1 September 2019) Ltr-DPIR (ITRB Endorsement Cell 2 Stage 6)  ITRB endorsement - GHD's Draft Detailed Design Report for the McArthur River Mining Pty Ltd (MRM) Cell 2 TSF Stage 6 Raise to RL 10061 is endorsed by the ITRB as more than adequate. The Cell 2 TSF Stage 6 Raise to RL 10061 report included detailed design drawings. The ITRB endorsement was provided to DPIR on 02Sep2019 according to the evidence provided. Operator advised construction commenced on 03Sep2019.		
57.a.iii	Should future review of the designs by independent experts require additional matters to be addressed, the operator together with the ITRB must provide and implement a written response that justifies the existing design or proposes an alternate design to the satisfaction of the Department.							1		1	N/A	Not Applicable		No independent TSF panel have been formed to date. Future item.	
57.b	at completion of the construction works the ICE must approve an "as constructed" construction report and updates to the TSF Operations, Maintenance and Surveillance Manual and TARPs. The construction report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied to the Department prior to the deposition of tailings.							1		1	N/A	Not Applicable		Future Item	

Authorisation Compliance Workbook - Operator		ASPECT										Score	Compliance Level	Evidence	Comments
2019 Authorisation Condition No.	Condition/Requirement	Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
<b>GEOCHEMICAL, GEOTECHNICAL AND HYDROGEOLOGICAL ASSESSMENTS AND INVESTIGATION DRILLING</b>															
58	The Operator is authorised to undertake Drilling Investigations as outlined in Conditions 1.1(ii)(9) and 1.1(ii)(12), ensuring adhering to industry best practice:				1						4	Full Compliance	<p>OPR 2018-2019 section 2.2 and Appendix A Regional Drilling and Investigation Program 2018-2019. In EMR 2020 section 2.2 and Appendix A 2019-2020 Drilling Register and Appendix V 2019 Hydrogeological Drilling and Field Campaign.</p> <p>OPR 2018-2019 states "MRM undertook a regional drilling program in 2018, which included 359 drill holes for hydrogeological testing, waste characterisation, alluvium cover definition and the installation of geotechnical and environment monitoring sites."</p> <p>"All drilling during the reporting period was undertaken in accordance with the 2013-2015 MMP."</p> <p>EMR 2019-2020 states "The Mine and BBLF operate in accordance with Variation of Authorisation 0059 and the 2013-2015 Mining Management Plan and its approved amendments. Key operational activities conducted during the reporting period included: [...] Exploration activities and a regional drilling program for hydrogeological testing, characterisation of waste materials and the installation of geotechnical and environmental monitoring sites."</p> <p>EMR 2019-2020 states "MRM undertook a series of regional drilling programs during the reporting period within MLN 1121, MLN 1122, MLN 1123, and MLN 1124, which included 237 drill holes for waste characterisation, alluvium cover definition, and resource development. MRM completed a total of 4,160 metres (m) of drilling, comprising 235 air core, and 2 diamond core holes. Operator also collected 668 soil samples for waste characterisation (Appendix A)."</p>	MLN 1122 and MLN 1124 were not nominated in the 2019 MMP, which is condition 1.1(ii)(12) referred to in this condition. However, the 2020 MMP approved after the audit period includes all the drilling areas listed in the EMR 2019-2020: "Existing and proposed exploration and investigation activities are planned to continue, consistent with methods that have been previously approved: • exploration drilling within MLN 582, MLN 1121, MLN 1122, MLN 1123, MLN 1124, MA 366, MA 455 and MA 456;"	
58.a	in order to collect samples for waste rock characterisation and geochemical and geotechnical analyses;				1			1		1	4	Full Compliance	OPR 2018-2019 section 2.2. EMR 2020 section 2.2. Performed as required.		
58.b	to characterise available construction and rehabilitation materials available within the Mine Levee Wall (including the pit) and areas surrounding the TSF and NOEF;					1					4	Full Compliance	OPR 2018-2019 section 2.2. EMR 2020 section 2.2. Performed as required.		
58.c	to enable geochemical assessment of the overburden emplacement facility and underlying sediments; and				1			1		1	4	Full Compliance	OPR 2018-2019 section 2.2. EMR 2020 section 2.2. Performed as required.		
58.d	to obtain hydrogeological information associated with pit inflows, groundwater inputs into the underground void and installation of additional monitoring bores to inform site management.				1					1	4	Full Compliance	OPR 2018-2019 section 2.2. EMR 2020 section 2.2. Performed as required.		
59	Characterisation data from the drilling must be kept and available to the Minister on request and reported in the Operator's Annual Operational Performance Report.				1					1	4	Full Compliance	OPR 2018-2019 section 2.2 and Appendix A Regional Drilling and Investigation Program 2018-2019 (not sighted). In EMR 2020 section 2.2 and Appendix A 2019-2020 Drilling Register (not sighted) and Appendix V 2019 Hydrogeological Drilling and Field Campaign (not sighted). OPR 2018-2019 says that drilling data is included in Appendix A Regional Drilling and Investigation Program 2018-19 (no sighted). EMR 2020 says that drilling data is included in Appendix A 2019-2020 Drilling Register (not sighted).	No request by the Minister during the period.	
60	All documentation relating to the geochemical assessment and alluvial investigation is to be made available to the Department on request.				1			1		1	N/A	Not Applicable		No request by the Minister during the period.	
<b>ENVIRONMENTAL MONITORING</b>															
61	The Operator must collect and maintain the following to the satisfaction of the Minister:														
61.a	all environmental monitoring data which is contemplated in this document or the MMP or reasonably required for the proper implementation of this document or the MMP; and									1	4	Full Compliance	Operator does not dispose of records. Records are kept on an offsite Glencore server. All raw environmental monitoring data and laboratory analysis results from the lab are uploaded into the Monitor Pro Database.		
61.b	any other environmental monitoring records and data prepared or obtained by or in the possession of the Operator at any time in connection with the Mine (including for example, monitoring records or data submitted to the Commonwealth government).									1	4	Full Compliance	Data is retained on Operator server in folders. An example of an extra study is the swing basin and channel sediment material characterisation for use in the future dredge management plan. All data recorded and stored permanently.		

Authorisation Compliance Workbook - Operator		ASPECT										Score	Compliance Level	Evidence	Comments
2019 Authorisation Condition No.	Condition/Requirement	Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
62	The Operator must ensure data contemplated by condition 58 is provided to a mining officer upon request and will not be destroyed without the written permission of the Minister.				1			1		1	4	Full Compliance	<p>Verbally advised by Operator that all monitoring data and records are retained on MonitorPro and/or SharePoint indefinitely.</p> <p>ASW200405BM_WDL [Example of water monitoring project folder]</p> <p>Screenshot - Project folders of April 2020 Artificial and Natural Surface Water Monitoring [from MRM Intranet].</p> <p>PRO-2200019 - Groundwater Data Logger Install and Download Procedure</p> <p>The current document control process involves archiving physical sample documentation completed by field staff (e.g. field sheets, Chain of Custody) for two years minimum, stored in the Operator Environment Office. Physical documentation is scanned and saved in 'sample project folders' on the Operator Intranet [...IM reviewed example]. Any inspection photos taken are saved in the 'sample project folder'. Laboratory documentation (e.g. lab reports, Certificates of Analysis) are received via email sent to a generic MRM Environment Team email address. Laboratory documentation is then saved in the corresponding 'sample project folder' on the MRM Intranet [IM reviewed example]. Laboratory results and field measurements are imported into the data management software program 'Monitor Pro 5', which undergoes a QA/QC process on a quarterly frequency prior to providing data to the DITT (as required by Condition 7). While physical copies are kept for minimum two years, electronic copies of files and data are stored on the MRM Intranet permanently.</p> <p>Groundwater logger data is downloaded in accordance with PRO-2200019[...IM reviewed example] and saved on the MRM Intranet.</p> <p>External consultants who conduct environmental monitoring save their data via their own methods. Monitoring program reports are prepared and provided to MRM by the consultant, who report on such data. Raw data tables are typically included as an appendix to the monitoring report. MRM can request data from consultants as required. Finalised reports are saved on the MRM Intranet, and included as attachments to the Environmental Mining Report."</p>	<p>No formal document control procedure exists.</p> <p>Operator advised "Sampling undertaken by MRM technicians (e.g. surface water, groundwater, dust, soil). External Sampling is undertaken by Consultants (e.g. Indo Pacific Environmental aquatic fauna monitoring, fluvial sediment).</p> <p>OFI: Prepare and implement a document control or retention procedure/policy.</p>	
63	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 Minister within 30 days of its establishment.		1							1	N/A	Not Applicable		Verbally advised no new water sampling locations during the audit period.	
64	Before 1 November 2016, the Operator must install and from then on maintain continuous monitoring devices. In this regard: a. devices must be installed in the following locations:		1							1	3	Part Compliance (High)	<p>Continuous monitoring difficult to achieve in extreme climate and waterways due to wet/dry seasons and unforeseen issues with monitoring equipment (e.g. buried in river sediment after wet season, retrieval in crocodile waterways, fire, equipment faults...)</p> <p>2018/19 Continuous Logger Data</p> <p>2019/20 Continuous Logger Data</p> <p>Gauging Station Register (last updated 2019, equipment mostly unchanged)</p> <p>2019 Servicing (correspondence from consultants Xylem following annual calibrations and maintenance)</p> <p>Gauging Station Annual Service Quotation - Xylem (Quote for the 2020/21 annual maintenance, includes equipment descriptions)"</p> <p>Monitoring devices are installed and Operator are maintaining these devices subject to extreme weather and site specific conditions. At SW29, SW30 and SW12 continuous monitoring loggers for flow, Ec and pH - equipment faults occur, especially during the wet season. Monitoring units are replaced immediately subject to real watercourse levels. There are regulatory constraints to building permanent monitoring structures e.g. AAPA certificate hence portable monitoring devices are utilised that are susceptible to faults due to extreme weather conditions. Operator does not have a set schedule to maintain these monitoring devices. Alerts are received if a device is not operating correctly and this is resolved asap. Servicing, calibration and maintenance are occurring based on evidence provided. Data was recorded for the majority of the wet season.</p>	OFI: Progress negotiations related to necessary approval requirements with other authorities to enable the construction of the permanent monitoring structures.	
64.a.i	SW29 (upstream Surprise Creek outside the zone of influence of TSF);		1							1	3	Part Compliance (High)	<p>2018/19 Continuous Logger Data</p> <p>2019/20 Continuous Logger Data</p> <p>2018/19 Continuous Logger Data includes SW29 although it says it was not observed to flow anytime during 18-19 Wet season. There are EC readings in late October and November 2018.</p> <p>2019/20 Continuous Logger Data includes level, temp, conductivity and depth from 05Nov2019. CellVisor RTU logger installed.</p>		

2019 Authorisation Condition No.		ASPECT										Score	Compliance Level	Evidence	Comments
Condition/Requirement		Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
64.a.ii	SCGS (Surprise Creek gauge station between the TSF and the Mine);		1							1	3	Part Compliance (High)	2018/19 Continuous Logger Data 2019/20 Continuous Logger Data  SW02. 2018/19 Continuous Logger Data as SW02 includes EC, temp and flow level. Flow data starts 01Nov2018 while the EC results are from 1 October. 2019/20 Continuous Logger Data includes SW02 from 05Nov2019 for level, temp, conductivity and depth. Note: 2018/19 Continuous Logger Data graph for SW02 shows flows plotted out of sync with the EC readings (e.g. the flow is not aligning with the X axis). CR800- Campbell Scientific + CellVisor RTU logger installed.		
64.a.iii	SW30 (upstream Emu Creek);		1							1	3	Part Compliance (High)	2018/19 Continuous Logger Data 2019/20 Continuous Logger Data  2018/19 Continuous Logger Data includes level (m), temp and EC. Flow data and EC starts 27Oct2018. Note: 2018/19 Continuous Logger Data graph for SW30 shows flows plotted out of sync with the EC readings (e.g. the flow is not aligning with the X axis). 2019/20 Continuous Logger Data includes level, temp, conductivity and depth from 19 December 2019. CellVisor RTU logger installed.		
64.a.iv	USGS (upstream at the McArthur River gauge station);		1							1	3	Part Compliance (High)	2018/19 Continuous Logger Data 2019/20 Continuous Logger Data  SW10. 2018/19 Continuous Logger Data includes EC, DO, pH, temp, level and flow. Flow data starts 01Nov2018 while the EC data starts 01Oct2018. 2019/20 Continuous Logger Data has no results for USGS/SW10. CR-1000- Campbell Scientific + CellVisor RTU logger installed for 2019/2020.		
64.a.v	BCGS (upstream at the Barney Creek gauge station);		1							1	3	Part Compliance (High)	2018/19 Continuous Logger Data 2019/20 Continuous Logger Data  SW04. 2018/19 Continuous Logger Data includes EC, pH and flow level. Flow data starts 15Nov2018 while the EC results are from 25Oct2018. 2019/20 Continuous Logger Data includes level, temperature, conductivity and depth from 20 December 2019. CellVisor RTU logger installed.		
64.a.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);		1							1	2	Part Compliance (moderate)	2018/19 Continuous Logger Data 2019/20 Continuous Logger Data  2018/19 Continuous Logger Data includes temp, EC, Salinity, nLF Cond, TDS and flow level. Flow data starts 01Nov2018 while the EC results are from 19 November. 2019/20 Continuous Logger Data states that SW12 has not been recovered yet. Note: 2018/19 Continuous Logger Data graph for SW12 shows flows plotted out of sync with the EC readings (e.g. the flow is not aligning with the X axis). SW12 is not included in the gauging stations register.		
64.b	devices must at a minimum measure electrical conductivity, and may measure additional parameters such as pH; and		1							1	4	Full Compliance	2018/19 Continuous Logger Data 2019/20 Continuous Logger Data  Operator advised that the monitoring devices measure EC, pH and flow and this was observed by the IM in 2018/19 Continuous Logger Data and 2019/20 Continuous Logger Data.		
64.c	the Operator must from 30 August 2017 include data from these devices in data submission under condition 7.		1							1	2	Part Compliance (moderate)	Correspondence 'MRM DPR Data Q2 2020' reviewed. The email was reviewed but the attached spreadsheet was not provided (i.e. email not provided as an outlook file, jpg only).  Operator advised that continuous logger data was included in the Q2 2020 submission but not in previous submissions within the reporting period. The letter notes that SW04, SW12 and SW10 do not have continuous EC data due to equipment failures during the wet season. Acknowledge that while submissions didn't occur in the audit period that Operator appear to have commenced these submissions.	OFI: Submit continuous flow monitoring quarterly in the required template to the Department as required by condition 7.	
65	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). In this regard:				1					1	4	Full Compliance	Letter - MRM Notification of Construction and Decommissioning of Monitoring Bores dated 01Apr2019 stated "The bores were constructed from 21 September to 12 October 2017 and 2 May to 7 August 2018 in accordance with the Minimum construction requirements for water bores in Australia published by the National Uniform Drillers Licensing Committee (third edition, February 2012)."	OBS: Develop a groundwater bore construction procedure to address conditions 65.a, 65.b and 65.c and reference the National Uniform Drilling Licensing Committee (NUDLC) requirements.	

2019 Authorisation Condition No.		ASPECT										Score	Compliance Level	Evidence	Comments
Condition/Requirement		Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
65.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 Operational Performance Report;				1					1	3	Part Compliance (High)	<p>MRM keeps bore logs centrally, and they are provided in the EMR 2019-2020 in Appendix V, 2019 Hydrogeological Drilling and Field Campaign Appendix A and in the OPR 2018-2019 in Appendix.</p> <p>Sighted a bore hole construction log for locations at the mine, TSF and Bing Bong.</p> <p>MRM Notification of Construction and Decommissioning of Monitoring Bores dated 01Apr2019</p> <p>Note the June 2019 version of the Authorisation (Condition 56), December 2018 version of the Authorisation (Condition 52) and July 2018 version of the Authorisation (Condition 50), that were relevant during the audit period, required submission of logs to the Minister within 30 days of completion. A letter/email dated 01Apr2019 did a reconciliation for bores constructed including in 2018 and therefore was not submitted within 30 days, which was required by the condition at the time.</p>	<p>June 2019 version of the Authorisation that was relevant during the audit period included the below conditions:</p> <p>56.a construction logs must be provided to the Minister within 30 days of completion of construction;</p> <p>56.b bore location coordinates in GDA 94 format must be provided to the Minister within 30 days of completion of construction;</p> <p>An OFI was not prepared for this part compliance as the condition in the most recent Authorisation in the audit period was fulfilled.</p>	
65.b	logs of maintenance activities must be kept available to the Minister upon request; and				1					1	4	Full Compliance	<p>Sighted Bore Audit File for 2019 Bore Audit.</p> <p>No Specific maintenance program. However there was a bore audit undertaken in 2019 checking bore holes were in working order Sighted Bore Audit File. 171 Bores - falling head test, camera test, water quality, bore condition.</p>		
65.c	logs of bore decommissioning activities must be kept and available to the Minister on request and reported in the Operator's Annual Operational Performance Report.				1					1	4	Full Compliance	<p>Correspondence 'MRM Notification of planned decommissioning of monitoring bores (July 2019)'. Decommissioning activities are reported in the EMR 2019-2020 (Section 4.3.2 and 2019 Hydrogeological Drilling and Field Campaign)</p> <p>Sighted bore decommissioning log. Sighted PRO 2200038 - Decommissioning of Groundwater Monitoring Bore Procedure.</p> <p>Decommissioned bore log</p> <p>Decommissioned log GW089S and D</p> <p>MRM Notification of Construction and Decommissioning of Monitoring Bores 1 April 2019</p> <p>MRM Notification of planned decommissioning of monitoring bores (July 2019)</p> <p>Location of the Decommissioned, Extended and Damaged Bores on the 2019 NOEF included in EMR 2019-2020.</p> <p>Note the June 2019 version (Condition 56), December 2018 version (Condition 52) and July 2018 version (Condition 50) of the Authorisation, required notification to the Minister in writing of proposed decommissioning and provision of logs of decommissioning activities within 30 days of completion of decommissioning.</p> <p>An email dated 17Jul2019 was submitted to the Department advising that Operator intended to decommission monitoring bores. An email/letter of submission of decommissioning logs to the Department was provided dated 01Apr2019. This includes decommissioning of one bore from November 2018 and so is not within 30 days of completion of decommissioning. These are minor non-conformances given that the condition has changed to the requirement to include in the annual Operational Performance Report.</p>	<p>Unable to locate section on decommissioned bores in OPR 2018-2019 (unnecessary as this condition only required reporting logs of bores decommissioning activities in the OPR from August 2019).</p> <p>June 2019 version of the Authorisation that was relevant during the audit period included the below conditions:</p> <p>56.d. if bores are subject to mining activities that will destroy or damage the bore, the Operator must notify the Minister in writing of the proposed decommissioning, and then must ensure the bores are decommissioned before the commencement of the relevant mining activities; and</p> <p>56.e. logs of decommissioning activities must be kept and provided to the Minister within 30 days of completion of decommissioning.</p>	

2019 Authorisation Condition No.		ASPECT										Score	Compliance Level	Evidence	Comments
Condition/Requirement		Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
66	The Operator must amend the MMP to include a livestock management plan clearly detailing how the ongoing exclusion of cattle from the Exclusion Area will be managed and monitored. The plan is to include monitoring schedules and remedial actions should monitoring detect cattle within the Exclusion Area, it should also detail the staff member or position responsible for ensuring compliance with the plan.									1	4	Full Compliance	<p>April 2017 to April 2018 Cattle Management Plan provided.</p> <p>Advised by the Operator inspection of exclusion fencing undertaken weekly and that the current practice is to use a helicopter every month to check the fence.</p> <p>The April 2018 Cattle Management Plan Figure 3 shows the cattle fence and electric fence surrounding the site (47km of fence), muster yard and lick blocks. Fence maintenance is included in Section 3.1.2. Fences and gates are inspected weekly with maintenance work undertaken as required. The fence will be replaced every 10 years.</p> <p>Section 5 includes responsibilities for verifying that actions are undertaken as described in the management plan by the Senior Rehabilitation Advisor and communicating roadblocks to compliance by the Manager - Environment, Safety &amp; People and Senior Rehabilitation Advisor.</p> <p>Section 3.2 States opportunistic cattle monitoring is undertaken weekly during the wet season whilst a helicopter is undertaking other work at site. All cattle sightings are reported to the Rehabilitation team and sightings are recorded in the Cattle Register. Mustering undertaken approximately every 6 weeks in the dry season.</p> <p>EMR 2019-2020 Table 11 states "Maintenance of the cattle exclusion fence was undertaken during the reporting period in accordance with the Cattle Management Plan." Section 3.11.5 "weekly routine fence inspections identifying sections requiring maintenance. Maintenance and repairs were completed as soon as practicable once a need was identified ..."</p>	Sighted September 2019 Cattle Management Plan (not approved by the regulator during the audit).	
67	The Operator must remove all livestock and undertake all necessary actions or works to ensure the permanent exclusion of cattle from the Exclusion Area within MLN 1121, MLN 1122, MLN1123 and MLN1124.					1					4	Full Compliance	<p>Sighted responsibilities in the Cattle Management Plan.</p> <p>April 2018 Cattle Management Plan provided.</p> <p>Advised by the Operator that they have yards on site that the cattle can be yarded into in the event that they are found on the lease. Muster is completed once a month. Fences were all replaced the last two years due to degradation.</p> <p>EMR 2019-2020 Section 3.11.5 "In accordance with the current Cattle Management Plan, 11 cattle muster events were undertaken to maintain a cattle exclusion area surrounding mining operations. Cattle musters are scheduled for six-week intervals, or within seven days of cattle being sighted within the cattle exclusion area." Table 18 showed the details of the cattle sightings and mustering.</p>		
68	The Operator must erect and maintain warning signage that is permanent and weatherproof and contains specific wording agreed to by the Chief Health Officer of the Northern Territory. Warning signage must be erected at appropriate distances and frequency along the waterway, and as a minimum be located at all access points, including but not limited to crossings, vehicle tracks and walking tracks. Warning signage must be maintained along the length of:								1		4	Full Compliance	<p>The following files were provided:</p> <ul style="list-style-type: none"> <li>- Warning Signage Register 2019 (dated: 02Jul2019)</li> <li>- Attachment 1_Letter to DME regarding warning signage (dated: 04Feb2015).</li> </ul> <p>Warning Signage Register 2019 provided showed photos of no unauthorised entry signage but not for all locations required by this condition. Operator Warning Signage photos (memo dated 11Nov2020 outside the audit period) viewed confirming no access signage is in place in all locations. Letter dated 04Feb2015 to Chief Health Officer from Operator advising of the agreed wording to be used on signage.</p>		
68.a	Barney Creek downstream to its junction with the McArthur River;								1		4	Full Compliance	<p>The following files were provided:</p> <ul style="list-style-type: none"> <li>- Warning Signage Register 2019 (dated: 02Jul2019)</li> <li>- Attachment 1_Letter to DME regarding warning signage (dated: 04Feb2015).</li> </ul>	68a - Location 40	
68.b	Barney Creek upstream to a point a short distance upstream of where the Carpentaria Highway crosses Barney Creek;								1		4	Full Compliance	<p>The following files were provided:</p> <ul style="list-style-type: none"> <li>- Warning Signage Register 2019 (dated: 02Jul2019)</li> <li>- Attachment 1_Letter to DME regarding warning signage (dated: 04Feb2015).</li> </ul> <p>Warning Signage Register 2019 provided showed photos of no unauthorised entry signage.</p>	68b - Locations 7, 8, 9	
68.c	Surprise Creek to approximately the location of SW29; and								1		4	Full Compliance	<p>The following files were provided:</p> <ul style="list-style-type: none"> <li>- Warning Signage Register 2019 (dated: 02Jul2019)</li> <li>- Attachment 1_Letter to DME regarding warning signage (dated: 04Feb2015).</li> </ul> <p>Warning Signage Register 2019 provided showed photos of no unauthorised entry signage.</p>	68c - Location 17	
68.d	Bing Bong shipping channel and in the immediate area surrounding the shipping channel and the swing basin.								1		4	Full Compliance	<p>The following files were provided:</p> <ul style="list-style-type: none"> <li>- Warning Signage Register 2019 (dated: 02Jul2019)</li> <li>- Attachment 1_Letter to DME regarding warning signage (dated: 04Feb2015)</li> <li>- Warning Signage Inspection 2020 (outside audit period).</li> </ul>	Signage is located at each entry point to the BBLF.	
69	For the purposes of managing dust, to the satisfaction of the Minister:														



Authorisation Compliance Workbook - Operator		ASPECT											Score	Compliance Level	Evidence	Comments	
2019 Authorisation Condition No.	Condition/Requirement	Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting							
69.a	the Operator must employ dust mitigation and monitoring measures at the Mine and in the course of all mining activities which generate dust, to minimise dust emission and impact on the Receiving Environment;	1								1	4	Full Compliance	Sighted Water Cart Procedure PRO 3300011: Refer 6.3.9.  Refer Air Quality Management Plan (2020). 2017 version is in place at present until 2020 version is approved and put in place.  17 dust deposition monitors/gauges at the mine (more gauges planned in 2020). 6 at Bing Bong Loading Facility. The monitoring devices speciate the dust and contaminants landing at a site to identify higher risk locations.				
69.b	If dust is entering the Receiving Environment resulting in or having the potential to cause environmental harm the Operator must undertake works or change its systems or practices to reduce dust to levels which no longer cause potential or actual environmental harm; and	1									4	Full Compliance	Air Quality Management Plan (2017) Dust monitoring criteria and response actions described in Table 7-2 (Visual Dust Triggers and Associated Actions) and Table 9-1 (Performance Indicators/Trigger Levels and Responses - The Mine Site (year 2017)).  The Operator advised that an example of a system change in the dust monitoring was that dust deposition data was analysed to trace proportion of lead and zinc back to the source to implement targeted control solutions at the source.	SUCCESS: Continuous improvement to detect where dust from mining activities originates through additional dust deposition monitors which measure the proportion of lead and zinc to trace dust back to sources and targeting of control solutions at the source.			
69.c	Any dust suppressant must be suitable for the location where it is to be used.	1									4	Full Compliance	2019/20 Site Water Balance for the McArthur River Mine Section 5.5.3  MRM advised that Dust suppression only occurs in operational areas. A sensitive area for dust management is Barney Creek Bridge. MRM advised "Refer to 2019/20 Site Water Balance for the McArthur River Mine Section 5.5.3. The water cart quickfill tank is filled with water from Open Pit Pete's Pond (OP PP) water. OP PP primarily collects water from the underground void, and is typically Class 5/6." Review of the 2019/20 Site Water Balance for the McArthur River Mine (Table 3.2 and 3.3) and Water Management Plan Plate 8 shows that outflows to water cart (dust suppression) were from OP PP (class 5), Mill OSD (class 5) and TSF WMD (class 4) for 2018/2019 (Table 3.2 and 3.3).	OFI: Optimise use of suitable quality water, potentially target better than class 5 water, for dust suppression in more sensitive locations (e.g. near to waterways).  Note: EMR 2019-2020 Table E52 indicates that potential dust impacts have been identified and there are documented measures to address these in the 2020-2021 reporting period including trials of dust suppression binders/additives for watering of haul roads.  OBS: Any trials should include an assessment of the suitability of these dust suppressants for the proposed location of use.			
70	For the purposes of managing chemicals and flammable or combustible liquids:											-					
70.a	all hazardous chemicals, toxic substances, gases and dangerous goods associated with the Mine must be stored and handled in accordance with the current Australian Standard where such is applicable, and the laws of the Northern Territory; and									1	3	Part Compliance (High)	Multiple hazardous goods documents but no overarching hazardous goods procedure available. Sighted Hazardous Chemical Procedure: PRO2600003 511-0184_19089-ME-CAL-001_B - 100 kL Tank [design study on the chemical tank in PbOx area to determine if the tank was suitable to store caustic solution]. MET-TECH-SPEC-Acid Storage Tanks Design Report [independent inspection of the Sulphuric Acid storage tanks].  MRM advised that they comply with Australian Dangerous Goods Code for transport and labelling and that hazardous material storage is in accordance with the NT WHS regulations. Design Check Report for Acid Tanks May 2015 had the various Australian Standards as being used in carrying out the design and check of the Acid tanks including AS3780:2008 Storage and Handling of Corrosive substances.	OFI: Audit the storage, handling and management of chemicals, toxic substances, gases, dangerous goods and flammable or combustible liquids to demonstrate compliance with Australian Standards and NT legislation.			
70.b	the Operator must 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 and includes regular integrity testing to ensure loss of containment or failure of the tanks does not occur.		1		1					1	4	Full Compliance	Sighted 2019-2020 works order for thickness testing for tanks and pipelines. MRM advised storage has a maintenance schedule in accordance with the dangerous goods legislation with reference to the relevant Australian Standards.  Leach Tank Inspection_Feb 19 [internal inspection on the PbOx leaching tanks during the recent concentrator shutdown]. Bulk Chemical Storage Audit [Work order export for recent internal inspections of bulk storage tanks].	Work orders are automatically generated to address the thickness. MRM cannot provide a screenshot of ELLIPSE to show how frequent the work orders are. MRM provided a snapshot of all the recent completed work orders.  OFI: Document the bulk storage tanks maintenance schedule to demonstrate compliance with Australian Standard/s and NT legislation.			
<b>INDEPENDENT MONITORING ASSESSMENT CONDITIONS</b>																	
71	These conditions may be cited as the "McArthur River Mine – Independent Monitoring Assessment Conditions".												-		These IM conditions are not relevant to the Operator.		
72	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.												-		These IM conditions are not relevant to the Operator.		
73	The Department will engage an Independent Monitor to undertake the independent monitoring assessment.												-		These IM conditions are not relevant to the Operator.		
74	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.									1	4	Full Compliance	MRM has participated fully in the compliance audit interviews and responded to all requests for supporting information in addition to undertaking their obligations and statutory responsibilities in relation to the mine.				
75	The Independent Monitor will:												-		These IM conditions are not relevant to the Operator.		

2019 Authorisation Condition No.	Condition/Requirement	ASPECT										Score	Compliance Level	Evidence	Comments
		Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
75.a	monitor the environmental performance of the Mine by reviewing:												-		These IM conditions are not relevant to the Operator.
75.a.i	environmental assessments and monitoring activities undertaken by the Operator; and												-		These IM conditions are not relevant to the Operator.
75.a.ii	environmental assessments and audits undertaken by the Department; and												-		These IM conditions are not relevant to the Operator.
75.b	report to the Operator and the Department any urgent issues requiring investigation and reporting.												-		These IM conditions are not relevant to the Operator.
76	The Independent Monitor will not review:												-		These IM conditions are not relevant to the Operator.
76.a	Mine safety; or												-		These IM conditions are not relevant to the Operator.
76.b	social issues arising from the operation of the Mine in the McArthur River Region.												-		These IM conditions are not relevant to the Operator.
77	The Department will engage an Independent Monitor in accordance with its procurement processes.												-		These IM conditions are not relevant to the Operator.
78	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 have the necessary expertise, relevant												-		These IM conditions are not relevant to the Operator.
79	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:												-		These IM conditions are not relevant to the Operator.
79.a	the conditions of tendering; and												-		These IM conditions are not relevant to the Operator.
79.b	the scope of services; and												-		These IM conditions are not relevant to the Operator.
79.c	the assessment criteria; and												-		These IM conditions are not relevant to the Operator.
79.d	the conditions of contract.												-		These IM conditions are not relevant to the Operator.
80	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.										1	4	Full Compliance	The Operator participated in the evaluation and selection of the IM including the proposals and budgets and appointment of the IM.	
81	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.												-		These IM conditions are not relevant to the Operator.
82	The terms of engagement of the Independent Monitor may include the following:												-		These IM conditions are not relevant to the Operator.
82.a	a period of engagement between three and five years;												-		These IM conditions are not relevant to the Operator.
82.b	a statement acknowledging that the Operator is responsible for the costs of the Independent Monitor;												-		These IM conditions are not relevant to the Operator.
82.c	a warranty by the Independent Monitor that it will:												-		These IM conditions are not relevant to the Operator.
82.c.i	act independently of the Department, the Operator, the Minister and any other person; and												-		These IM conditions are not relevant to the Operator.
82.c.ii	act honestly, reasonably and with the degree of professional care, knowledge, experience, skill and diligence which may reasonably be expected; and												-		These IM conditions are not relevant to the Operator.
82.c.iii	act within the time prescribed under these conditions, the terms of engagement, or where no time is prescribed, within a reasonable time; and												-		These IM conditions are not relevant to the Operator.
82.c.iv	immediately notify the Department in writing upon becoming aware of the existence or possibility of a conflict of interest;												-		These IM conditions are not relevant to the Operator.
82.d	an obligation on the Independent Monitor to keep all information provided to the Independent Monitor confidential.												-		These IM conditions are not relevant to the Operator.
83	If the Independent Monitor requires an indemnity, the Operator must enter into a binding agreement providing a reciprocal indemnity to the Department.										1	N/A	Not Applicable	None was required.	
84	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.												-		These IM conditions are not relevant to the Operator.



2019 Authorisation Condition No.		ASPECT											Score	Compliance Level	Evidence	Comments
Condition/Requirement		Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting						
85	The Operator and the Department must not interfere or attempt to influence the Independent Monitor in its assessment of environmental performance under these conditions.									1	4	Full Compliance	MRM has participated fully in the compliance audit interviews and responded to all requests for supporting information without interfering or attempting to influence the IM.			
86	The Operator and the Department must each:												-			
86.a	cooperate with the Independent Monitor; and									1	4	Full Compliance	MRM has participated fully in the compliance audit interviews and responded to all requests for supporting information.			
86.b	provide all necessary information and documents within their possession, custody or control to the Independent Monitor; and									1	4	Full Compliance	MRM has participated fully in the compliance audit interviews and responded to all requests for supporting information.			
86.c	procure for the Independent Monitor access to such premises owned, leased, or licensed by it as may be reasonably necessary,									1	4	Full Compliance	Task 2 mine site familiarisation visit March 2020.			
86.d	to enable the Independent Monitor to undertake its assessment of environmental performance under these conditions.									1	4	Full Compliance	MRM has participated fully in the compliance audit interviews and responded to all requests for supporting information.			
87	The Independent Monitor must engage with the Operator, the Department and the Community in undertaking the independent monitoring assessment.												-	These IM conditions are not relevant to the Operator.		
88	If the Independent Monitor identifies an issue it considers requires urgent investigation and reporting:												-	These IM conditions are not relevant to the Operator.		
88.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												-	These IM conditions are not relevant to the Operator.		
88.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										N/A	Not Applicable		The IM has not identified an issue it considers requires urgent investigation and reporting within the audit period.		
88.c	the Department may, where appropriate, advise the Operator and the Independent Monitor of action the Department proposes to take; and												-	These IM conditions are not relevant to the Operator.		
88.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										N/A	Not Applicable		The IM has not identified an issue it considers requires urgent investigation and reporting.		
88.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												-	These IM conditions are not relevant to the Operator.		
88.f	the Operator and the Department must facilitate the Independent Monitor's investigation and report.									1	N/A	Not Applicable		The IM has not identified an issue it considers requires urgent investigation and reporting.		
89	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.												-	These IM conditions are not relevant to the Operator.		
90	The Independent Monitor must prepare and provide a report:												-			
90.a	Annually to the Minister to assist with the review of the Mining Management Plan; and												-	These IM conditions are not relevant to the Operator.		
90.b	on request by the Minister.												-	These IM conditions are not relevant to the Operator.		
91	The Minister must provide a report received from the Independent Monitor to the Operator and the Department within 14 days of receiving the report.												-	These IM conditions are not relevant to the Operator.		
92	The Independent Monitor must prepare an additional report in a form suitable for distribution to the Community.												-	These IM conditions are not relevant to the Operator.		
93	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.									1	1	N/A	Not Applicable	The IM is aware that the understanding from the Operator is that the report will be made publicly available.		
94	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.									1	1	N/A	Not Applicable	This is a future requirement following completion of the report.		

2019 Authorisation Condition No.	Condition/Requirement	ASPECT											Score	Compliance Level	Evidence	Comments	
		Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting							
95	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 75 b which are the responsibility of the Department.												1	4	Full Compliance	The Operator participated in the evaluation and selection of the IM including the proposals and budgets and appointment of the IM.	
96	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.														-		These IM conditions are not relevant to the Operator.
97	The Operator must pay an amount notified in accordance with condition 96 within 7 days of receiving such notice.													N/A	Not Applicable		No relevant IM invoices in the audit period.
98	If the Operator disputes a notice provided by the Department under condition 96:														-		
98.a	the Operator must pay the amount specified in the notice in accordance with condition 97; and													N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
98.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													N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
98.c	the Chief Executive of the Operator and the Chief Executive of the Department must meet within 5 working days to resolve the dispute.													N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
99	If there is a dispute (other than a dispute mentioned in condition 98) 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 5 working days to resolve the Dispute.													N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
100	If the Chief Executive of the Operator, the Chief Executive of the Department and the Independent Monitor are unable to resolve a Dispute within 10 working days of meeting in accordance with condition 99, the Operator and the Department may agree to the appointment of an independent party to assist in the resolution of the Dispute.													N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
101	If, within 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.													N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
102	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.													N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
103	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.													N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
104	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.													N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
105	The Operator and the Department must:														-		
105.a	Bear their own costs of resolving the Dispute under this condition; and													N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
105.b	Bear equally the costs of any independent party engaged.													N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
<b>OVERBURDEN MANAGEMENT PROJECT</b>																	
106	The operator must ensure activities related to the McArthur River Overburden Management Project are implemented in accordance with:														-		Future Item. The OMP has not commenced on the basis that MMP is not yet approved (based on the audit period). MMP approval granted 13Nov2020.

Authorisation Compliance Workbook - Operator		ASPECT										Score	Compliance Level	Evidence	Comments
2019 Authorisation Condition No.	Condition/Requirement	Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
106.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); and							1				N/A	Not Applicable		Future item. EIS has a commitments chapter. The OMP has not been approved so it is not possible to audit against the commitments. Future item.
106.b	Recommendations in the NT EPA Assessment Report 86, where they are approved under an MMP, as defined in Condition 1.1 of the Authorisation. If there is any inconsistency between the above documents, the most recent authorisation shall prevail to the extent of any inconsistency.							1				N/A	Not Applicable		Future item. The OMP has not commenced on the basis that MMP is not yet approved (based on the audit period). MMP approval granted 13Nov2020.
107	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, in accordance with clause 14A of the Environmental Assessment Administrative Procedures 1984.											N/A	Not Applicable		Future item.
108	Within 18 months of authorisation[1] of the Overburden Management Project, the Operator must submit a plan to the Department for review, that:											N/A	Not Applicable		Future item. The OMP has not commenced on the basis that MMP is not yet approved (based on the audit period). MMP approval granted 13Nov2020.
108.a	Enables measurement of total loads of lead and zinc and is consistent with requirements of Condition 117;		1			1				1	1	N/A	Not Applicable		Future item.
108.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 38.c), taking into account seasonal variations in rainfall, and subject to future annual load calculations;		1			1				1	1	N/A	Not Applicable		Future item.
108.c	includes recommendations and outcomes arising from audits of loads by the Independent Monitor; and										1	N/A	Not Applicable		Future item.
108.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 Adaptive Management Plan (Condition 131).		1			1				1	1	N/A	Not Applicable		Future item.
sub 108	Unless otherwise agreed in writing by the Department. The plan, once approved by the Department must be implemented.											N/A	Not Applicable		Future item.
109	Within 18 months of authorisation of the Overburden Management Project, the Operator must submit a plan to the Department for review, that shall include:											N/A	Not Applicable		The OMP has not commenced on the basis that MMP is not yet approved (based on the audit period). MMP approval granted 13Nov2020.
109.a	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 117; and		1			1				1	1	N/A	Not Applicable		Future item.
109.b	a commitment that creeks on the mine site to show long-term improving trends in water quality within 20 years after cessation of mining.		1			1				1	1	N/A	Not Applicable		Future item.
sub 109	The plan, once approved by the Department must be implemented. The relevant findings from the plan must be incorporated into the Adaptive Management Plan (AMP).										1	N/A	Not Applicable		Future item.
110	Within 18 months of authorisation of the Overburden Management Project, the Operator must calculate contaminant loads and contaminant concentrations entering creeks and the McArthur River using system modelling.		1			1						N/A	Not Applicable		Future item.
sub 110	The modelling must use suitable site-specific data collected as part of Condition 117 and be subject to review by the relevant independent panel at three year intervals. Specific assumptions to be tested include but are not limited to:		1			1					1	N/A	Not Applicable		Future item. Refers to the independent panels review which do not yet exist. The department has opted to start with the community reference group as priority, followed by the technical panels.
110.a	groundwater flow paths; and					1					1	N/A	Not Applicable		Future item.
110.b	attenuation of metals from mine-derived wastes		1			1	1				1	N/A	Not Applicable		Future item.

Authorisation Compliance Workbook - Operator		ASPECT											Score	Compliance Level	Evidence	Comments
2019 Authorisation Condition No.	Condition/Requirement	Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting						
sub 110	The Operator must provide a written response to the Department, if an independent technical panels, required under Condition 113, review of the models and modelling outputs, and the data collection programs that informed the model development include recommendations and/or improvements. All relevant outputs must be used to inform and update the Adaptive management Plan.		1		1	1					1	N/A	Not Applicable		Future item.	
111	From the date of this approval, an independent environmental audit of the Quality Assurance (QA) and Quality Control (QC) procedures and waste rock identification and handling performance must be undertaken at intervals of every three years.							1			1	N/A	Not Applicable		Future item: Due 2022.	
sub 111	The results of the audit are to be provided to the Department within 6 weeks and to the relevant independent panel. 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.										1	N/A	Not Applicable		Future item.	
112	From the date of this approval, new areas of the NOEF foundation development (i.e. areas at base level) that do not currently contain PAF wastes must include a compacted clay layer (CCL) or, an engineered low permeability liner, of at least 0.5m thickness and maximum saturated hydraulic conductivity of 1 x 10 <sup>-9</sup> metres per second, above which future PAF wastes are to be stored.										1	4	Full Compliance	NOEF Central West Phase Design, Construction and Operations Manual (MIN-TEC-PLN-1000-0002). NOEF Central East Alpha Stage Complete Design Report (April 2019). Refer to Section 6.1.1.1  Section 2.5.2 of EMR provides information around the quantity of samples taken including permeability for the basal clay liner and that basal CCL development continued in CW Charlie. Section 9.5.2 of NOEF Central West Phase Design, Construction and Operations Manual Table 20 includes the Required properties of basal clay liner after compaction of hydraulic conductivity of 1 x 10 <sup>-9</sup> metres per second. Section 6.2 This base will have a 500 mm thick CCL for stages Alpha and Bravo. Section 9.5.1 Quality assurance shall be undertaken by the Survey Department to ensure that a minimum 0.5m thickness is achieved throughout for the clay liner for the basal CCL. NOEF Central East Alpha Stage Complete Design Report. Refer to Section 6.1.1.1 discusses the in-situ foundations of Central East will have a lower permeability than the minimum design criterion of 0.5 m thick engineering basal CCL at 10 <sup>-9</sup> metres per second. New areas of the Basal CCL will target performance equivalent or better to 0.5 m of CCL with a maximum saturated hydraulic conductivity of 10 <sup>-9</sup> m/s.		
113	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 in accordance with the relevant NT EPA recommendation.		1		1			1				N/A	Not Applicable		Future item. Must be administered by the Department to remain independent of MRM. MRM will provide the funding and feedback where applicable. Future item as funding has not yet been provided.	
114	Within 12 months 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:		1		1	1						N/A	Not Applicable		Future item. The OMP has not commenced on the basis that MMP is not yet approved (based on the audit period). MMP approval granted 13Nov2020.	
114.a	controls seepage to the Barney Creek diversion channel and the McArthur River		1		1	1					1	N/A	Not Applicable		Future item.	
114.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;		1		1	1					1	N/A	Not Applicable		Future item.	
114.c	facilitates achieving requirements of Conditions 108 and 109.		1		1	1					1	N/A	Not Applicable		Future item.	
sub 114	The Operator must write to the Department responding to any comments received from the NOEF independent panel on the report. The report, once approved by the Department must be implemented by the nominated timeframes.		1		1	1						N/A	Not Applicable		Future item.	
115	Within 24 months 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:							1				N/A	Not Applicable		Future item. The OMP has not commenced on the basis that MMP is not yet approved (based on the audit period). MMP approval granted 13Nov2020.	

2019 Authorisation Condition No.		Condition/Requirement	ASPECT										Score	Compliance Level	Evidence	Comments
			Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
115.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; and									1	1	N/A	Not Applicable		Future Item. Success: Operator has commenced the cover system trial early with the Department's approval, enabling several years of monitoring and analysis prior to the formal commencement of the condition.
115.b		include implementation of trials on rehabilitated stages of the NOEF									1	1	N/A	Not Applicable		Future Item.
sub 115		All relevant performance parameters must be monitored, including but not limited to: slope stability during extreme events cover performance as a result of heat effects tolerance of the geosynthetic liner to expected differential settlement veracity of cover longevity predictions likely long-term maintenance requirements. Reporting of trial results and monitoring outcomes shall be provided within three years from the plans submission, and 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.  The plan, once approved by the Department must be implemented. The relevant outcomes of trials and monitoring must be used to inform the Adaptive Management Plan and closure planning for the mine.									1	1	N/A	Not Applicable		Future Item.
116		The Operator must submit a strategy to the Department within five years of authorisation of the Overburden Management Project that details the long-term disposal management of tailings within/ into the mine pit void, submerged under a suitable depth of pit water. The plan must:									1	1	N/A	Not Applicable		Future item. Future proposal to place tailings in the pit void following reprocessing of the tailings
116.a		include strategies on the tailings reprocessing and assessment of residual chemical contaminants that may likely impact on meeting the requirements of Condition 108; and									1	1	N/A	Not Applicable		Future Item.
116.b		be reviewed by the relevant independent panel.									1	1	N/A	Not Applicable		Future Item.
sub 116		The strategy, once approved by the Department must be used to develop a plan, 5 years prior to cessation of mining, for approval by the Department. Any requirement to vary the approved disposal strategy or plan must be:									1	1	N/A	Not Applicable		Future Item.
sub 116.a		Applied for in writing to the Minister;									1	1	N/A	Not Applicable		Future Item.
sub 116.b		Based on leading practice and site conditions / context;									1	1	N/A	Not Applicable		Future Item.
sub 116.c		Supported by the relevant independent panel; and									1	1	N/A	Not Applicable		Future Item.
sub 116.d		Notified to the NT EPA in accordance with Condition 107.									1	1	N/A	Not Applicable		Future Item.
117		Within 12 months of authorisation of the Overburden Management Project, the Operator must review and synthesise all available and relevant information to submit a revised water monitoring program/ 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. The plan must be able to allow assessment of compliance to Condition 108 and include sufficient detail to inform/develop/update the Adaptive Management Plan. The program/ plan, at a minimum must:		1								1	N/A	Not Applicable		Future Item. The OMP has not commenced on the basis that MMP is not yet approved (based on the audit period). MMP approval granted 13Nov2020.
117.a		quantify loads of lead and zinc entering the McArthur River each year;		1								1	N/A	Not Applicable		Future Item.
117.b		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 as low as is reasonably practicable;				1						1	N/A	Not Applicable		Future Item.

2019 Authorisation Condition No.		Condition/Requirement	ASPECT										Score	Compliance Level	Evidence	Comments
			Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
117.c		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.		1			1					1	N/A	Not Applicable		Future Item.
sub 117		The revised program/plan must:														Future Item.
sub 117.a		be prepared in consultation with the NT EPA;		1								1	N/A	Not Applicable		Future Item.
sub 117.b		be prepared in consultation with the relevant independent panel.		1								1	N/A	Not Applicable		Future Item.
sub 117		The plan, once approved by the Department must be implemented. Any variation and/or updates to the program/ plan (e.g.to maintain the currency of the monitoring network), must be undertaken in consultation with the relevant independent panel.		1								1	N/A	Not Applicable		Future Item.
sub 117		The results of the program must be reported annually to the Department and audited by the Independent Monitor every three years. The results of the program together with any audits/review findings must be published on the Operator's website.		1								1	N/A	Not Applicable		Future Item.
118		Within 18 months 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. The results of this program must be integrated with other relevant programs monitoring programs and management plans. The plan, once approved by the Department must be implemented.		1		1	1		1			1	N/A	Not Applicable		Future item requirement as not required until within 18 months of the OMP approval (approval occurred on 13Nov2020). Operator has commenced the Ecotoxicological program in 2019.  Success: Operator commenced the Ecotoxicological (ecotoxicology potential impact assessment and monitoring of receiving environment biota relevant to the McArthur River system) program ahead of approval of the 2020 MMP, enabling early monitoring and analysis of data prior to the formal commencement of the condition. Commitment within the OMP EIS and requirement of Authorisation; Aims to develop Site Specific Guideline Values (SSGVs) for downstream compliance, protection of on lease refuge pools and for mixing zone guidelines; Wet and dry season program to account for seasonal changes that can affect analyte toxicity e.g. hardness and dissolved organic carbon; Target analytes – determined through COPC review and generally consistent with the OMP EIS; Arsenic, cadmium, copper, lead, sulphate, thallium and zinc. Program design based on guidance from Australian and New Zealand Water Quality Guidelines (ANZG, 2018); Test water sourced from the McArthur River at SW07 upstream of the mine; Combination of acute and chronic tests with acute data to be converted to chronic data for derivation of GVs; 7 species for dry season and 9 species for wet season (3 wet season species sourced locally); and Program targets derivation of moderate reliability GVs for dry season conditions and high reliability GVs for wet season conditions.
119		Within 18 months of authorisation of the Overburden Management Project, the Operator must submit an aquatic ecosystem monitoring program to the Department for review, that provides improved understanding of aquatic ecosystems in the McArthur River from changing water flows, levels and quality, including available dry season habitat. The program must:		1			1					1	N/A	Not Applicable		Future item. The OMP has not commenced on the basis that MMP is not yet approved (based on the audit period). MMP approval granted 13Nov2020.
119.a		assess impacts of the mine on water levels in refuge pools/waterholes, upstream and downstream of the mine, including in the McArthur River diversion channel;		1			1					1	N/A	Not Applicable		Future Item
119.b		assess impacts of the mine on water quality in refuge pools/waterholes in the dry season; and		1			1					1	N/A	Not Applicable		Future Item
119.c		assess impacts of the mine on the health of aquatic biota in the McArthur River using non-lethal sampling methods.		1			1					1	N/A	Not Applicable		Future Item
sub 119		The program must be designed to be integrated with requirements of the Adaptive Management Plan (Condition 131 and Condition 132). The program, once approved by the Department must be implemented.		1			1					1	N/A	Not Applicable		Future Item



Authorisation Compliance Workbook - Operator		ASPECT											Score	Compliance Level	Evidence	Comments
2019 Authorisation Condition No.	Condition/Requirement	Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting						
120	At all times, the Operator must conduct works consistent with the Northern Territory Aboriginal Sacred Sites Act and valid Aboriginal Areas Protection Authority certificate (AAPA). 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.								1			4	Full Compliance	MRM maintains an AAPA artefact register and in 2019 there was an audit. MRM AAPA Certificate Compliance Report 2020 (draft) - Title Page and TOC provided.  Internal dig and clear certificates are required prior to any disturbance. Internal dig and clear procedure includes a community management relations check of AAPA certificates. Sighted Permit to Clear Operational Area FRM-2200001. While unable to review the MRM AAPA Certificate Compliance Report 2020 (draft), this could be provided to the Minister if requested.		
121	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 Minister for Resources, the Operator and the Minister for Tourism and Culture must be undertaken prior to seeking endorsement of the design.								1	1		4	Full Compliance	Fencing installed around a 50m buffer of archaeological sites MRM4 excluding all access to the area. Sighted archaeological site exclusion signage during site visit March 2020.		
122	Within six months of authorisation of the Overburden Management Project, the Operator must provide a report to the Minister, and AAPA or the Minister for Tourism and Culture (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 maybe affected by the Overburden Management Project.								1	1		N/A	Not Applicable		Future item. Submitted already and in progress with Minister.	
123	The Operator must develop or revise and submit an existing air quality plan within 12 months of this Authorisation to the Department for review, that monitors sulfur dioxide emissions at an appropriate location between the NOEF and sensitive receptors determined in consultation with NT EPA.	1							1	1		N/A	Not Applicable		Future item. Air Quality Management Plan (AQMP) was submitted as an appendix with the Mine Management Plan (MMP) 31Jan2020.	
sub 123	The monitoring plan must include 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. Evidence of consultation with the NT EPA must be provided at the time of the plan submission. The plan, once approved by the Department must be implemented. The results of the plan for each reporting frequency made available on the Operator's website and incorporated/updated/ revised, where relevant, with the Adaptive Management Plan. Initial monitoring results to be reported within 6 months of the plan being accepted by the Department.	1							1	1		N/A	Not Applicable		Future item. The OMP had not commenced in the audit period on the basis that the MMP was not approved at that time. Approval granted after the audit period in the latest Authorisation 13Nov2020.	
124	Within 24 months 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:		1			1						N/A	Not Applicable		Future item. The OMP had not commenced in the audit period on the basis that the MMP was not approved at that time. Approval granted after the audit period in the latest Authorisation 13Nov2020.	
124.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;		1			1						N/A	Not Applicable		Future item.	
124.b	include demonstrated evidence of consultation with NT EPA, on advice of the Chief Health Officer;		1			1						N/A	Not Applicable		Future item.	
124.c	detail public reporting of the monitoring results, including at appropriate locations in the Borroloola region; and		1			1			1	1		N/A	Not Applicable		Future item.	
124.d	include provisions for implementation and maintenance of signage at waterways at the MRM site in accordance with the requirements of Condition 68 until the risk of contamination from consumption of this aquatic fauna is negligible.		1			1						N/A	Not Applicable		Future item.	
125	The plan, once approved by the Department must be implemented Within 24 months of authorisation of the Overburden Management Project, the Operator must submit a plan to the Department for review, that outlines monitoring program for management of Largetooth Sawfish. The plan must:					1						N/A	Not Applicable		Future item. The OMP had not commenced in the audit period on the basis that the MMP was not approved at that time. Approval granted after the audit period in the latest Authorisation 13Nov2020.	
125.a	include a sampling strategy for Largetooth Sawfish that is non-lethal;					1						N/A	Not Applicable		Future item	

2019 Authorisation Condition No.		Condition/Requirement	ASPECT											Score	Compliance Level	Evidence	Comments
			Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting						
125.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 Largemouth Sawfish movement; and					1				1	N/A	Not Applicable		Future item		
125.c		include trigger levels for investigation and implementation of management measures.					1				1	N/A	Not Applicable		Future item		
sub 125		The plan, once approved by the Department must be implemented.					1				1	N/A	Not Applicable		Future item		
126		Within six months following the establishment of the required panels and groups, the Operator must in consultation with the relevant Independent Panels, Community Reference Group, custodians and traditional owners, develop environmental objectives for a Care and Maintenance Plan, and submit this to the Department for review.								1	1	N/A	Not Applicable		Future item. Panels not established in the audit period.		
sub 126		The environmental objectives must be used to develop a Care and Maintenance Plan in consultation with the Department within five years of authorisation of the Overburden Management Project.									1	N/A	Not Applicable		Future item. The OMP had not commenced in the audit period on the basis that the MMP was not approved at that time. Approval granted after the audit period in the latest Authorisation 13Nov2020.		
127		The Operator must facilitate an independent third-party assessment of the security for rehabilitation of authorised activities in the approved MMP as defined in Condition 1.1, to the satisfaction of the Department, and every 3 years thereafter if the security has been re-calculated or adjusted. The Operator must commission a qualified person within 3 months of the authorisation of the Overburden Management Project, whose appointment is to be accepted by the Minister. The first assessment of the security should occur within 6 months of acceptance of the qualified person by the Minister.									1	4	Full Compliance	Sighted the MRM Mine Rehabilitation Planning Rehabilitation Security Audit. Email dated 10Jul2020 with the subject McArthur River Mine Security - Independent Third-Party Assessment Evidence was provided in the form of an email between Operator and the Department that the Department accepted the qualified person (company).			
128		For every approved MMP and MMP amendment, the Operator must provide a revised copy of the approved document that removes commercially sensitive information and is suitable for publication on the Department's website, or provide written approval to make the complete documents publicly accessible.									1	4	Full Compliance	MMP created and provided a public version of the MMP dated 31Jan2020.			
129		The Operator must assist, as required, the Department to establish and operate a Community Reference Group in accordance with the relevant NT EPA recommendation.								1		4	Full Compliance	MRM provided CRG assistance in the form of suggested membership and funding.	Advised that DPIR are aiming to establish the CRG in early 2021.		
130		Within 18 months of authorisation of the Overburden Management Project, the Operator must undertake a synthesis of all environmental monitoring programs 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 (Condition 108). The revised monitoring programs must:		1			1				1	N/A	Not Applicable		Future item. The OMP had not commenced in the audit period on the basis that the MMP was not approved at that time. Approval granted after the audit period in the latest Authorisation 13Nov2020.		
130.a		use outputs generated for review and synthesis of water monitoring programs, as part of addressing Condition 117;		1			1				1	N/A	Not Applicable		Future item.		
130.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); and		1			1				1	N/A	Not Applicable		Future item.		
130.c		be incorporated in the AMP.		1			1				1	N/A	Not Applicable		Future item.		
131		Within 18 months of authorisation of the Overburden Management Project, the Operator must submit an Adaptive Management Plan to the Department, which includes the following key elements:									1	N/A	Not Applicable		Future item. The OMP had not commenced in the audit period on the basis that the MMP was not approved at that time. Approval granted after the audit period in the latest Authorisation 13Nov2020.		
131.a		clear, measurable environmental objectives for all significant environmental risks and potential impacts;									1	N/A	Not Applicable		Future item.		
131.b		measurable performance indicators to show that objectives are on target to be met;									1	N/A	Not Applicable		Future item.		
131.c		pre-determined triggers to warn of potential for performance indicators to be exceeded, as informed by monitoring;									1	N/A	Not Applicable		Future item.		
131.d		realistic and achievable contingency interventions to maintain performance indicators if triggers are consistently exceeded;									1	N/A	Not Applicable		Future item.		



2019 Authorisation Condition No.		Condition/Requirement	ASPECT										Score	Compliance Level	Evidence	Comments
			Air Quality (dust & sulphur dioxide, transport)	Surface Water (River, Creek, Artificial dams)	Marine Waters (Bing Bong, marine sediments)	Groundwater	Aquatic fauna (fish river)	Vegetation & Rehabilitation (terrestrial, diversion & NOEF)	Waste (general, mine rock, tailings)	Community (local indigenous & public)	Monitoring & Reporting					
131.e		clearly defined management measures/actions that are capable of being implemented in a timely way to meet performance indicators and environmental objectives;									1	N/A	Not Applicable		Future item.	
131.f		monitoring in accordance with relevant Recommendations in this Report to determine whether management measures are effective and to inform the need for adjustments to management measures or need for alternatives;									1	N/A	Not Applicable		Future item.	
131.g		a continual feedback system to inform appropriate actions to be initiated when triggered and environmental objectives are always being met;									1	N/A	Not Applicable		Future item.	
131.h		continual development of new management actions as required based on knowledge gained from experience at the site and elsewhere across industry.									1	N/A	Not Applicable		Future item.	
sub 131		The AMP must be reviewed by the Independent Monitor or an appropriately qualified, independent third party, and updated with requirements of the Community Reference Group (CRG) (once established under Condition 129), with all review findings and CRG input requirements to be provided to the Department for approval.									1	N/A	Not Applicable		Future item.	
132		Unless agreed otherwise in writing by the Department, the Adaptive Management Plan must:											-		Future item.	
132.a		clearly set out the required management objectives and performance indicators;									1	N/A	Not Applicable		Future item.	
132.b		provide clarity on the triggers for changes to management actions, and responsibility and evidentiary basis for decision-making;									1	N/A	Not Applicable		Future item.	
132.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;									1	N/A	Not Applicable		Future item.	
132.d		establish a process for adjusting triggers that includes the regulator;									1	N/A	Not Applicable		Future item.	
132.e		establish transparent monitoring, reporting and review requirements;									1	N/A	Not Applicable		Future item.	
132.f		establish processes to achieve transparency and stakeholder engagement in Adaptive Management Plan design and implementation that includes NT EPA, DEE and Community Reference Group; and									1	N/A	Not Applicable		Future item.	
132.g		set out the mechanism for periodic review by Independent Monitor, which must not exceed a frequency of every three years.  Any amendments to the AMP must be provided to the Department for re-approval.									1	N/A	Not Applicable		Future item.	
sub 132		Any amendments to the AMP must be provided to the Department for re-approval.									1	N/A	Not Applicable		Future item.	
133		The Operator must provide written notice to the Minister and to the NT EPA (under clause 14A of the Environmental Assessment Administrative Procedures 1984) where trends indicate performance indicators and environmental objectives will not or are unlikely to be met by implementing the Adaptive Management Plan.									1	N/A	Not Applicable		Future item.	

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN										Score	Compliance Level	Evidence	Comments		
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility							
<b>Authorisation 0059 (dated 15 August 2019), Audit period 01 April 2018 to 30 April 2020</b>																	
<b>DEFINITIONS</b>																	
1	In this document, unless the contrary intention appears:																Note that sub-conditions 1.a to 1.z are not listed as they are all definitions and are unable to be audited for compliance.
<b>INTERPRETATION</b>																	
2	In this document, unless the contrary intention appears:																Note that sub-conditions 2.a to 2.h are not listed as they are all interpretations and are unable to be audited for compliance.
<b>GENERAL</b>																	
3	Subject to any conditions contained in the Act and this document,[1] the Operator must comply with the commitments and activities contained in the MMP including the implementation of all systems referred to in the MMP.[2]	1															Assessed by evaluation of all other conditions.
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.	1															Assessed by evaluation of all other conditions.
<b>MINING MANAGEMENT PLAN AND REPORTING</b>																	
5	The mine site is to be developed and operated in accordance with relevant legislation e.g. Environment Protection and Biodiversity Conservation Act 1999, Territory Parks Wildlife and Conservation Act 2006 and Heritage Conservation Act 2011.	1															Assessed by evaluation of all other conditions.
6	The Operator must on 31 August 2017 and on each anniversary of that date (or such other date as nominated by the Operator and approved by the Minister), review the MMP and if necessary, amend the MMP.[1]	1															MMP is not always reviewed and amended as required (annually on the 31 August) with material changes in operational activities. Most recent MMP updated and submitted to DPIR on 31Jan2020.  PRO-2600069 Change Management Procedure provided, which includes the requirement for a risk assessment to be completed for "the introduction of significant change to existing systems, processes, or equipment". Change is defined in the Change Management Procedure as "Change is an addition, revision, deletion, modification or replacement of a non like-to-like nature to any aspect of the organisation..." and "Change is significant if it could potentially have a material impact on the achievement of objectives". Appendix I of the Change Management Procedure includes screen shots of the online change request forms that show prompts for if there are any HSEC and governance risks associated with the proposed changes and if the change will impact any licences, permits or statutory requirements. The management team will then make a decision on whether to go ahead and what controls will be required. This change management process demonstrates that the Operator considers if the MMP requires updating based on assessment of the significance of the proposed changes.  Insufficient evidence available at time of the audit.
7	The Operator must submit quarterly all environmental monitoring data[2] 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:																
7.a	surface water;	1															Sighted Q4 2018 Quarterly Monitoring Report 1810-1812. Provided email submission for Quarterly Monitoring Report 1810-1812 dated 08Feb2019. Included in the Quarterly Monitoring Report 1810-1812 submitted via email dated 08Feb2019. Performed as required.
7.b	groundwater;	1															Sighted Q4 2018 Quarterly Monitoring Report 1810-1812. Provided email submission for Quarterly Monitoring Report 1810-1812 dated 08Feb2019. Groundwater included in the Quarterly Monitoring Report 1810-1812 submitted via email dated 08Feb2019. Performed as required.
7.c	dust	1															Sighted Q4 2018 Quarterly Monitoring Report 1810-1812. Provided email submission for Quarterly Monitoring Report 1810-1812 dated 08Feb2019. PM <sub>10</sub> included in the Quarterly Monitoring Report 1810-1812 submitted via email dated 08Feb2019. Performed as required.

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN										Score	Compliance Level	Evidence	Comments	
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility						
7.d	soil;	1											3	Part Compliance (High)	Sighted Q4 2018 Quarterly Monitoring Report 1810-1812. Provided email submission for Quarterly Monitoring Report 1810-1812 dated 08Feb2019. Soil monitoring data was not reported quarterly nor via the template required by Condition 7 during the reporting period. Soil Monitoring Annual Report October 2019 - Environmental Monitoring Report - Appendix D (also titled: Soil Monitoring Report McArthur River Mine and Bing Bong Loading Facility May 2019 - April 2020 Rev Final - 001 dated 01Jul2020). Soil Monitoring Report McArthur River Mine and Bing Bong Loading Facility April 2018 - April 2019 Rev Final - 001 dated 12Jul2019. Monitoring data provided annually not quarterly and not in the prescribed format.	Soil Monitoring Annual Reports (attached to the OPR/EMR) were reviewed as evidence of monitoring being undertaken, and submitted to the DPIR.  Although the monitoring has been undertaken, this condition requires submission quarterly and in the required format, which has not occurred. A part compliance (high) has been scored on the basis of the administrative nature of the condition and the low level of environmental risk.  OFI: Submit all quarterly monitoring data inclusive of soil, sediment and internal transfers, to the Department in the required format.
7.e	sediments;	1											3	Part Compliance (High)	Sighted Q4 2018 Quarterly Monitoring Report 1810-1812. Provided email submission for Quarterly Monitoring Report 1810-1812 dated 08Feb2019. Fluvial Sediment monitoring data was not reported quarterly nor via the template required by Condition 7 during the reporting period. Appendix X - Fluvial Sediment Monitoring, 2018 (McArthur River Mining Fluvial Sediment Monitoring 2018 Revision 0 dated 04Dec2018) 2019 Monitoring of Metals/Lead in Fluvial Sediments & Aquatic Fauna Environmental Monitoring Report – Appendix L (also titled: MONITORING OF SELECT ANALYTES AND LEAD ISOTOPE RATIOS IN FLUVIAL SEDIMENTS, FISH, CRUSTACEANS AND MOLLUSCS OF THE LIMMEN, McARTHUR, AND ROBINSON RIVERS 2019 Rev 0 dated 25Feb2020) Monitoring data provided annually not quarterly and not in the prescribed format.	The Fluvial Sediment Monitoring Annual Reports (attached to the OPR/EMR) provided as evidence of monitoring being undertaken, and submitted to the DPIR. Note the fluvial sediment monitoring data was included in the same report as the Metals in Aquatic Fauna monitoring in the EMR 2020 reporting period.  Although the monitoring has been undertaken, this condition requires submission quarterly and in the required format, which has not occurred. A part compliance (high) has been scored on the basis of the administrative nature of the condition and the low level of environmental risk.  OFI: Submit all quarterly monitoring data inclusive of soil, sediment and internal transfers, to the Department in the required format.
7.f	gas; and	1											4	Full Compliance	SO <sub>2</sub> included in the Quarterly Monitoring Report 1810-1812 submitted via email dated 08Feb2019. Performed as required.	
7.g	water transfers and discharges (including dates, times and volumes).6	1											3	Part Compliance (High)	Limited evidence of this condition given not all water transfers are reported in the required format or quarterly.  Quarterly Monitoring Report 1810-1812 submitted via email dated 08Feb2019 had a tab for discharges records with the entry NIL.  Reviewed the Water Management Plan 31Jan2020 (Version 1.0) Appendix A (2019/20 Site Water Balance for the McArthur River Mine (0790-67-C1) Rev 1 dated 09Dec2019).	Water discharge data provided is in quarterly submissions. Operator advised that on-site water transfers have not been reported via data submissions required by Condition 7 given the large amount of data and validation required.  The 2019/20 Site Water Balance for the McArthur River Mine provides metered flow data in Figure 3.2 and Tables 3.1 to 3.4. This is generally annual data split into daily averages so not quarterly monitoring required by this condition.  OFI: Submit all quarterly monitoring data inclusive of soil, sediment and internal transfers, to the Department in the required format.  OFI DITT: Department may amend the condition to remove the requirement for the Operator to submit water transfer data quarterly given the large amount of data which is provided annually.
<b>SECURITY AND LEVY</b>																
8	The Operator must provide a security of \$519,728,466 in the form of cash or an unconditional bank guarantee to the Minister prior to undertaking any mining activities authorised by this Variation of Authorisations 0059-01 and 0059-02.[7]	1											4	Full Compliance	Sighted email 02May2019 DPIR Receipt Confirmation.	Bank Guarantee coupled with a levy.
9	The security provided for under condition 8 will be reassessed, and may be revised, following each assessment of an amended MMP. The Operator must provide the revised security amount in the form of cash or an unconditional bank guarantee to the Minister.	1											4	Full Compliance	Sighted MMP amendment (January 2019) email stating that bank guarantees were received (email 29Apr2019).	
10	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 that written notice.[8]	1											4	Full Compliance	DPIR Tax Invoice 20180822 Remittance_Advice_For_Past_Payment_For_A_Nominated_Supplier	Evidence of written notice of levy to be paid and remittance for same amount was provided. Operator advised that the 2019/20 levy is currently being processed, which is outside of the audit period.
<b>EXPLORATION</b>																
11	The Operator must ensure that:													-		

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments	
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility					
11.a	Works are undertaken in accordance with management systems detailed in Condition 1.1;							1			4	Full Compliance	Example provided for exploration on site. Geology team submit a dig and clear permit to relevant Operator departments (Environment, Survey, Community, etc) for approval especially on sensitive vegetation areas. Sighted permit to clear procedure MRMFRM220001 permit to clear operational area (4Jun2020). Sighted permit to clear procedure PRO2200033 which is frequently implemented as part of the operational activities.	A dig and clear permit is submitted prior to site visits by the geo team. The enviro team are required to check the permit against the MMP to ensure it is within the boundary specified and that the clearing isn't proposed to be more than what is entered into the security calculation.  Condition 1.1 is Sustainable Development Mining Management Plan 2013-2015 volumes 1 and 2 dated 03Mar2015 plus numerous amendments are considered throughout the conditions of the Authorisation. Generally a high level of compliance.	
11.b	An environmental management plan is in place that addresses chemical use/storage (e.g. hydrocarbons, drilling fluids), erosion and sediment control, dust and associated risks common for exploration works;							1			3	Part Compliance (High)	Sighted Drilling Pad Preparation and Remediation Procedure SPC-3100001.  Insufficient evidence available at time of the audit.	OFI: Update procedures for exploration activities to address Hazardous Material Storage and Erosion and Sediment Control.	
11.c	Rehabilitation must be undertaken for locations not needed for further use, including the submission of a rehabilitation report that includes details on proposed adjustment of total security as a result of the works, to the satisfaction of the Minister.							1			3	Part Compliance (High)	The IM was advised by the Operator that rehabilitation has occurred in limited areas including exploration and river diversion. No rehabilitation reports have been submitted to date.  Insufficient evidence available at time of the audit.	Rehabilitation occurs after exploration activities. Rehabilitation has occurred in the river diversion area. No rehabilitation has occurred on the NOEF. Currently awaiting approvals e.g. AAPA certificate. No reports have been prepared to adjust security as a result of the works. A rehabilitation trial on the mine site levy wall established plants in difficult location on a steep bank in 2020.  OFI: Prepare and submit a progressive rehabilitation report as required.	
<b>NON-MINERAL WASTE MANAGEMENT</b>															
12	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:														CWF site is designated and a detailed design has been completed. Operator needs AAPA approval to commence. MMP January 2020 states the CWF will be constructed in 2020. It is not mentioned in the EMR.
12.a	concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12, ensuring:		1								N/A	Not Applicable			Future item. To be reviewed in 2021.
12.a.i	Detailed designs follow the approved concepts for the facility (including 100 year ARI flood immunity, CCL and protective armour, drainage works and bio-security control). The detailed design must include design objectives that satisfies both engineering and environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives;		1								N/A	Not Applicable			Future item. To be reviewed in 2021.
12.a.ii	The detailed designs must include allowances for 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; and		1								N/A	Not Applicable			Future item. To be reviewed in 2021.
12.a.iii	The detailed designs must be reviewed and endorsed by an Independent Certifying Engineer (ICE) without limitation on responsibility and provided to the department prior to commencement of construction.		1								N/A	Not Applicable			Future item. To be reviewed in 2021.
13	An ICE must warrant and accept both the design and construction works, without limitation on responsibility:														Future item.
13.a	during all phases of construction (including at hold points) the ICE must be present at the CWF site to oversee and certify the works that they meet design specifications and approve re-commencement of construction at defined hold points;		1								N/A	Not Applicable			Future item. To be reviewed in 2021.
13.b	any material changes to the design during construction must be approved by the ICE;		1								N/A	Not Applicable			Future item. To be reviewed in 2021.
13.c	if the ICE wishes to use the Operator's project manager/resident engineer as an onsite representative then the ICE must agree that this does not diminish responsibility or liability for the project;		1								N/A	Not Applicable			Future item. To be reviewed in 2021.

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
13.d	the ICE must hold appropriate public and professional indemnity insurance to cover the scope of works associated with the CWF design and construction;		1								N/A	Not Applicable		Future item. To be reviewed in 2021.
13.e	at completion of the construction works the ICE must approve an "as-constructed" construction report that is to be submitted to the Department. The report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied; and		1								N/A	Not Applicable		Future item. To be reviewed in 2021.
13.f	the existing waste facilities must be decommissioned and rehabilitated, but only after an approval of rehabilitation plan by the Department. The rehabilitation plan must include details on proposed adjustment of total security as a result of the works.		1								N/A	Not Applicable		Future item. To be reviewed in 2021.
<b>REHABILITATION TRIALS</b>														
14	The Operator is authorised to undertake the following rehabilitation trials, in accordance with concepts defined in Condition 1.j.ii.12 and ensuring any contaminated runoff is contained with the water management circuit:											-		Future action. Test pads on the west side of the NOEF.
14.a	Construction Test Pads (CTP) on NOEF West stage;					1					4	Full Compliance	Mining Management Plan Amendment revision 0 dated 18Jan2019 Performed as required.	CTPs will be covered off in the 2019 MMP. 4.2.3.14 NOEF Rehabilitation discusses the NOEF rehabilitation trial to assess cover system constructability and longer-term performance. Figure 14 shows the location of the trial on the NOEF west stage.
14.b	PAF(RE) Cell and Cover System Performance on NOEF Southeast stage; and					1					4	Full Compliance	Mining Management Plan Amendment revision 0 dated 18Jan2019 Performed as required.	Construction has not yet been completed. Cover postponed until following the next wet season. Construction reports sighted demonstrating that the construction is underway. Figure 14 of MMP Amendment shows the location of the PAF(RE) Cell trial on NOEF South East stage .
14.c	Mine Levee revegetation.		1								N/A	Not Applicable		Proposed for later in 2020.
<b>WASTE ROCK MANAGEMENT</b>														
15	Waste rock is defined in Condition 1.z											-		
16	From the commencement of this variation to Authorisation Non-benign Waste is to be permanently placed:											-		

2019 Authorisation Condition No.		Condition/Requirement		DOMAIN								Score	Compliance Level	Evidence	Comments
				Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)				
16.a	above the 100 year ARI flood level, unless flood mitigation measures are provided consistent with the 2013-2015 MMP Amendment defined in Condition 1.1.ii.12 and relevant Detailed Designs submitted to the Department in accordance with the conditions of this variation of Authorisation, with the exception of PAF(RE);						1					4	Full Compliance	<p>OPR 2018 - 2019 Appendix B – MRM Commitments and Actions Register 2018-19 and EMR 2019-2020 Appendix B - 2019-2020 Reconciliation of Commitments and Actions "Parts of the NOEF base below the 1:100 year average recurrence interval (ARI) year flood level contain non-benign materials. MRM has committed to providing flood protection to these areas by developing:</p> <ul style="list-style-type: none"> <li>• suitable mitigation designs and schedules using updated flood predictions; and</li> <li>• NOEF designs by assessing options and assessment of risks."</li> </ul> <p>Implementation of this was demonstrated through:</p> <ul style="list-style-type: none"> <li>• for 2018-2019: "Construction works on flood barriers south of the Mine Infrastructure Area (MIA) and west of the South East Perimeter Runoff Dam (SEPROD) are completed. Designs for SEPROD to EPROD, and from EPROD to WPROD, are in final draft. These will be submitted once the OMP EIS is accepted."</li> <li>• for 2019-2020: "Refer to January 2020 MMP Section 4.2.3.12. The construction of flood levees around the NOEF are described in the NOEF MP and NOEF Construction and Design Guidelines (attached to NOEF MP). Temporary flood protection levees (20 year ARI) are proposed to be constructed, where required, to allow for the placement of non-benign material at the NOEF. Temporary levees will remain for a maximum two year period, at which time, will be upgraded to a permanent flood protection levee (100 year ARI)"</li> </ul> <p>The Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report dated 04Apr2019 stated "GHD considers that the MRM report has identified all of the issues with the construction management and operation of CE Alpha in the broader context of the NOEF performance. The design is consistent with the Waste Rock management conditions of the current mine authorisation,[...]"</p> <p>EMR 2019-2020 states in Section 2.5.2 "Construction of the Central East levee and installation of the temporary section of the 100-year ARI flood protection barrier between WPROD and EPROD was also undertaken as described in the January 2019 Amendment. Construction of the 20-year flood protection to the south of EPROD is described in the SE stage works."</p>	Condition 1.1.ii.12 is the MRM MMP Amendment, January 2019, which states "non-benign materials can be placed below the 100 year average recurrence interval (ARI) flood level, subject to the progressive flood protection construction as per Section 10.8.2 of the Draft EIS Appendix U - Surface Water Impact Assessment Report."
16.b	on a compacted clay liner (CCL) or engineered low permeability material that slopes towards a Perimeter Runoff Dam (PROD) or a storage structure, as defined in 37(a);					1	1					4	Full Compliance	<p>NOEF Central West Phase Design, Construction and Operations Manual (MIN-TEC-PLN-1000-0002). Refer to Sections 6 and 8. Performance Review, Monitoring and Reporting.</p> <p>NOEF Central East Alpha Stage Complete Design Report. Refer to Section 6.1.1.1</p> <p>Section 6.2 of NOEF Central West Phase Design, Construction and Operations Manual The base or foundation of the facility has been designed to generally grade towards the east where a collection sump has been designed to allow interim collection of surface run-off (until the dump sheds into WPROD) and any underdrainage from the base of the facility. Until the 'wedge' that drains into WPROD has been completed, surface runoff must be managed by sumps in the east.</p> <p>Section 6.4.2. requires all non-benign material stored inside an encapsulating CCL.</p> <p>Section 8.2.2.2 of NOEF Central West Phase Design, Construction and Operations Manual includes checking as-built against design for the CCL for gradient of the surface to ensure that flow paths are present across the liner.</p> <p>NOEF Central East Alpha Stage Complete Design Report. Refer to Section 6.1.1.1 discusses the in-situ foundations of Central East being better than an engineered CCL, the proposed engineered CCL for the new section of CE Alpha and sloping for seepage capture.</p> <p>The Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report dated 04Apr2019 stated "GHD considers that the MRM report has identified all of the issues with the construction management and operation of CE Alpha in the broader context of the NOEF performance. The design is consistent with the Waste Rock management conditions of the current mine authorisation,[...]"</p>	



2019 Authorisation Condition No.	Condition/Requirement	DOMAIN								Score	Compliance Level	Evidence	Comments	
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Placement Facilities	Exploration	Waterways (including river diversion)					Bing Bong Loading Facility
16.c	and encapsulated in a minimum of a 600mm thick CCL, or engineered low permeability material, upon construction being finalised; and					1					N/A	Not Applicable	NOEF Central West Phase Design, Construction and Operations Manual (MIN-TEC-PLN-1000-0002). Section 6.2.1.1  Section 6.2.1.1 requires that PAF and non-benign waste material shall be encapsulated by a minimum 0.6m compacted clay liner (CCL).  The Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report dated 04Apr2019 stated "GHD considers that the MRM report has identified all of the issues with the construction management and operation of CE Alpha in the broader context of the NOEF performance. The design is consistent with the Waste Rock management conditions of the current mine authorisation,[...]"	Future item as construction not finalised.
16.d	the encapsulation CCL or engineered low permeability material must be covered by benign material to protect it from erosion and desiccation.					1					N/A	Not Applicable	NOEF Central West Phase Design, Construction and Operations Manual (MIN-TEC-PLN-1000-0002). Section 6.2.1.1  The CCL is covered by rock armouring as shown on Figure 14. Section 6.4.2.1 also highlights that fundamental to the CCL performance is careful selection and preparation of the waste rock above and below the CCL's to limit exposure to erosion and piping.  The Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report dated 04Apr2019 stated "GHD considers that the MRM report has identified all of the issues with the construction management and operation of CE Alpha in the broader context of the NOEF performance. The design is consistent with the Waste Rock management conditions of the current mine authorisation,[...]"	Future item as construction not finalised.
17	PAF (HC) and PAF (RE) waste rock cells, if not finalised, will have interim alluvium covers placed prior to the 1st November each year.					1					3	Part Compliance (High)	Operator advised that alluvial layers are "continuously being placed daily" and that wet season active areas need to remain operational.  CE ICE Report Letter "Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 4Apr2019 "GHD considers that the MRM report has identified all of the issues with the construction management and operation of CE Alpha in the broader context of the NOEF performance. The design is consistent with the Waste Rock management conditions of the current mine authorisation,[...]"  Insufficient evidence available at time of the audit.	OFI DITT: The wording of the alluvium cover placement prior to 1 November each year condition may be improved to recognise waste placement occurs all year round and not unnecessarily restrict wet season operational activities.  OFI: Obtain and document agreement with the Department that the current methodology of alluvial cover is acceptable to recognise waste placement occurs all year round and to avoid restricting wet season operational activities unnecessarily.
18	The Operator must only place PAF (HC) and PAF (RE) Waste Rock at the following locations:													Waste is reported in the EMR and OPR - breakdown of waste material and location of placement in the reporting period. Note that the mined PAF in Table 5 of OPR 2018-2019 equalled the waste dumped PAF in Table 7 of the OPR 2018-2019 (i.e. no missing waste volume of PAF).  Table 7 of EMR 2019-2020 has PAF (HC) and PAF (RE) placed at NOEF Central West and the PAF (RE) Trial Pad. The PAF (RE) Trial Pad is located outside of the areas approved for placement of PAF (RE) waste rock. Condition 14.b approves the PAF trial pad (0.02Mt of PAF (RE)) that is located in NOEF Southeast stage and therefore is compliant with this condition.
18.a	NOEF West A, B, C and D;					1					4	Full Compliance	McArthur River Mine 2018-2019 Operational Performance Report (dated: 31Jul2019) Table 7 shows PAF (HC) and PAF (RE) placed at NOEF Central West. Table 7 of EMR 2019-2020 has PAF (HC) and PAF (RE) placed at NOEF Central West and the PAF (RE) Trial Pad. Performed as required.	OPR/EMR tracks and reports where waste material is placed.
18.b	Central West NOEF (CWNOEF) Alpha and Bravo stages, but only after the Western Perimeter Runoff Dam (WPROD) has been designed, constructed and commissioned in accordance with all requirements of the Minister;					1					4	Full Compliance	McArthur River Mine 2018-2019 Operational Performance Report (dated: 31Jul2019) Table 7 shows PAF (HC) and PAF (RE) placed at NOEF Central West. Table 7 of EMR 2019-2020 has PAF (HC) and PAF (RE) placed at NOEF Central West and the PAF (RE) Trial Pad.  Performed as required.	WPROD was completed in July 2017 (before the audit period commenced) and IM sighted a completion report dated 14Jul2017.  OBS: It was problematic to distinguish between the placement of waste at Alpha and Bravo stages or Charlie stages as they were listed together in Table 7 of the EMR 2019-2020. The IM understands that the latest Authorisation approved 13Nov2020 no longer contains this condition as all areas are approved. Therefore no OFI is included.

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments	
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility					
18.c	Central West NOEF (CWNOEF) Charlie stage, only after approval under the EPBC Act; and						1					4	Full Compliance	McArthur River Mine 2018-2019 Operational Performance Report (dated: 31Jul2019) Table 7 shows PAF (HC) and PAF (RE) placed at NOEF Central West. Table 7 of EMR 2019-2020 has PAF (HC) and PAF (RE) placed at NOEF Central West and the PAF (RE) Trial Pad.  EPBC Act was granted in June 2019. Charlie stage foundation and CCL construction is discussed in section 2.5.2 of OPR 2018-2019. EMR 2019-2020 Section 2.5.2 discusses pre August 2019 benign materials only in Charlie stage and after that time (related to MMP amendment approval) non-benign material placed in Charlie stage, which is consistent with this condition.  Performed as required.	OBS: It was problematic to distinguish between the placement of waste at Alpha and Bravo stages or Charlie stages as they were listed together in Table 7 of the EMR 2019-2020. The IM understands that the latest Authorisation approved 13Nov2020 no longer contains this condition as all areas are approved. Therefore no OFI is included.
18.d	Central East NOEF (CENOE) Alpha and Bravo, but only after:						1					4	Full Compliance	McArthur River Mine 2018-2019 Operational Performance Report (dated: 31Jul2019) Table 7 shows PAF (HC) and PAF (RE) placed at NOEF Central West. Table 7 of EMR 2019-2020 has PAF (HC) and PAF (RE) placed at NOEF Central West and the PAF (RE) Trial Pad.  Performed as required.	As the EPROD is not commissioned, no placement of PAF (HC) and PAF (RE) Waste Rock at Central East NOEF is approved and none occurred in 2018-2019 and 2019-2020 based on the OPR and EMR, respectively.
18.d.i	approval under the EPBC Act;						1					N/A	Not Applicable		Not applicable as d.i, d.ii and d.iii are all required and d.iii is not active.
18.d.ii	the completion of construction in accordance with Conditions 25 and 27; and						1					N/A	Not Applicable		Not applicable as d.i, d.ii and d.iii are all required and d.iii is not active.
18.d.iii	commissioning of the Eastern Perimeter Runoff Dam (EPROD) in accordance with Conditions 43, 44 and 45.					1	1					N/A	Not Applicable	Future item.	EPROD commenced construction in the 2018/2019 period but not completed prior to 19/20 wet season. Now planned to be commissioned in 2020.
<b>CONSTRUCTION OF THE CWNOEF</b>															
<b>ALPHA AND BRAVO STAGES</b>															
19	The Operator must construct, operate and maintain the CWNOEF Alpha and Bravo Stages in accordance with:												-		
19.a	The version of the document entitled Northern Overburden Emplacement Facility (Central West Phase) Design, Construction & Operations Manual which has been approved by the Minister from time to time, subject to any conditions imposed or changes required by the Minister[9].						1					4	Full Compliance	Sighted NOEF Central West Phase Design, Construction and Operations Manual (MIN-TEC-PLN-1000-0002, Rev 2.1 Dated August 2015).  OPR 2018- 2019 states in Section 2.5.2 "Bravo was undertaken as described in the February 2016 Amendment, with benign materials in the 'wedge' zone and non-benign materials in a CCL encapsulated PAF cell. Alluvium advection barriers were applied to the non-benign materials to control air flows through the pile. This process effectively regulated oxidation rates of the PAF (RE) materials. Wedge CCL construction of Bravo stage was completed over an area of 7.4 ha."  EMR 2019 - 2020 states the following "Prior to the approval of the January 2019 MMP Amendment, construction in CW stage was undertaken as described in the 2013-2015 MMP Amendment – Mining Activities and NOEF Central West (CW) Alpha and Bravo Stages, dated 05Feb2016 (the February 2016 Amendment)."	Note [9]: At the date of this document [sic Authorisation approval 15Aug2019], version 2.1 of the manual had been approved subject to the changes set out in the Operator's submission to the former Department of Mines and Energy dated 05Feb2016 (identified as MDOC2016/00840 in the Department's document management system).
19.b	Concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12. Should future review of the designs 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.						1					N/A	Not Applicable	EMR 2019 - 2020 states "Following the approval of the January 2019 Amendment in August 2019, the CW Charlie Stage was developed as per the OMP EIS methodology, including the development of: • a 5 m MS-NAF Base on top of the Basal CCL, sloped to direct surface runoff to the CW Charlie Sump; • 'Wedge' geometry on top of the Base zone, constructed from non-benign material in up to 7.5 m lifts, with alluvium advection barriers between each lift, and sloped to assist surface water runoff to WPROD; • the Core zone constructed from non-benign waste in up to 7.5 m lifts, with alluvium advection barriers between each lift to limit oxidation of the PAF material; and • the PAF(RE) Cell, constructed in up to 2 m lifts, with alluvium advection barriers between each lift to limit oxidation of the PAF(RE) waste."  The Operator is not aware of any further review by independent experts that require additional matters to be addressed so condition considered not applicable.	
20	During construction of the CWNOEF Alpha and Bravo stages,												-		Future item.
20.a	the Operator must ensure:												-		



2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Placement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
20.a.i	PAF is emplaced in lift heights that minimises particle size segregation and creation of chimney structures, and must not exceed 7.5m; and						1				N/A	Not Applicable	This condition commenced in August 2019 and the Operator advised that there was no PAF remaining to be placed hence not applicable.  The following files were provided: - 62356 R1 Rev2.0 GHD letter 27Feb2015 - MRM20141209 - GHD Review of initial stage 62356 09Dec2014 Rev2  The McArthur River Mining Pty Ltd Peer Review of NOEF Monthly Construction Progress Report February 2020 dated October 2020 covered the period December 2019 onwards and stated "Wet season capping on Bravo stage continued during the reporting period." No other works in Alpha or Bravo stages were mentioned.	CW Phase ICE endorsement letters included (separate letters for foundation and then dumping onto foundation). CW Phase encompasses both Alpha and Bravo stages. Evidence provided is outside the audit period.
20.a.ii	advection barriers of appropriate thickness and moisture condition are emplaced at suitable intervals that disrupt the formation of oxygen convection cycles						1				N/A	Not Applicable	This condition commenced in August 2019 and the Operator advised that there was no PAF remaining to be placed, hence not applicable.  The following files were provided: - 62356 R1 Rev2.0 GHD letter 2015-02-27 - MRM20141209 - GHD Review of initial stage 62356 2014-12-09 Rev2.  The McArthur River Mining Pty Ltd Peer Review of NOEF Monthly Construction Progress Report February 2020 dated October 2020 covered the period December 2019 onwards and stated "Wet season capping on Bravo stage continued during the reporting period." No other works in Alpha or Bravo stages were mentioned.	CW Phase ICE endorsement letters included (separate letters for foundation and then dumping onto foundation). CW Phase encompasses both Alpha and Bravo stages. Evidence provided is outside the audit period.
20.a.iii	The ICE verifies the suitability of the PAF placement methodology with respect to particle size segregation and advection barriers.						1				N/A	Not Applicable	This condition commenced in August 2019 and the Operator advised that there was no PAF remaining to be placed hence not applicable.  The following files were provided: - 62356 R1 Rev2.0 GHD letter 2015-02-27 - MRM20141209 - GHD Review of initial stage 62356 2014-12-09 Rev2.  The McArthur River Mining Pty Ltd Peer Review of NOEF Monthly Construction Progress Report February 2020 dated October 2020 covered the period December 2019 onwards and stated "Wet season capping on Bravo stage continued during the reporting period." No other works in Alpha or Bravo stages were mentioned.	CW Phase ICE endorsement letters included (separate letters for foundation and then dumping onto foundation). CW Phase encompasses both Alpha and Bravo stages. Evidence provided is outside the audit period.  Refer to OFI in condition 21.a.
20.b	the Operator must provide construction reports to the Minister upon request including the following:						1				N/A	Not Applicable		The IM is not aware of any reports being requested by the Minister.
20.b.i	QA and QC results and reporting for CCLs; and						1				N/A	Not Applicable		The IM is not aware of any reports being requested by the Minister.
20.b.ii	results and reporting of testing undertaken to waste rock placement.;						1				N/A	Not Applicable		The IM is not aware of any reports being requested by the Minister.
20.b.iii	results and reporting of testing undertaken to confirm alluvial materials placed at the CWNOEF would not generate AMD if exposed to water and were geotechnically suitable for the location they were placed.						1				N/A	Not Applicable		The IM is not aware of any reports being requested by the Minister.
21	An Independent Certifying Engineer (ICE) must warrant and accept both the design and construction works, without limitation on responsibility:											-		

2019 Authorisation Condition No.		Condition/Requirement		DOMAIN								Score	Compliance Level	Evidence	Comments	
				Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)					Bing Bong Loading Facility
21.a		during all phases of construction (including at hold points) the ICE must be present at the CWNOEF Alpha and Bravo stages to oversee and certify the works that they meet design specifications and approve re-commencement of construction at defined hold points;						1					2	Part Compliance (moderate)	The evidence provided is outside the audit period. However, the February 2020 proposal would include the end of the audit period. The following was provided: - CW Alpha Cell 4B 2016 - CW Bravo Cell 5F 2017 - NOEF ICE Scope of Works 2020 Proposal.	NOEF ICE Scope of Works 2020 Proposal - GHD's Construction Phase Services will include provision of site staff able to interpret the technical provisions of the design and specifications contained within the Operator endorsed design and to progressively sign-off technical compliance of hold points and liaise with the off-site GHD engineering review team. No evidence was provided for within the audit period to demonstrate ICE supervision.  OFI: Improve documentation of Independent Certifying Engineer (ICE) supervision during all phases of NOEF construction. (Note: Operator has advised the IM that a revised process related to documentation of ICE supervision is now in place. This will be considered during the next audit period.)
21.b		any material changes to the design during construction must be approved by the ICE;						1					N/A	Not Applicable	Site Instruction 251115 SI019 provided.	Example of Site Instruction for Change in CCL specification as approved by the ICE in 2015. Evidence provided is outside audit period. Operator advised there were no material changes to the design during the reporting period that required ICE approval during the reporting period.
21.c		any monitoring equipment/structure installed or to be installed as part of the construction must remain functional at the conclusion of the construction works. If such equipment becomes non-functional, then replacement or an ICE approved alternative must be implemented;						1					N/A	Not Applicable		Not applicable. The Operator advised that no monitoring equipment has been installed in this stage since this Condition was included.
21.d		If the ICE wishes to use the Operator's project manager/resident engineer as an onsite representative then the ICE must agree that this does not diminish responsibility or liability for the project;						1					N/A	Not Applicable		Not applicable. The Operator advised that the ICE does not use the Operator as an onsite representative.
21.e		the ICE must hold appropriate public and professional indemnity insurance to cover the scope of works associated with the CWNOEF design and construction; and						1					4	Full Compliance	Insurances were referenced as below: - GHD Pty Ltd_AUD 5m - GHD Pty Ltd (PPL)_AUD 5m.	Current Certificate of Placement – Public and Products Liability and Certificate of Placement – Professional Indemnity provided meet this condition.
21.f		at completion of the construction works the ICE must approve an "as-constructed" construction report. The report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied.						1					N/A	Not Applicable		Advised by the Operator that construction of the stage is not complete. On this basis, the condition is not active. (The following has been provided as evidence of progressive works: - 17.11_CW NOEF Construction_GHD Progress Report - October_November 2017_Rev0).
<b>CHARLIE STAGE</b>								1								
22		The Operator is authorised to complete works to prepare and construct CWNOEF Charlie stage in accordance with:												-		
22.a		the 2013-2015 MMP amendment entitled Mining Management Plan Amendment: North Overburden Emplacement Facility – Central West Charlie Stage Foundation and additional information provided to the Department, as defined in condition 1(j)(ii)(10). The Operator must ensure:						1					4	Full Compliance	The following are evidence: -CWC ICE Review Letter 20Aug2019 -EMR 2019-2020.  Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20Aug2019 states "The design is consistent with the latest approvals that include the OMP EIS NOEF concepts."  EMR states that "Foundation and Basal CCL development continued in CW Charlie as per the McArthur River Mining, 2013-2015 Mining Management Plan Amendment dated September 2018 (September 2018 Amendment) during this time, with benign materials only in the 'wedge'. " Following the approval of the January 2019 Amendment in August 2019, the CW Charlie Stage was developed as per the OMP EIS methodology[...]."	

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
22.a.i	including allowances for survey accuracy/tolerances, the post construction CCL thickness is not less than 500mm;						1				4	Full Compliance	CWC ICE Review Letter 20Aug2019 Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20 August 2019 states "A 0.5m compacted clay liner (CCL) will continue to be placed over the foundation of this stage, with KCB modelling confirming this is adequate and material testing including recent field experience giving excellent results for CCL construction;" This condition is considered met.	
22.a.ii	the acceptance criteria for all tests, including those outlined in the condition 1.1(ii)(10), that are to be undertaken as part of the construction must be provided to the Department prior to commencement of the construction;						1				4	Full Compliance	The acceptance criteria for all Compacted Clay Liner tests are included in the "Compacted Clay Liners (CCL's)" Section of the relevant stage Construction Specification/Design Report. The relevant stage reports for the reporting period have been provided: Central West Operations Manual Rev2.1 (Section 9.5) CW Charlie 2018 Design Report V4 (Section 6.3) CW Charlie Complete Works Report V2 (Appendix 1 CW Charlie Complete Works Construction Specification - Section 6.3)  Section 6.3 of Appendix 1 - CW Charlie Complete Works Construction Specification from the CW Charlie Complete Works Report V2 checked and compliant for CCL. Additional acceptance criteria for subgrade in Section 6.2, protective rockfill layers in Section 6.4, Structural Fill in Section 6.5, etc. This condition is considered met.	These reports are provided to the Department, with the ICE endorsement letters, prior to the commencement of construction.
22.a.iii	waste rock used for construction of the CWNOEF Charlie stage foundation, as outlined in the condition 1.1(ii)(10), meets the geochemical criteria for classification as benign;						1				4	Full Compliance	CWC ICE Review Letter 20Aug2019  Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20 August 2019 states "The design report covers works associated with the placement of non-benign materials in the stage". This condition is considered met.	
22.a.iv	results and reporting of testing undertaken to confirm alluvial materials placed at the CWNOEF would not generate AMD if exposed to water and were geotechnically suitable for the location they were placed; and						1				4	Full Compliance	MRM_MEM_Alluvium_Waste_Characterisation_CHY_20190819  - MRM_MEM_Alluvium_Waste_Characterisation_CHY_20190819 concluded that "the vast majority of alluvial material used in construction of the CWNOEF is environmentally benign, with 94% of samples returning as LS-NAF(HC). Although some samples did return with elevated metals, this was due to residual soils in extremely weathered material within the oxidised zone in proximity to bedrock, which would not be mined as alluvium."	
22.a.v	the construction of the foundation will not impede surface water and underdrainage systems ability to convey all water to the sediment trap.						1				4	Full Compliance	CWC ICE Review Letter 20Aug2019  Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20Aug2019 states "Additional underdrains are proposed to promote toe seepage and further reduce basal seepage into the foundation." and "Reasonable contingency seepage interception plans have been identified with a commitment being made to further develop the groundwater monitoring strategy". The ICE has signed off on the report stating it includes conditions.	
22.b	concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12, and subject to Condition 18c, ensuring:						1				4	Full Compliance	CWC ICE Review Letter 20Aug2019 Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20Aug2019 states "The design is consistent with the latest approvals that include the OMP EIS NOEF concepts."	
22.b.i	Detailed designs follow the approved concept designs for CWNOEF and must include design objectives that satisfies both engineering and environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives. One of the construction hold points must include verification of PAF waste placement methodology;						1				4	Full Compliance	CWC ICE Review Letter 20Aug2019  Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20Aug2019 states: *"The design is consistent with the latest approvals that include the OMP EIS NOEF concepts." *"MRM shall ensure that all Hold Points identified in the specifications are signed off by GHD progressively as construction occurs." *"Importantly, GHD shall also be consulted in the preparation and endorsement of the following documentation as part of the ongoing management of the dump: -PAF cell and cover trial designs (including instrumentation provisions)"  This condition is considered met.	

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
22.b.ii	The detailed designs must be reviewed and endorsed by an ICE without limitation on responsibility and provided to the department prior to commencement of construction; and						1				4	Full Compliance	CWC ICE Review Letter 20Aug2019 Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20Aug2019 references the new conditions received on the 15Aug2019.	
22.b.iii	Should future review of the designs 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.						1				N/A	Not Applicable		Not applicable. No further reviews by independent experts have been undertaken.
23	During construction, and subject to Condition 18c,											-		
23.a	The Operator must ensure:											-		
23.a.i	PAF is emplaced in lift heights that minimises particle size segregation and creation of chimney structures, but must not exceed 7.5m;						1				4	Full Compliance	The following are evidence: -EMR 2019-2020 Section 2.5.2 -June 2020 NOEF Construction_GHD Progress Report -ITP_CWC1_C004_PAFHC Week 36.  June 2020 NOEF Construction_GHD Progress Report Section 3.2.1 "The haulage and dumping of PAF HC material to form a 7.5 m lift at core lift 2 continued during the first two weeks of the month. Works included the 7.5 m lift, shaping the batters and spreading of 100 mm of alluvial materials to complete the advection barrier covering the lift."  ITP_CWC1_C004_PAFHC Week 36 (outside audit period) ITP includes sign off of 7.5m lift maximum.  EMR 2019-2020 states • 'Wedge' geometry on top of the Base zone, constructed from non-benign material in up to 7.5 m lifts, with alluvium advection barriers between each lift, and sloped to assist surface water runoff to WPROD; • the Core zone constructed from non-benign waste in up to 7.5 m lifts, with alluvium advection barriers between each lift to limit oxidation of the PAF material;"	
23.a.ii	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; and						1				4	Full Compliance	The following are evidence: -EMR 2019-2020 Section 2.5.2 -ITP_CWC1_C007_PAFRE.  ITP_CWC1_C007_PAFRE includes "Placement of PAF (RE) Cell (up to 2m thick) Layer"  EMR states "the PAF(RE) Cell, constructed in up to 2 m lifts, with alluvium advection barriers between each lift to limit oxidation of the PAF(RE) waste."	
23.a.iii	Advection barriers of appropriate thickness and moisture condition is emplaced at suitable intervals that disrupts formation of oxygen convection cycles;						1				4	Full Compliance	The following are evidence: -EMR 2019-2020 Section 2.5.2 -June 2020 NOEF Construction_GHD Progress Report -ITP_CWC1_C004_PAFHC Week 36 -ITP_CWC1_C007_PAFRE.  June 2020 NOEF Construction_GHD Progress Report Section 3.2.1 "The haulage and dumping of PAF HC material to form a 7.5 m lift at core lift 2 continued during the first two weeks of the month. Works included the 7.5 m lift, shaping the batters and spreading of 100 mm of alluvial materials to complete the advection barrier covering the lift."  June 2020 NOEF Construction_GHD Progress Report Section 3.1 "The works include transportation and emplacement of specified materials in the correct locations, as per the design plans, and the construction of batters, wedges and advection barriers as required. The onsite laboratory also completed geochemical analysis of selected samples in order to compare to site specification requirements for material classification."  - ITP_CWC1_C004_PAFHC Week 36 (outside audit period) ITP includes check of advection barrier.  EMR states "the PAF(RE) Cell, constructed in up to 2 m lifts, with alluvium advection barriers between each lift to limit oxidation of the PAF(RE) waste."	

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
23.a.iv	The Central West Charlie Sump is appropriately lined to receive AMD; and						1				4	Full Compliance	EMR 2019-2020 Section 2.5 EMR states "high density polyethylene (HDPE) lining of Central West Charlie Sump occurred."	
23.b	The 100 year ARI flood level mitigation system along the northern footprint of the structure is in place prior to the oncoming wet season;						1				4	Full Compliance	EMR 2019-2020 Section 2.5 EMR section 2.5 states the following was undertaken: Flood protection: Construction of flood protection prior to the wet season at CW Charlie north face (100-year ARI); CW Charlie to EPROD (100-year ARI); EPROD to SEPROD (20-year ARI).	
24	An Independent Certifying Engineer (ICE) must warrant and accept both the design and construction works, without limitation on responsibility:						1				4	Full Compliance	The following are evidence: -NOEF ICE Scope of Works 2020 Proposal -Feb 2020 NOEF Construction_GHD Progress Report_REV1 -June 2020 NOEF Construction_GHD Progress Report.  NOEF ICE Scope of Works 2020 Proposal - GHD's Construction Phase Services will include provision of site staff able to interpret the technical provisions of the design and specifications contained within the Operator endorsed design and to progressively sign-off technical compliance of hold points and liaise with the off-site GHD engineering review team.	
24.a	during all phases of construction the ICE or approved delegate must be present at the CWNOEF Charlie site to oversee and certify and be accountable that all materials and material testing undertaken, QA/QC procedures and construction methods used satisfy the design intent and meet all the design specifications and approve re-commencement of construction at defined hold points. Where tests conducted demonstrate non-compliance to the acceptance criteria, evidence of corrective action taken (such as re-working of materials and re-testing) must be provided in the final report (as per clause (f));						1				4	Full Compliance	The following are evidence: -ITP CWC Cell 6-M -CWC Piezo Data -NOEF ICE Scope of Works 2020 Proposal -Feb 2020 NOEF Construction_GHD Progress Report_REV1.  Compliance Form and associated data for Basal CCL Cell reviewed showed evidence of compliance with this condition in addition to NOEF ICE Scope of Works 2020 Proposal. Feb 2020 NOEF Construction_GHD Progress Report_REV1 Section 1.1 "GHD's role has been to specify the details of the QA/QC requirements including sampling density, sample locations within the dump profile and survey data required, as well as witnessing construction processes including surface preparation, construction and testing. GHD's role also included certifying the test results are acceptable as works are completed; and if not, what work or rework is required to rectify the faults and ensure construction is completed according to the specifications and design intent."	
24.b	if the ICE wishes to use a delegate as an onsite representative then the ICE must agree that this does not diminish the ICE's responsibility or liability for the project and documented evidence be provided prior to commencement of works that lists the name of the delegate, their qualifications and experience and the level of duties assigned;						1				N/A	Not Applicable		Not applicable. Advised by the Operator that the ICE does not use the Operator as onsite representative.
24.c	any material changes to the amendment must be approved by the ICE and the Department notified as soon as practicable;						1				N/A	Not Applicable		IM advised by the Operator that no material changes made to date.
24.d	the frequency of the permeability testing be no less than 1 test per 10,000 cubic metres;						1				4	Full Compliance	In addition to the files provided for 24.a, the following was also provided: - CW Charlie CCL Testing Summary.  Evidence incorporated in the included Compliance Form and data. Also included is an overall summary of the testing completed for CW Charlie Stage, showing the frequency of testing for the stage. 30 tests were required and 36 were undertaken meeting this condition.	
24.e	the Vibrating Wire Piezometers, and any other monitoring equipment/structure to be installed as part of the construction, should be installed in such a manner that it remains functional at the conclusion of the construction works and during future activities on the structure. If such equipment becomes non-functional, then replacement or an ICE approved alternative must be implemented that achieves the intent of the inoperable equipment, given the importance of such data for future approvals; and						1				4	Full Compliance	CWC Piezo Data	No indication within the data reviewed of faulty monitoring equipment.

2019 Authorisation Condition No.		Condition/Requirement		DOMAIN								Score	Compliance Level	Evidence	Comments		
				Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)					Bing Bong Loading Facility	
24.f		at completion of the construction works the ICE must approve an "as-constructed" construction report. The report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied.							1					N/A	Not Applicable		Construction is not complete so this condition is not active. Example Progress Reports were provided for Condition 23 and Condition 27.
<b>CONSTRUCTION OF THE CENOEF</b>																	
25		The Operator must construct, operate and maintain the CENOEF in accordance with:													-		
25.a		Concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12, and subject to Condition 18d, ensuring:							1					4	Full Compliance	The following are evidence: -CE ICE Report Letter "Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 04Apr2019 -NOEF ICE Scope of Works 2020 Proposal.  Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report. "Designed in accordance with the Overburden Management Plan Environmental Impact Statement (OMP EIS), Variation of Authorisation 0059 (as amended) and approved Sustainable Development Mining Management Plan (2013 2015) (as amended) (MMP 2013 2015)." Construction evidence based on ICE Scope of Works 2020 Proposal.	
25.a.i		Detailed designs follow the approved concept designs CENOEF and must include design objectives that satisfies both engineering and environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives. One of the construction hold points must include verification of PAF waste placement methodology;							1					4	Full Compliance	The following are evidence: -CE ICE Report Letter "Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 04Apr2019 -CE Alpha Design Report version 2, 10Apr2019.  Construction Hold Points are nominated in Appendix 1 CE Alpha Complete Works Construction Specification in the CE Alpha Design Report. The CE Alpha Design Report doesn't specify a hold point for verification of PAF waste placement methodology. However, the ICE is responsible and accountable for Approval of Construction QA/QC Plan and Methodology Statements.	No inconsistencies with the concept designs noted by ICE.  Advised by Operator that no PAF(RE) Cells have been constructed in Central East Stage as of yet (supported by no PAF (RE) in the NOEF CE shown in Table 7 of the OPR 2018-2019 and EMR 2019-2020). The IM has not viewed the Inspection and Test Plans.  OBS: A further improvement would be to include documentation of a construction hold point specifically for verification of PAF waste placement methodology.
25.a.ii		new areas of the NOEF foundation development (i.e. areas at base level) that do not currently contain PAF wastes must include a compacted clay layer (CCL) or, an engineered low permeability liner, of at least 0.5m thickness and maximum saturated hydraulic conductivity of 1 x 10-9 metres per second, above which future PAF wastes are to be stored;							1					4	Full Compliance	The following are evidence: CE ICE Report Letter dated 04Apr2019 CEA 3D ITP - Complete July 2020 (outside audit period).  Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report states " 0.5m CCL placed over new foundation areas," CEA 3D ITP - Complete includes CCL hold points - min thickness of 500mm.	
25.a.iii		The detailed designs must be reviewed and endorsed by an ICE without limitation on responsibility and provided to the department prior to commencement of construction; and							1					4	Full Compliance	The following are evidence: CE ICE Report Letter "Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 04Apr2019.  The detailed designs were not submitted to the Department in the audit period as construction has not commenced.	
25.a.iv		Should future review of the designs 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.							1					N/A	Not Applicable		Not applicable. IM advised by Operator that no further reviews by independent experts have been undertaken.
26		During construction, and subject to Condition 18d(i),													-		
26.a		The Operator must ensure:													-		
26.a.i		PAF(RE) is emplaced in lift heights that minimises particle size segregation and creation of chimney structures, but must not exceed 2m;							1					N/A	Not Applicable		Future item. No PAF(RE) Cells have been constructed in Central East Stage as of yet (supported by no PAF (RE) in the NOEF CE shown in Table 7 of the OPR 2018-2019 and EMR 2019-2020).



2019 Authorisation Condition No.		Condition/Requirement		DOMAIN								Score	Compliance Level	Evidence	Comments	
				Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)					Bing Bong Loading Facility
26.a.ii		Advection barriers of appropriate thickness, moisture conditioned (if required), is emplaced at suitable intervals that disrupts formation of oxygen convection cycles. If the PAF(RE) cells are not finalised, a 1m thick compacted advection barrier must be placed prior to every wet season;						1					N/A	Not Applicable	Future item. No PAF(RE) Cells have been constructed in Central East Stage as of yet (supported by no PAF (RE) in the NOEF CE shown in Table 7 of the OPR 2018-2019 and EMR 2019-2020).	
26.a.iii		The 100 year ARI and 20 year ARI flood level mitigation systems along the eastern footprint of the structure is in place prior to the oncoming wet season.						1					N/A	Not Applicable	Future item. No PAF(RE) Cells have been constructed in Central East Stage as of yet (supported by no PAF (RE) in the NOEF CE shown in Table 7 of the OPR 2018-2019 and EMR 2019-2020).	
27		An independent Certifying Engineer (ICE) must warrant and accept both the design and construction works, without limitation on responsibility:						1					4	Full Compliance	<p>The following are evidence:</p> <ul style="list-style-type: none"> <li>-CE ICE Report Letter "Engineering Review of NOEF - Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 04Apr2019</li> <li>-CE Alpha Design Report version 2, 10Apr2019</li> <li>-NOEF ICE Scope of Works 2020 Proposal</li> <li>-MRM Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020.</li> </ul> <p>Design evidence provided via letter Engineering Review of NOEF Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report.</p> <p>Construction evidence based on ICE Scope of Works 2020 Proposal and MRM Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020 Table 1-1: Summary of GHD site presence as Independent QA Engineers that states attendance from January 2020 through April 2020. Section 1.1 of MRM Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020 stated "GHD's role included witnessing construction processes including surface preparation, material selection, batter emplacement and advection barrier placement. Additionally GHD has reviewed and approved the Inspection and Test Plans (ITPs) that MRM provide weekly, which specify the works completed in each area each week. This includes reviewing witness and hold points to ensure compliance with the relevant design reports (refer Section 1.2). GHD's role also included certifying that the ITPs test results are acceptable as works are completed, and if not, what works and re-works are required to rectify the faults and ensure the construction is according to the specifications and design intent."</p>	<p>OBS: Construction phase evidence was provided for the end of the audit period.</p> <p>Refer to OFI in condition 21.a.</p>
27.a		During all phases of construction the ICE or approved delegate must be present at the CENOEF site to oversee and certify and be accountable that all materials and material testing undertaken, QA/QC procedures and construction methods used satisfy the design intent and meet all the design specifications and approve re-commencement of construction at defined hold points. Where tests conducted demonstrate non-compliance to the acceptance criteria, evidence of corrective action taken (such as re-working of materials and re-testing) must be provided in the final report (as per clause 27(g));						1					4	Full Compliance	<p>CEA 3D ITP signed off by the ICE- Completed July 2020 (outside audit period).</p> <p>MRM Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020 is out side of the audit period however appendix B includes 14 Emerson tests from April 2020 that are within the audit period) and Table 1-1: Summary of GHD site presence as Independent QA Engineers that states that attendance was from January 2020 through April 2020.</p> <p>NOEF ICE Scope of Works 2020 Proposal - "GHD's Construction Phase Services will include provision of site staff able to interpret the technical provisions of the design and specifications contained within the Operator endorsed design and to progressively sign-off technical compliance of hold points and liaise with the off-site GHD engineering review team."</p>	<p>OBS: Construction phase evidence was provided for the end of the audit period.</p> <p>Refer to OFI in condition 21.a.</p>
27.b		If the ICE wishes to use a delegate as an onsite representative then the ICE must agree that this does not diminish the ICE's responsibility or liability for the project and documented evidence be provided prior to commencement of works that lists the name of the delegate, their qualifications and experience and the level of duties assigned;						1					N/A	Not Applicable	Advised by the Operator that the ICE does not use the Operator as onsite representative therefore this condition is not applicable.	
27.c		any material changes to the design must be approved by the ICE in writing;						1					4	Full Compliance	<p>NOEF Central East Foundation Investigation - ICE Review</p> <p>Letter from GHD to Operator "Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 23Apr2020</p> <p>Letter from GHD to Operator "Independent Certifying Engineer (ICE) Review of Central East Alpha Design Report" dated 23Apr2020 states "The report findings are endorsed and GHD considers that the investigation provides sufficient evidence that the existing stockpile foundation meets the design intent and satisfies (and likely exceeds) the minimum 0.5 m thick, minimum 1x10-9 m/s CCL specification."</p>	A material change was proposed to use in-situ clay to achieve the same design intent of the Basal CCL. ICE endorsement of proposal is included. This has not been constructed yet as waiting for confirmation in 2020 MMP. In addition, examples of minor changes to specification are outlined in Progress Reports.

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
27.d	including allowances for survey accuracy/tolerances, the post construction CCL thickness is not less than 500mm;						1				4	Full Compliance	CE Alpha Design Report version 2, 10Apr2019 CEA 3D ITP - Complete July 2020 (outside audit period) MRM Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020.  In the CE Alpha Design Report Appendix 1 CE Alpha Complete Works Construction Specification Section 6.3.3 "The tolerance on finished surface levels for the placed clay liner shall ensure that a shedding surface is maintained and minimum clay liner thickness is achieved.  Quality assurance shall be undertaken by the Survey Department to ensure that a minimum 0.5 m thickness is achieved throughout for the clay liner for the Basal CCL."  MRM Pty Ltd Peer Review of NOEF Monthly Construction Progress Report July 2020 dated September 2020 includes in section 2.3.1.1 "The CCL was generally constructed in 2 x 300 mm compacted layers (the lower layer incorporating some sub-grade material into the CCL) aiming at an overall target thickness of 600 mm. The Specification tolerance allows for the CCL thickness to be a minimum 500 mm, -0 / + 200 mm, i.e. 500 – 700 mm."	ITP includes ICE signoff for 500mm thickness for CCL (outside of audit period).
27.e	the frequency of the CCL permeability testing be no less than 1 test per 10,000 cubic metres;						1				4	Full Compliance	CE Alpha Design Report version 2, 10Apr2019 CE CCL Testing Summary 9Oct20 (outside of audit period) CEA 3D ITP - Complete July 2020 (outside audit period)  In the CE Alpha Design Report Appendix 1 CE Alpha Complete Works Construction Specification Section 6.3.2. Geotechnical Testing Frequency requires 1 test per 10,000m <sup>3</sup> for permeability of the CCL.	10 tests were required and 12 were undertaken (outside of the audit period) CEA 3D ITP - Complete July 2020 (outside audit period) includes 1 test per 10,000m <sup>3</sup> .
27.f	any monitoring equipment/structure installed or to be installed as part of the construction must remain functional at the conclusion of the construction works and during future activities on the structure. If such equipment becomes non-functional, then replacement or an ICE approved alternative must be implemented that achieves the intent of the inoperable equipment; and						1				N/A	Not Applicable		No monitoring equipment installed in Central East stage during the audit period.
27.g	at completion of the construction works the ICE must approve an "as-constructed" construction report. The report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied.						1				N/A	Not Applicable		Construction is not complete so this condition is not active. The following has been provided as an example: 01Jul2020 NOEF Construction_GHD Progress Report
<b>INVESTIGATION OF THE NOEF</b>														
28	Engagement of Consultant and scope of works:											-		Pre-reporting period.
28.a	The Operator must engage an independent third-party (Consultant) to investigate whether the placement and containment of mining waste at the NOEF is causing, or may cause, environmental harm to the Receiving Environment (Investigation).						1				N/A	Not Applicable		Pre-reporting period.
28.b	The Operator must ensure that the Consultant engaged by it in accordance with condition a:											-		
28.b.i	has expertise in each of the following areas: groundwater hydrogeology; ecotoxicology; water treatment; and						1				N/A	Not Applicable		Pre-reporting period.
28.b.ii	carries out the Investigation in accordance with this document.						1				N/A	Not Applicable		Pre-reporting period.
28.c	The Operator must provide a detailed scope of works for the Investigation to the Executive Director of the Mines Division of the Department of Primary Industry and Resources (ED) for approval by not later than 12:00pm on 22 April 2016.						1				N/A	Not Applicable		Pre-reporting period.



2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
28.d	Upon receipt of the scope of works referred to in condition c, the ED may in his or her discretion: i approve the scope of works; ii refuse to approve the scope of works; or iii request that the Operator submit further information in relation to the scope of works to enable him or her to decide whether to approve or refuse to approve the scope of works.											-		
28.e	If the ED requires further information in accordance with condition d.iii:											-		
28.e.i	the Operator must provide the further information within the time frame requested by the ED; and						1				N/A	Not Applicable		Pre-reporting period.
28.e.ii	if the Operator fails to submit the further information the ED may refuse to approve the scope of works.											-		Pre-reporting period.
29	General conduct of the Investigation: The Investigation must											-		Pre-reporting period.
29.a	identify the location and boundaries of any groundwater aquifer that may potentially be impacted by the NOEF, including the placement or containment of mining waste at the NOEF;						1				N/A	Not Applicable		Pre-reporting period.
29.b	for each aquifer identified in accordance with this condition, identify the nature and type of the aquifer, including:											-		
29.b.i	the direction of flow;						1				N/A	Not Applicable		Pre-reporting period.
29.b.ii	groundwater contours;						1				N/A	Not Applicable		Pre-reporting period.
29.b.iii	groundwater depth;						1				N/A	Not Applicable		Pre-reporting period.
29.b.iv	aquifer connectivity;						1				N/A	Not Applicable		Pre-reporting period.
29.b.v	potential pathways along faults; and						1				N/A	Not Applicable		Pre-reporting period.
29.b.vi	recharge rates.						1				N/A	Not Applicable		Pre-reporting period.
29.c	identify the source, cause and extent, or any potential source, cause and extent, of any environmental harm from the placement or containment of mining waste at the NOEF to each groundwater aquifer identified in accordance with condition b;						1				N/A	Not Applicable		Pre-reporting period.
29.d	identify and define the Environmental Values of the Receiving Environment in accordance with the methodology in the document entitled Australian and New Zealand Guidelines for Fresh and Marine Water Quality(1); and						1				N/A	Not Applicable		Pre-reporting period.
29.e	identify the source, cause and extent, or any potential source, cause and extent, of any environmental harm from the placement or containment of mining waste at the NOEF to the Receiving Environment.						1				N/A	Not Applicable		Pre-reporting period.
30	Review of monitoring programmes:											-		
30.a	As part of the Investigation, the Consultant must review all monitoring programmes required to be carried out by the Operator under the MMP;						1				N/A	Not Applicable		Pre-reporting period.
30.b	The Consultant's review of the Operator's monitoring programmes referred to in condition a must:											-		
30.b.i	assess the adequacy of the current groundwater monitoring programme to effectively identify any release or potential release of Contaminants from the placement and containment of mining waste at the NOEF;						1				N/A	Not Applicable		Pre-reporting period.
30.b.ii	identify whether any additional groundwater monitoring bores are required to improve the effectiveness of the existing groundwater monitoring programme and, if so, identify suitable locations for those bores;						1				N/A	Not Applicable		Pre-reporting period.
30.b.iii	identify whether any additional surface water monitoring sites are required and, if so, identify appropriate locations for those sites; and						1				N/A	Not Applicable		Pre-reporting period.
30.b.iv	identify whether any additional water quality parameters are required to be measured and, if so, provide recommendations for the inclusion of those parameters into the current surface water monitoring programme.						1				N/A	Not Applicable		Pre-reporting period.
31	Assessment of contamination of the environment:											-		

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments		
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility						
31.a	As part of the Investigation, the Consultant must review all monitoring programmes required to be carried out by the Operator under the MMP;						1					N/A	Not Applicable		Pre-reporting period.	
31.b	Without limiting the obligation in condition 31.a, the Consultant must provide:												-			
31.b.i	an assessment of all practical options to address any environmental harm referred to in condition 31.a;						1					N/A	Not Applicable		Pre-reporting period.	
31.b.ii	a detailed description of any remedial works required to address any environmental harm referred to in condition 31.a;						1					N/A	Not Applicable		Pre-reporting period.	
31.b.iii	an estimate of the likely costs of implementing the remedial works referred to in condition 31.b.ii; and						1					N/A	Not Applicable		Pre-reporting period.	
31.b.iv	an appropriate time frame for the implementation of the remedial works referred to in condition 31.b.ii.						1					N/A	Not Applicable		Pre-reporting period.	
32	Interim revised monitoring programme:												-			
32.a	the Operator must provide to the Minister an interim revised monitoring programme that sets out any interim improvements that can be made to the current monitoring programmes that are required to be carried out by the Operator under the MMP; and						1					N/A	Not Applicable		Pre-reporting period.	
32.b	the Operator must provide the interim revised monitoring programme referred to in condition 22.a to the Minister by no later than 12:00 pm on 22 June 2016.						1					N/A	Not Applicable		Pre-reporting period.	
33	Interim remediation options report:												-			
33.a	the Operator must provide to the Minister a report that sets out any interim remedial options that should be implemented pending the finalisation of any long-term remedial works referred to in condition 31.a;						1					N/A	Not Applicable		Pre-reporting period.	
33.b	the Operator must provide the interim remediation options report referred to in condition 33.a to the Minister by no later than 12:00 pm on 22 June 2016.						1					N/A	Not Applicable		Pre-reporting period.	
34	Final investigation report:												-			
34.a	as part of the Investigation, the Consultant must prepare an investigation report (Final Report):						1					N/A	Not Applicable		Pre-reporting period.	
34.a.i	addressing each of the matters set out in condition 31;						1					N/A	Not Applicable		Pre-reporting period.	
34.a.ii	providing remediation options;						1					N/A	Not Applicable		Pre-reporting period.	
34.a.iii	providing a revised monitoring programme; and						1					N/A	Not Applicable		Pre-reporting period.	
34.a.iv	any other relevant findings of the Investigation.						1					N/A	Not Applicable		Pre-reporting period.	
34.b	the Operator must submit a copy of the Final Report to the Minister by no later than 12:00 pm on 22 June 2017.						1					N/A	Not Applicable		Pre-reporting period.	
34.c	upon receipt of the Final Report, the Minister may in his or her discretion: i approve the Report; ii refuse to approve the Report; or iii request that the Operator submit further information in relation to the Report, or the matters the subject of the Report, to enable the Minister to decide whether to approve or refuse to approve the Report.												-			
34.d	If the Minister requires further information in accordance with condition 34.c.iii:						1						-			
34.d.i	the Operator must provide the further information within the time frame requested by the Minister; and						1					N/A	Not Applicable		Pre-reporting period.	
34.d.ii	if the Operator fails to submit the further information in accordance with condition 34.d.i, the Minister may refuse to approve the Report.						1						-			
<b>WATER MANAGEMENT AND STORAGE</b>																
35	When appropriate, the Operator must prepare, review and include the following for each MMP and where appropriate each MMP amendment, a Water Management Plan which includes:												-			

2019 Authorisation Condition No.		Condition/Requirement		DOMAIN								Score	Compliance Level	Evidence	Comments
				Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)				
35.a	modelling of surface water at and around the Mine;					1						4	Full Compliance	<p>Reviewed the Water Management Plan 31Jan2020 (Version 1.0) Section 3.9.1 and Appendix A (2019/20 Site Water Balance for the McArthur River Mine (0790-67-C1) Rev 1 dated 09Dec2019).</p> <p>2019/20 Site Water Balance for the McArthur River Mine (0790-67-C1) states in Section 6.2.4 Catchment runoff "The AWBM model was used to represent the runoff characteristics of different land use types within local mine site catchments."</p> <p>Section 6.1.2 of 2019/20 Site Water Balance for the McArthur River Mine (0790-67-C1) states "An AWBM model (Boughton, 2003) for the McArthur River has been calibrated to recorded flows at the Pump stream gauging station. The calibrated AWBM model was used to extend the McArthur River flow record at the M.I.M. Pump station and use within the water balance model for the assessment of off-site water release opportunities from the Mine site."</p>	
35.b	a whole of Mine water balance which takes account of the modelling of surface water;					1						4	Full Compliance	<p>Reviewed the Water Management Plan 31Jan2020 (Version 1.0) Section 3.9.1 and Appendix A (2019/20 Site Water Balance for the McArthur River Mine (0790-67-C1) Rev 1 dated 09Dec2019).</p> <p>Annual review of model performance based upon previous year. Version submitted with the 2020 Mining Management Plan Version 1.0. Water Balance and Calibration including data capture, modelling upcoming year, review of model based upon actual, plan for water/wet season management plan. This approach has occurred for more than 5 years and is well established.</p> <p>2019/20 Site Water Balance for the McArthur River Mine (0790-67-C1) Section 5.5.1 "Daily water level and pumped water transfer data are available for OP PP and OP VDD with some gaps. Daily or weekly water level and pumped water transfer data are available for the NOEF SPROD, NOEF SEPROD, NOEF WPROD for varying periods with some gaps. The available data is considered reasonably accurate due to significant improvements in monitoring data in the 2018/19 reporting period, which has led to notable improvements in the individual dam water balance assessments."</p> <p>6.1.2 states that surface runoff is included in the water balance.</p>	<p>Success: Improvement in monitoring data in 2018/19 has led to improvements in water balance assessments and the Mine's water management.</p> <p>OFI: Incorporate the existing additional water transfer data and water balance data from water storages not already included, or submit a request to the Department to have the requirement reviewed, if appropriate.</p>
35.c	calibration of the modelling of surface water to confirm its accuracy;					1						4	Full Compliance	<p>Reviewed the Water Management Plan 31Jan2020 (Version 1.0) Appendix A (2019/20 Site Water Balance for the McArthur River Mine (0790-67-C1) Rev 1 dated 09Dec2019).</p> <p>Annual review of model performance based upon previous year. Version submitted with the 2020 Mining Management Plan Version 1.0. Water Balance and Calibration including data capture, modelling upcoming year, review of model based upon actual, plan for water/wet season management plan. This approach has occurred for more than 5 years and is well established.</p> <p>2019/20 Site Water Balance for the McArthur River Mine (0790-67-C1) Section 6.1.2 states that the AWBM (surface water) model is calibrated.</p> <p>In addition, the executive summary states "The Mine water balance model was validated against the recorded historical behaviour of the water management system at the Mine over the last nine years (July 2010 to June 2019)." Section 6 describes the Mine water balance model development and the validation of the model against available monitoring data."</p> <p>Section 6.2.4 "The AWBM model parameters were determined based on the Goldsim model calibration results and previous experience with similar catchments."</p>	
35.d	a written plan detailing how water at the Mine will be managed for the forthcoming wet season;					1						4	Full Compliance	<p>Reviewed the Water Management Plan 31Jan2020 (Version 1.0) Section 3.9.2 and Appendix B (2019/2020 Water Storage TARP rev 1 dated 28Jan2020) where the site TARP approach is used.</p>	<p>The Operator updates the TARPs trigger levels for each year (including TARPs for maximum operating levels (MOLs) and release conditions). Each of the storages NOEF SEPROD, NOEF SPROD, NOEF WPROD, NOEF EPROD, OP PP, OP LA, OP P2, OP NC1A, OP VDD, Mill CRP, Mill APP, TSF Cell 1 Decant Pond, TSF Cell 2 Decant Pond and TSF WMD, have a TARP and are assigned an optimum operating level (OOL) and a MOL which are used to drive management decisions. These TARPs are only applicable to one specific wet season with new ones prepared annually.</p>
35.e	a plan of actions which will be undertaken to reduce the risk of any releases from AMD storage structures;					1						4	Full Compliance	<p>Reviewed the Water Management Plan 31Jan2020 (Version 1.0) Section 3.9.2 and Appendix B (2019/2020 Water Storage TARP rev 1 dated 28Jan2020) where the site TARP approach is used.</p>	<p>The Operator updates the TARPs trigger levels for each year (including TARPs for maximum operating levels and release conditions). Each of the storages NOEF SEPROD, NOEF SPROD, NOEF WPROD, NOEF EPROD, OP PP, OP LA, OP P2, OP NC1A, OP VDD, Mill CRP, Mill APP, TSF Cell 1 Decant Pond, TSF Cell 2 Decant Pond and TSF WMD, have a TARP and are assigned an OOL and a MOL which are used to drive management decisions. These are not specific to only AMD storage structures.</p>

2019 Authorisation Condition No.		Condition/Requirement	DOMAIN								Score	Compliance Level	Evidence	Comments	
			Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)					Bing Bong Loading Facility
35.f	a plan of actions, including engineers' reporting schedules, which will be undertaken to ensure the structural integrity of all AMD storage structures; and					1						3	Part Compliance (High)	<p>IM was advised by the Operator that storage structures have quarterly inspections. IM did not sight schedule.</p> <p>MRM 2018 Mine Dam Inspection Reports - Intermediate Surveillance Report (April 2019)</p> <p>MRM Bing Bong Dam Safety - 2018 Intermediate Surveillance Report (Rev 0 October 2019)</p> <p>Geotechnical Inspection Procedure Version 4 provides inspection frequency</p> <p>Major dams (only) have quarterly audits against an inspection protocol and produce audit reports. Advised that other dams are picked up in other inspections. There are different owners for mining dams and metallurgy dams with oversight by the Manger Projects &amp; Water.</p> <p>There was insufficient evidence available at the time of the audit to demonstrate a plan of actions exists to ensure structural integrity of all AMD storage structures.</p>	<p>The Water Management Plan reviewed (Water Management Plan 31Jan2020 (Version 1.0)) did not fulfil this requirement.</p> <p>The Fatal Hazard Protocol captures TSF and major dams requiring annual safety checks by engineers. The online Risk manager allocates the inspection date. Any actions that are identified during the inspection will go through layers of management for checking. Any actions that come out of the audit (critical control audit) will be registered on the risk manager.</p> <p>Note the Intermediate Surveillance Reports are completed annually.</p> <p>MRM 2018 Mine Dam Inspection Reports - Intermediate Surveillance Report (April 2019) includes:</p> <p>MRM Bing Bong Dam Safety - 2018 Intermediate Surveillance Report (Rev 0 October 2019) includes: Bing Bong Dredge Spoils (BBDS) and Bing Bong Surface Runoff Ponds (BBSRP).</p> <p>Higher-frequency inspections have been discussed and provided as part of Condition 37 below.</p> <p>OFI: Create a single master list and inspection schedule of all AMD storages (including at BBLF) to ensure all required inspections are completed and reported and include the master list in the Water Management Plan.</p>
35.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.					1						2	Part Compliance (moderate)	<p>No specific AMD Storage Structure Seepage Plan exists.</p> <p>Refer evidence in condition 37 supporting seepage management.</p> <p>There is no specific plan, however monitoring of groundwater quality (e.g. EMR 2020 Appendix U) and estimations of PROD dam seepage rates (e.g. Water Balance 2019 Section 6.3.4) is undertaken, and management is implemented as required. Evidence of the Operator improving seepage management is the HDPE lining of SPROD (refer to EMR 2020 Plate 5) as a result of impacts to groundwater quality detected in downstream bore GW0955 in 2017.</p> <p>There was insufficient evidence available at time of the audit.</p>	<p>OFI: Prepare an AMD storage structures seepage plan of actions and include this in the Water Management Plan.</p> <p>The Water Management Plan reviewed (Water Management Plan 31Jan2020 (Version 1.0)) did not fulfil this requirement. Documents in condition 37 provide some evidence to support this condition. However, a systematic approach including all AMD storage structures is required and needs to be included in the water management plan.</p>
36	Dewatering activities as part of pit development and borefield development for beneficial use must be metered to allow determination of parameters for assessment of extraction volumes and aquifer sustainability											3	Part Compliance (High)	<p>No evidence of how dewatering metering data is used in determination of parameters for assessment of extraction volumes and aquifer sustainability.</p> <p>The Operator provided the IM a screenshot of email correspondence demonstrating engagement with the Department.</p> <p>Daily emails on the dewatering volumes.</p> <p>2019/20 Site Water Balance for the McArthur River Mine Section 5.3 for MUDS.</p> <p>WMS Report - 01Nov2020</p> <p>Abstraction rates MASTER</p> <p>Table 9 in 2019/20 Site Water Balance for the McArthur River Mine shows that 3 out of 13 operational bores did not have flow monitoring for that period (WIKI Borefield).</p> <p>There was insufficient evidence available at time of the audit.</p>	<p>The open cut mine is dewatered continuously and borefield extraction is metered. The MUDS (Mine Underground Dewatering System) is described in Section 5.3 of the 2019 water balance. Upcoming DENR water resource regulation requirement to have all bores licenced. The Operator advised that they are looking to characterise the aquifers and address aquifer sustainability. The Operator advised that they are in the process of commissioning studies on aquifers prior to lodging applications for licences. No due date at present.</p> <p>Dewatering activities as part of pit development are included in the daily WMS reports.</p> <p>In terms of groundwater abstraction borefields (e.g. MIMEX, Emu, Donkey, Wiki), this data is not reported in the daily WMS report, and is accessed when required (managed by different areas of the business).</p> <p>OFI: Review the dewatering activities and ensure that all bores are metered.</p>

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN								Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)				
37	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:											<p>The following were evidence:</p> <ul style="list-style-type: none"> <li>-Water Management Plan 31Jan2020 (Version 1.0) Section 3.4.5.</li> <li>-Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used.</li> <li>-MRM 2018 Mine Dam Inspection Reports - Intermediate Surveillance Report (April 2019)</li> <li>-MRM Bing Bong Dam Safety - 2018 Intermediate Surveillance Report (Rev 0 October 2019)</li> <li>-Geotechnical Inspection Procedure Version 4</li> <li>-CW Bravo Sump inspection 20200426</li> <li>-EPROD Inspection_20190912</li> <li>-Lake Archer Inspection_20190912</li> <li>-MIA Sump Inspection_20200315</li> <li>-Mill CRP Sump_Inspection 20200407</li> <li>-Petes Pond Inspection_20190914</li> <li>-Pond 2 Inspection_20190920</li> <li>-SEPROD Inspection_20190915</li> <li>-WPROD Inspection 20200129</li> <li>-BB Water Management - October 2019</li> <li>-3219255-REP-0_2019 Intermediate Dam Safety Surveillance Report_PROD</li> <li>-180321_37764_EPROD Detailed Design Report_Rev2.</li> </ul> <p>EPROD Detailed Design Report_Rev2 demonstrated compliance for design in the audit period.</p> <p>Compliance is scored in sub-conditions 37.a.i to 37.a.xxii based on the listed water storage structure.</p>	<p>The management requirements of the condition related to the dams are addressed in the Water Management Plan via TARPs with the exception of the Bing Bong Surface Runoff Ponds. There is limited evidence for the sumps. These sump storages and Bing Bong Runoff Ponds do not have a TARP: CWAS, CWCS, OSD, CE1S, EDS, WDS, MIAS, WAS, BBSRP1, BBSRP2 and BBSRP3 (a TARP is not a regulatory requirement).</p> <p>Any AMD storage is conditioned by DPIR and constructed in accordance with those conditions. Any new storage design and construction is verified by the ICE (Independent Certifying Engineer). The storages are monitored using TARPs to manage water levels and avoid overtopping, regularly inspected for structural integrity and critical control protocols are implemented.</p> <p>The Operator updates the TARPs trigger levels for each year (including TARPs for maximum operating levels and release conditions). Storages NOEF SEPROD, NOEF SPROD, NOEF WPROD, NOEF EPROD, OP PP, OP LA, OP P2, OP NC1A (not AMD), OP VDD, Mill CRP, Mill APP, TSF Cell 1 Decant Pond (not listed in this condition), TSF Cell 2 Decant Pond (not listed in this condition) and TSF WMD (not AMD), have a TARP and are assigned an OOL and a MOL which are used to drive management decisions. These TARPs are only applicable to one specific wet season.</p>
37.a	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:				1				1	3	Part Compliance (High)	<p>Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used.</p> <p>There was insufficient evidence available at time of the audit.</p>	<p>The following water storage structures are listed with class 5 or 6 water in the WMP table 8 but are not listed in this condition: Mill ORS, Underground void and open pit, SOEF Sump, TSF Cell 1, TSF Cell 2, TSF C1SA and TSF C1SB. The IM understands that the Underground void and open pit is not a storage, TSF C1SA and TSF C1SB no longer exist and the Authorisation 13Nov2020 has added SOEF Sump. The IM considers it is acceptable that the TSF is considered conditioned elsewhere in the Authorisation.</p> <p>OFI: Create a single master list and inspection schedule of all AMD storages (including at BBLF) to ensure all required inspections are completed and reported and include the master list in the Water Management Plan.</p> <p>OFI: Obtain and document agreement with Department for storage of AMD in any sumps or storages not listed in condition 37a, and ensure all sumps or storages that store AMD are managed to minimise contaminants entering the receiving environment.</p>
37.a.i	Southern Perimeter Runoff Dam (SPROD);				1					4	Full Compliance	<p>Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used.</p>	Class 5/6 water in WMP 2020. TARP included in WMP.
37.a.ii	Southern Perimeter Sediment Runoff Dam (SPD);				1					N/A	Not Applicable		Combined into SPROD in 2018 based on comment in WMP 2020 Table 8.
37.a.iii	South East Perimeter Runoff Dam (SEPROD);				1					4	Full Compliance	<p>Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used.</p> <p>SEPROD Inspection_20190915</p>	Class 4 water in WMP 2020. TARP included in WMP.
37.a.iv	Western Perimeter Runoff Dam (WPROD);				1					4	Full Compliance	<p>Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used.</p> <p>WPROD Inspection 20200129</p>	Class 5/6 water in WMP 2020. TARP included in WMP.
37.a.v	Eastern Perimeter Runoff Dam (EPROD)-contingent on also meeting conditions 43, 44 and 45; Central West (CW) A Sump (CWAS);				1					N/A	Not Applicable	<p>EPROD Inspection_20190912</p>	Not applicable as not yet commissioned. Class 5/6 water in WMP 2020. TARP included in WMP.
37.a.vi					1					3	Part Compliance (High)	<p>There was insufficient documentation or records available at time of the audit to demonstrate that CWAS was designed, constructed and managed in accordance with the condition.</p> <p>CW Bravo Sump inspection 20200426</p>	<p>Class 5/6 water in WMP 2020. - CWAS renamed to CWBS. No TARP available for sumps.</p> <p>Insufficient evidence is likely to be a documentation issue rather than an implementation issue.</p> <p>Condition 37a includes an OFI that relates to this sub-condition.</p>

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN										Score	Compliance Level	Evidence	Comments	
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility						
37.a.vii	Central West C Sump (CWCS)					1							N/A	Not Applicable	Not as much evidence was available for this storage compared to other AMD storages listed.	Listed as Central West C Sediment trap CWCST to be converted to a sump - Class 2 water in WMP2020 (not AMD). No TARP available for sumps.  Considered N/A as AMD not listed for this sump.
37.a.viii	Anti-Pollution Pond (APP);					1							4	Full Compliance	Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used.	Class 5/6 water in WMP 2020. TARP included in WMP.
37.a.ix	Concentrator Runoff Pond (CRP);					1							4	Full Compliance	Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used. Mill CRP Sump_Inspection 20200407	Class 6 water in WMP 2020. TARP included in WMP.
37.a.x	Van Duncan's Dam (VDD);					1							4	Full Compliance	Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used.	Class 5/6 water in WMP 2020. TARP included in WMP. - VDD also named Duncan's Dam.
37.a.xi	Pete's Pond (PP);					1							4	Full Compliance	Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used. Petes Pond Inspection_20190914	Class 5/6 water in WMP 2020. TARP included in WMP.
37.a.xii	Lake Archer (LA);					1							4	Full Compliance	Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used. Lake Archer Inspection_20190912	Class 5/6 water in WMP 2020. TARP included in WMP.
37.a.xiii	Old Stores Dam (OSD);					1							3	Part Compliance (High)	There was insufficient documentation or records available at time of the audit to demonstrate that OSD was designed, constructed and managed in accordance with the condition.	Class 5 water in WMP 2020.No formal geotechnical inspection exists for OSD, which is pumped to the larger Mill storages (APP, CRP, overflows to LA). No TARP available for sumps. Insufficient evidence is likely to be a documentation issue rather than an implementation issue.  Condition 37a includes an OFI that relates to this sub-condition.
37.a.xiv	Pond 2 (P2);					1							4	Full Compliance	Water Management Plan 31Jan2020 (Version 1.0) including Appendix B (2019/2020 Water Storage TARPs rev 1 dated 28Jan2020) where the site TARP approach is used. Pond 2 Inspection_20190920	Class 4 water in WMP 2020. TARP included in WMP.
37.a.xv	Central East 1 Sump (CE1S);					1							N/A	Not Applicable		Class 5 water in WMP 2020. - CE1S also named GE Sump. The Environmental Monitoring Schedule names this dam Eastern Sediment Trap (EST) and the recently submitted MMP names this Central East Bravo Sump (CEBS). Advised by Operator currently not used as an AMD storage. No TARP available for sumps.  N/A because advised by the Operator that it was not used as an AMD storage in the audit period.
37.a.xvi	East Drain Sump (EDS);					1							3	Part Compliance (High)	There was insufficient documentation or records available at time of the audit to demonstrate that EDS was designed, constructed and managed in accordance with the condition.	Class 5/6 water in WMP 2020. Advised by Operator that this storage is not included in the Geotechnical Inspection Procedure given its smaller capacity and infrequent storage of water (as captured water is pumped to the PROD dams for treatment). Inspections are undertaken by the Dewatering Team when completing pump maintenance, a formal procedure for geotechnical inspection however does not exist. No TARP available for sumps.  Insufficient evidence is likely to be a documentation issue rather than an implementation issue.  Condition 37a includes an OFI that relates to this sub-condition.
37.a.xvii	West D Sump (WDS);					1							3	Part Compliance (High)	There was insufficient documentation or records available at time of the audit to demonstrate that WDS was designed, constructed and managed in accordance with the condition.	Class 5/6 water in WMP 2020. Advised by Operator that this storage is not included in the Geotechnical Inspection Procedure given its smaller capacity and infrequent storage of water (as captured water is pumped to the PROD dams for treatment). Inspections are undertaken by the Dewatering Team when completing pump maintenance, a formal procedure for geotechnical inspection however does not exist. No TARP available for sumps.  Insufficient evidence is likely to be a documentation issue rather than an implementation issue.  Condition 37a includes an OFI that relates to this sub-condition.



2019 Authorisation Condition No.		Condition/Requirement		DOMAIN								Score	Compliance Level	Evidence	Comments
				Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)				
37.a.xviii	Mine Infrastructure Area Sump (MIAS);					1						3	Part Compliance (High)	MIA Sump Inspection_20200315 There was insufficient documentation or records available at time of the audit to demonstrate that MIAS was designed, constructed and managed in accordance with the condition.	Class 5 water in WMP 2020. No TARP available for sumps. Condition 37a includes an OFI that relates to this sub-condition.
37.a.xix	West A Sump (WAS);					1						3	Part Compliance (High)	There was insufficient documentation or records available at time of the audit to demonstrate that WAS was designed, constructed and managed in accordance with the condition.	Class 5/6 water in WMP 2020. Advised by Operator that this storage is not included in the Geotechnical Inspection Procedure given its smaller capacity and infrequent storage of water (as captured water is pumped to the PROD dams for treatment). Inspections are undertaken by the Dewatering Team when completing pump maintenance, a formal procedure for geotechnical inspection however does not exist. No TARP available for sumps.  Condition 37a includes an OFI that relates to this sub-condition.
37.a.xx	Bing Bong Site Runoff Pond 1 (BBSRP1);					1				1		4	Full Compliance	Bong Dam Safety - 2018 Intermediate Surveillance Report (Rev 0 October 2019) Work Area Environmental Inspection - Bing Bong Water Management Infrastructure - October 2019	BBSRP1 was not included in WMP 2020. MRM Bing Bong Dam Safety - 2018 Intermediate Surveillance Report (Rev 0 October 2019) includes: Bing Bong Dredge Spoils (BBDS) and Bing Bong Surface Runoff Ponds (BBSRP). No TARP in the WMP. The BBSRPs are subject to the routine internal inspections (BB Water Management - October 2019) and annual intermediate dam safety inspections by GHD Pty Ltd (2018 Intermediate Surveillance Report GHD- BB.  Condition 37a includes an OFI that relates to this sub-condition.
37.a.xxi	Bing Bong Site Runoff Pond 2 (BBSRP2); and					1				1		4	Full Compliance	Bong Dam Safety - 2018 Intermediate Surveillance Report (Rev 0 October 2019) Work Area Environmental Inspection - Bing Bong Water Management Infrastructure - October 2019	BBSRP2 was not included in WMP 2020. MRM Bing Bong Dam Safety - 2018 Intermediate Surveillance Report (Rev 0 October 2019) includes: Bing Bong Dredge Spoils (BBDS) and Bing Bong Surface Runoff Ponds (BBSRP). No TARP in the WMP. The BBSRPs are subject to the routine internal inspections (BB Water Management - October 2019) and annual intermediate dam safety inspections by GHD Pty Ltd (2018 Intermediate Surveillance Report GHD- BB.  Condition 37a includes an OFI that relates to this sub-condition.
37.a.xxii	Bing Bong Site Runoff Pond 3 (BBSRP3).					1				1		4	Full Compliance	Bong Dam Safety - 2018 Intermediate Surveillance Report (Rev 0 October 2019) Work Area Environmental Inspection - Bing Bong Water Management Infrastructure - October 2019	BBSRP3 was not included in WMP 2020. MRM Bing Bong Dam Safety - 2018 Intermediate Surveillance Report (Rev 0 October 2019) includes: Bing Bong Dredge Spoils (BBDS) and Bing Bong Surface Runoff Ponds (BBSRP). No TARP in the WMP. The BBSRPs are subject to the routine internal inspections (BB Water Management - October 2019) and annual intermediate dam safety inspections by GHD Pty Ltd (2018 Intermediate Surveillance Report GHD- BB.  Condition 37a includes an OFI that relates to this sub-condition.
38	The Operator must not transfer water to or discharge water from any water storage structure until water quality analysis has been received and interpreted by the Operator and results confirm the water is suitable for the destination, having regard to the requirements of this document and the MMP and any other relevant restrictions on transfer or discharge of water within or from the Mine. In this regard:					1				1		4	Full Compliance	Sighted waste discharge detailed calculations (Dilution Calculator spreadsheet for Discharge Point SW11 10Mar2019) PRO-2200035 Waste Discharge Procedure provided.  The Waste Discharge Procedure requires checking the monitoring requirements of the latest WDL and Authorisation and ensuring the Monitoring Schedule and checklists align with the requirements.	A discharge will typically occur each wet season. Surface water sampling is conducted weekly on site. Should site storage and river conditions require a discharge, a discharge calculation is undertaken to ensure that there will be no impact on the water quality of the river. Monitoring results from the previous week will be used as part of this calculation. Run continuously every single day and watched closely. No Discharge occurred in 2019/2020.
38.a	The Operator is authorised to undertake works to release water from WMD to Little Barney Creek in accordance with the 2013-2015 MMP amendment and additional information provided to the Department, as defined in Condition 1(j)(ii)(11) and Condition 38(b).					1				1		4	Full Compliance	PRO-2200035 Waste Discharge Procedure provided.  Provided monitoring data for the March 2019 discharge event.	No discharge during the 19/20 wet season.
38.b	Water releases are authorised from the following points WMD Mine Levy Release Point X 3 and South East Levy 1 release point					1				1		4	Full Compliance	Sighted photographs of permanent water discharge structures. Water Management Plan 31Jan2020 (Version 1.0) Section 3.8.  Operator is only authorised to discharge from set locations (physical pipes, not overland flow etc). The WMP in Section 3.8 included discharge point MLDP (mine levee pumping outlets) and SEL1 DP (South-east levee 1 discharge point).	



2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments		
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility						
38.c	Total loads of mine-derived contaminants from all source inputs must be characterised for the 2017-2018 period by 30 June 2020, unless otherwise agreed in writing by the Department.					1					1	4	Full Compliance	Sighted the report dated 08May2020 2017-2018 Mine Derived Analyte Loads Assessment provided along with letter to DPRI with its submission.  2017-2018 Mine Derived Analyte Loads Assessment Report dated 01Feb2019 fulfils this condition.  The daily analyte loads were estimated by interpolating the available weekly water quality data, with some of the interpolation undertaken over extended periods.		
38.d	The Operator must ensure:															
38.d.i	The WMD release to Little Barney Creek is undertaken in a way that minimises localised erosion, and utilises suitable energy dissipation and flow spreader structures (e.g. rock basin) and be monitored daily during release events;					1					1	4	Full Compliance	Sighted webcam of location showing placed rock erosion protection and energy dissipation. WMD Release Point Checklist (for 2020/21 Wet Season)	WMD Release Point Checklist (for 2020/21 Wet Season) requires monitoring during discharge - daily inspection of the rock basin at the release point to ensure erosion is being suitably controlled.	
sub 38.d	In the event of erosion at the Carpentaria Highway culvert system, remediation must be implemented to the satisfaction of DIPL and Department;					1					1	N/A	Not Applicable		IM was advised by the Operator that erosion at the Carpentaria Highway culvert system did not occur in the audit period.	
38.d.ii	A cross-section profile survey is undertaken immediately up-stream and down-stream of the Carpentaria Highway crossing, prior to and following each wet season;					1					1	4	Full Compliance	Little Barney Creek figures _201104 (shows LiDAR for October 2018, August 2019 and August 2020).  For 2018/19 assessment, refer to OPR 2019 Appendix V, Section 2.5.5.2 and Appendix XII.  For 2018/19 assessment, OPR 2019 Appendix V, Section 2.5.5.2 and Appendix XII states "scans were completed on January 22, 2019 (pre-discharge event) and May 5, 2019 (post-discharge event and wet season rainfall)."  LiDAR and associated cross sections upstream and downstream of the Carpentaria Highway were provided for October 2018, August 2019 and August 2020.	Surveys undertaken annually in the dry season so each survey relates to following one wet season and prior to the next wet season.	
38.d.iii	Significant changes to creek morphology as function of time are quantified, prior to first water release, and following the last water release, for each wet season. 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);					1					1	4	Full Compliance	Sighted morphology study report as part of the 2019 OPR.  IM advised by the Operator that drone fly over occurs once a year to assess any significant morphology changes.	The IM was advised by the Operator that drone monitoring only commenced in 2019.	
38.d.iv	Evidence is available for inspection of continuous flow in Little Barney Creek along the length of the drainage system between WMD release outlet and Little Barney Creek Diversion Channel;					1					1	4	Full Compliance	2019/20 Continuous Logger Data  019/20 Continuous Logger Data includes the 2018/2019 and 2019/2020 wet season flows for Little Barney Creek.	Flow monitoring occurs, however continuous capture of data is problematic due to extreme climate and flow conditions impacting monitoring equipment. Faulty equipment maintained or replaced as necessary.	
38.d.v	measurement and recording of flow duration, flow rate and volume of all water released from WMD into Little Barney Creek;					1					1	4	Full Compliance	Sighted table 2.2 Managed Discharge Events 2018/2019 Wet Season including flow rate, flow volume, location.		
38.d.vi	The surface water monitoring schedule for the mine site includes SW06, and must be assessed for identical parameters as defined for SW03 as per Condition 1.I)(ii)(11). At monitoring points SW03 and SW06:					1					1	4	Full Compliance	Sighted SW03 and SW06 on the MRM Adaptive Management Plan January 2020 Operator Monitoring Schedule 2019/20 Rev. 2  Upon Discharge Surface Water Field Sheet 2018/19 does not include SW03. WMD Release Point Checklist (for 2020/21 Wet Season) has identical field sampling requirements for SW03 and SW06. The surface water monitoring schedule 2019 2020 rev 2 includes SW06 and it is assessed for the parameters that SW03 is plus additional parameters.	SW03 and SW06 are surface water monitoring locations.  Checked Q4 2018 Quarterly Monitoring Report 1810-1812 but as there was no release there was no monitoring to check.	
38.d.vi.a	Field parameters must also be measured daily during water release from WMD into Little Barney;					1					1	4	Full Compliance	Operator Monitoring Schedule 2018/19 Rev. 0 Operator Monitoring Schedule 2019/20 Rev. 2 Upon Discharge Surface Water Field Sheet 2018/19 WMD Release Point Checklist (for 2020/21 Wet Season) WMD RP Monitoring Data (discharge event 24 to 29 March 2019)	The release point checklist requires daily field readings at SW03 and SW06 during discharge. Checked Q4 2018 Quarterly Monitoring Report 1810-1812 but as there was no release there was no monitoring to check. Operator provided WMD monitoring data.	

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments		
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Placement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility						
sub 38.d.vi	The surface water monitoring analytical suite must include thallium, boron and cobalt.					1					1		4	Full Compliance	Operator Monitoring Schedule 2018/19 Rev. 0 Operator Monitoring Schedule 2019/20 Rev. 2 WMD RP Monitoring Data (discharge event 24 to 29 March 2019)  Monitoring schedule includes thallium, boron and cobalt. WMD monitoring data from discharge event 24 to 29 March 2019 includes thallium, boron and cobalt.	Checked Q4 2018 Quarterly Monitoring Report 1810-1812 but as there was no release there was no monitoring to check.
38.d.vi.b	The surface water monitoring 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,					1					1		4	Full Compliance	WMD Release Point Checklist (for 2020/21 Wet Season) WMD RP Monitoring Data (discharge event 24 to 29 March 2019)  WMD Release Point Checklist (for 2020/21 Wet Season) requires daily field readings at SW03 and SW06 for two weeks after discharge finishes. WMD RP Monitoring Data (discharge event 24 to 29 March 2019) showed that sampling continued until there was no flow at the sampling location.	Checked Q4 2018 Quarterly Monitoring Report 1810-1812 but as there was no release there was no monitoring to check.
38.d.vii	total loads of analytes (including lead and zinc) from all controlled discharge activities entering McArthur River must be measured at location SW06.					1					1		4	Full Compliance	Operator Monitoring Schedule 2018/19 Rev. 0 Operator Monitoring Schedule 2019/20 Rev. 2 WMD RP Monitoring Data (discharge event 24 to 29 March 2019)  The monitoring schedules do include that total metals, including for lead and zinc should be included at SW06 when WDL is expected to reach SW06 (in addition to weekly sampling when there is a flow) and WMD RP Monitoring Data (discharge event 24 to 29 March 2019) includes total loads of analytes including lead and zinc.	
38.d.viii	All data and results acquired as part of the activity be interpreted and reported in the Operator's Annual Operational Performance Report and the performance of this activity evaluated in terms of its effectiveness as a management tool.					1					1		3	Part Compliance (High)	EMR 2020: Appendix T Environmental Monitoring Report 2019/20 - Surface Water. OPR 2019: Surface Water Monitoring Report, 2018-19 (KCB, 2019a) is provided in Appendix V.  2020 EMR Section 4.1.3 "No water was discharged under the waste discharge licence WDL174-11 over the reporting period owing to site water shortage from August 2019 to February 2020." EMR 2020: Appendix T Environmental Monitoring Report 2019/20 - Surface Water includes: *Natural surface water program and artificial surface water program (monitoring data included in appendices V and VIII respectively); *Internal water transfers (e.g. Figure 2.48 Recorded TSF WMD Stored Volume, Transfers and Discharges, May 2019 – April 2020.) OPR 2019: Surface Water Monitoring Report, 2018-19 (KCB, 2019a) is provided in Appendix V.  Sufficient evidence of evaluation of activity's effectiveness as a management tool not available.	OFI: Evaluate the effectiveness of the EMRs as a management tool for the interpretation and reporting of data and results of water transfer or discharge from any water storage structure.
39	Surface water management infrastructure associated with the lead filtration facility at the Mine must be suitably designed and constructed to contain a 1:100 ARI rainfall event.					1							N/A	Not Applicable		The lead filtration facility at the mill is located inside the open pit flood levy wall which has a 1:100 ARI. The new lead filtration facility (listed in MMP 2013-15 Section 4.3.14.1) has not been constructed and no design drawings are available. Updates on this project have been included in the OPR/EMR within the Reconciliation of Operational Commitments and Actions tables.
40	Water management using the Centre Pivot Irrigator is authorised within the Mine Levee in accordance with concept presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12. The system is to be configured to maximise evaporation and minimise surface spray drift, surface runoff and infiltration into underlying natural soils.					1							N/A	Not Applicable		The centre pivot irrigator has not yet been installed. The TSF is operating to meet its conditions without the Centre Pivot Irrigator.
<b>WPROD CONSTRUCTION</b>																
41	The Operator must construct the WPROD in accordance with the following regime:													-		Completed in 2017 and so is outside of the audit period.
41.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;					1							N/A	Not Applicable		Completed in 2017 and so is outside of the audit period.
41.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;					1							N/A	Not Applicable		Completed in 2017 and so is outside of the audit period.

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
41.c	field parameters must include pH, SEC, temperature, REDOX and dissolved oxygen;					1					N/A	Not Applicable	Completed in 2017 and so is outside of the audit period.	
41.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;					1					N/A	Not Applicable	Completed in 2017 and so is outside of the audit period.	
41.e	additional sampling and analysis must be undertaken if there is a substantial change in field parameters (approximately 30%);					1					N/A	Not Applicable	Completed in 2017 and so is outside of the audit period.	
41.f	analysis must include: SEC, major ions (Ca, K, Mg, Na, Cl, CO <sub>3</sub> , HCO <sub>3</sub> and SO <sub>4</sub> ), Al, As, Cd, Co, Cu, Fe, Mn, Ni, Se and Zn;					1					N/A	Not Applicable	Completed in 2017 and so is outside of the audit period.	
41.g	field parameters and samples for analysis must be taken from the dewatering source, not the receiving storage;					1					N/A	Not Applicable	Completed in 2017 and so is outside of the audit period.	
41.h	if flow meters fail, then dewatering must cease until they are repaired or replaced;					1					N/A	Not Applicable	Completed in 2017 and so is outside of the audit period.	
41.i	field water quality parameters, flow meter volumes and laboratory analysis must be submitted to Department on a monthly basis;					1					N/A	Not Applicable	Completed in 2017 and so is outside of the audit period.	
41.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; and					1					N/A	Not Applicable	Completed in 2017 and so is outside of the audit period.	
42	Construction reports including QA and QC data must be provided to the Department within 30 days of construction being completed.					1					N/A	Not Applicable		
<b>EPROD CONSTRUCTION</b>														
43	The Operator is authorised to complete works to construct the EPROD in accordance with the document entitled McArthur River Mining Pty Ltd - Eastern Perimeter Runoff Dam - Detailed Design Report - March 2018 (GHD Report) ensuring that only benign material be used in the construction of the western embankment wall.					1					N/A	Not Applicable	Not yet commissioned - as such construction report is not yet available.	
44	The Operator must construct the EPROD in accordance with the following regime in the event groundwater dewatering is necessary:											-		
44.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;					1					N/A	Not Applicable	The Operator's mining department verbally advised that no groundwater has been encountered.	
44.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;					1					N/A	Not Applicable	The Operator's mining department verbally advised that no groundwater has been encountered.	
44.c	field parameters must include pH, SEC, temperature, REDOX and dissolved oxygen;					1					N/A	Not Applicable	The Operator's mining department verbally advised that no groundwater has been encountered.	
44.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;					1					N/A	Not Applicable	The Operator's mining department verbally advised that no groundwater has been encountered.	
44.e	additional sampling and analysis must be undertaken if there is a substantial change in field parameters (approximately 30%);					1					N/A	Not Applicable	The Operator's mining department verbally advised that no groundwater has been encountered.	
44.f	analysis must include: SEC, major ions (Ca, K, Mg, Na, Cl, CO <sub>3</sub> , HCO <sub>3</sub> and SO <sub>4</sub> ), Al, As, Cd, Co, Cu, Fe, Mn, Ni, Se and Zn;					1					N/A	Not Applicable	The Operator's mining department verbally advised that no groundwater has been encountered.	
44.g	field parameters and samples for analysis must be taken from the dewatering source, not the receiving storage;					1					N/A	Not Applicable	The Operator's mining department verbally advised that no groundwater has been encountered.	

2019 Authorisation Condition No.		Condition/Requirement		DOMAIN								Score	Compliance Level	Evidence	Comments
				Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Placement Facilities	Exploration	Waterways (including river diversion)				
44.h		if flow meters fail, then dewatering must cease until they are repaired or replaced;					1						N/A	Not Applicable	The Operator's mining department verbally advised that no groundwater has been encountered.
44.i		field water quality parameters, flow meter volumes and laboratory analysis must be submitted to Department on a monthly basis;					1						N/A	Not Applicable	The Operator's mining department verbally advised that no groundwater has been encountered.
44.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; and					1						N/A	Not Applicable	The Operator's mining department verbally advised that no groundwater has been encountered.
45		Construction reports including QA and QC data endorsed by the Independent Certifying Engineer (ICE) must be provided to the Department prior to commencement of operation within 30 days of construction being completed					1						N/A	Not Applicable	Not yet commissioned - as such construction report is not yet available.
<b>TAILINGS STORAGE FACILITY</b>															
46		An Independent Certifying Engineer (ICE) must oversee and be responsible for any works undertaken at the TSF:					1						4	Full Compliance	MRM Cell 2 Raise 5 RL 10059m Construction Report 3219255-REP-0_2019 Intermediate Dam Safety Surveillance Report_TSF and WMD April 2020 32-19255-MRM_Cell 1 RL10059m IFC_Reduced_Size GHD Pty Ltd_AUD05m GHD Pty Ltd (PPL)_AUD05m  The evidence demonstrated compliance with this condition.
46.a		The ICE must warrant and accept both the design and construction works, without limitation on responsibility;					1						4	Full Compliance	3219255-REP-0_2019 Intermediate Dam Safety Surveillance Report_TSF and WMD April 2020 MRM Cell 2 Raise 5 RL 10059m Construction Report  "This report has been prepared by GHD for McArthur River Mining Pty Ltd and may only be used and relied on by McArthur River Mining for the purpose agreed between GHD and McArthur River Mining for compliance with the regulatory requirement for annual inspection of the nominated dams. GHD otherwise disclaims responsibility to any person other than McArthur River Mining arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible." The construction report is reviewed and approved by ICE B Hanslow (2nd last page of document).
46.b		during all phases of construction the ICE must be present at the TSF site to oversee and certify that the works meet the approved design specifications. If the ICE wishes to use the Operator's project manager/resident engineer as an onsite representative then the ICE must agree that this does not diminish responsibility or liability for the project;					1						4	Full Compliance	MRM Cell 2 Raise 5 RL 10059m Construction Report  Periodic engineering inspections were carried out by GHD Engineers (as ICEs) throughout the works. MRM Cell 2 Raise 5 RL 10059m Construction report is reviewed and approved by ICE B Hanslow (2nd last page of document).
46.c		the ICE must hold appropriate public and professional indemnity insurance to cover the scope of works associated with any embankment raise contemplated in the MMP; and					1						4	Full Compliance	GHD Pty Ltd_AUD05m GHD Pty Ltd (PPL)_AUD05m  Certificate of Placement – Public and Products Liability and Certificate of Placement – Professional Indemnity provided meet this condition.
46.d		construction reports including QA and QC data must be provided to the Department within 30 days of construction being completed.					1						3	Part Compliance (High)	Sighted MRM Cell 2 TSF Stage 5 Raise to RL 10059m. Sighted email dated 24Aug2020. Construction was completed in 2018 however the as constructed report was not delivered to the department until 24Aug2020.  Part compliance- high (due date missed).  The IM understands that the Operator are rolling out Risk Manager's Environmental Obligations Register, to allow the relevant work areas to see and own requirements via actions being assigned directly to them when appropriate. Consider also assigning actions to members of the Environment Team to check in as a secondary measure.  OFI: Implement Risk Manager's Environmental Obligations Register, which assigns actions and accountabilities. (Note: Operator has advised IM that Environmental Obligations Register is being commissioned in Q2 2021).

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
47	The Operator must convene an advisory board (Independent Tailings Review Board or ITRB) and the Operator must ensure that includes independent geotechnical, tailings, and groundwater specialists which meets regularly to advise on operation of the TSF and any future modifications to its design. Should future review of the designs 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.				1						4	Full Compliance	Sighted ITRB presentation 20180509_MRM_ITRB_GW_Meeting Minutes	Formal meeting minutes have generally not been maintained to date, which would provide supporting evidence of meeting this condition. The Operator advised the IM that they will look to maintain meeting minutes in the future, following consultation with the ITRB.  OFI: Assist the coordination of the Independent Tailings Review Board (ITRB) activities and records by the Operator taking responsibility for: •requesting Department endorsement of meeting frequency •preparing meeting schedules, agendas and issuing ITRB meeting minutes •retaining evidence of Department endorsement of members.
48	Details of the members of the ITRB panel and meeting frequency must be submitted to the Department for endorsement by the Department.				1						3	Part Compliance (High)	DME letter- ITRB proposed members dated 15 September 2015 MRM re Proposed change to ITRB member dated 17 October 2016  20180509_MRM_ITRB_GW_Meeting Minutes  Initial letter (dated 04Sep2015) referred to by the then DME could not be located. This timeframe and the correspondence reviewed from the then DME dated 15Sep2015 are outside of the audit period. Similarly letter from Operator to DPIR dated 17Oct2016 advising of an ITRB member change is outside the audit period.  There was insufficient evidence available at the time of the audit to show endorsement of the current ITRB.  20180509_MRM_ITRB_GW_Meeting Minutes doesn't include Bruce Brown or David Williams who appear on subsequent documents (along with Tamie Weaver) as the ITRB.	See OFI in condition 47.
49	The ITRB is required to meet within 90 days from commencement of construction to allow sufficient time for review of subsequent modification to the TSF.				1						4	Full Compliance	Cell 2, Stage 6 Raise The following files were provided in support of the Cell 2, Stage 6 raise: - MRM TSF Cell 2 Stage 6 Design Report (referral to the ITRB) emailed to ITRB (Tamie Weaver, Bruce Brown and David Williams) letter addressed to David Williams dated 30 July 2019 - ITRB Review of McArthur River Mining Pty Ltd Cell 2 TSF Stage 6 Raise to RL 10061 Detailed Design Report dated 01Sep2019 - ITRB endorsement of the Cell 2, Stage 6 raise  Construction commenced on 03Sep2019 so although it is unclear if the ITRB "met" or only did a review, this condition is considered met.  Cell 1, Stage 5 Raise The following files were provided in support of the TSF Cell 1, Stage 5 raise: - 20.05.26 ITRB Presentation - Cell 1 Stage 5 Design Report (letter to David, Tamie and Bruce dated 09Jun2020) - RE Cell 1 Stage 5 - Design Report Rev 0 - RE MRM ITRB Risk Register - TSF Cell 1 Stage 5 Raise to RL 10059 Detailed Design Report  The 26 May meeting satisfies meeting within 90 days of construction commencing (12 August) as it was 78 days.	See OFI in condition 47.
50	The Operator must 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 not limited to:				1						4	Full Compliance	Sighted McArthur River Mining Cell 1 Raise 4 and TSF Seepage Interception Trench Independent Technical Review dated 15Mar2018. ITRB endorsement Cell 1 Raise 4 ITRB endorsement Cell 2 Raise 6	
50.a	Studies and/or trials to inform future construction and/or operation of the structure; and				1						4	Full Compliance	ITRB endorsement Cell 1 Raise 4 ITRB endorsement Cell 2 Raise 6  ITRB endorsement Cell 1 Raise 4 and Cell 2 Raise 6 confirmed.	

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN										Score	Compliance Level	Evidence	Comments		
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility							
50.b	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.				1								4	Full Compliance	TSF Operations, Maintenance and Surveillance (OMS) Manual, 31/07/2020, Version 5.0 Revision following Cell 1 Stage 4 Raise to RL 10,056 m.  ITRB endorsement Cell 1 Raise 4 and Cell 2 Raise 6 confirmed. TARP updated in TSF Operations, Maintenance and Surveillance (OMS) Manual.		
51	The Operator is authorised to complete works to recommission TSF Cell 1 in accordance with the 2013-2015 MMP amendment and additional information provided to the Department, as defined in Condition 1.1.ii.12. The Operator must ensure:																
51.a	The existing clay cap, if redundant, is removed as part of the recommissioning works; and				1								4	Full Compliance	TSF Cell 1 Stage 4 - Raise to RL 10056m Construction Report (July 2020)  The clay cap has been removed to allow maximum space for tailings. The As constructed report confirmed this in Section 3.3.		
51.b	The Cell 1 Seepage Interception Trench system must be constructed and an operation manual detailing rules of operation, maintenance and environmental monitoring requirements be developed prior to operation of the system; and				1								4	Full Compliance	TSF Operations, Maintenance and Surveillance (OMS) Manual, 31Jul2020, Version 5.0 Revision following Cell 1 Stage 4 Raise to RL 10,056 m fulfilled this condition.	Cell 1 recommissioning is a future system that was not operational during the audit period. Commissioning anticipated 2020/2021.	
51.c	The TSF OMS manual, including the TARP must be updated to include Cell 1.				1								4	Full Compliance	TSF Operations, Maintenance and Surveillance (OMS) Manual, 31Jul2020, Version 5.0 Revision following Cell 1 Stage 4 Raise to RL 10,056 m fulfilled this condition.	Cell 1 recommissioning is a future system that was not operational during the audit period. Commissioning anticipated 2020/2021.	
52	The Operator is authorised to complete lift Cell 1 embankment raise works as follows:																
52.a	Cell 1 Stage 4 is to be in accordance with the 2013-2015 MMP amendment and additional information provided to the Department, as defined in Condition 1.1.ii.2;				1								4	Full Compliance	TSF Cell 1 Stage 4 - Raise to RL 10056m Construction Report (July 2020)	No inconsistencies with Condition 1.1.ii.1 were found.	
52.b	Trials and investigations, including but not limited to blending of tailings with clay, investigation of in-situ Cell 1 conditions at east and west sumps, restriction on rate of placement of embankment materials and any other works identified by ITRB must be undertaken to inform the final construction;				1								4	Full Compliance	ITRB endorsement Cell 1 Raise 4 TSF Cell 1 Stage 4 - Raise to RL 10056m Construction Report (July 2020)  The ITRB endorsed the TSF Cell 1 Stage 4 - Raise to RL 10056m Construction Report and therefore works identified by the ITRB must have been undertaken to inform the final construction. Section 5.3.2 discusses blending the existing Cell 1 clay material with the existing tailings and the trials/investigations that were undertaken. Section 3.3 discussion stripping the eastern sump.		
52.c	If construction works are not completed prior to the start of the wet season, the Operator must make allowances of rainfall on the stability of the structure to the satisfaction of the ICE;				1								N/A	Not Applicable		Operator advised completed prior to the wet season late 2019.	
52.d	At completion of the construction works the ICE must approve an "as-constructed" construction report and updates to the TSF Operations, Maintenance and Surveillance Manual and TARPs. The construction report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied to the Department; and				1								4	Full Compliance	TSF Cell 1 Stage 4 - Raise to RL 10056m Construction Report TSF Operations, Maintenance and Surveillance (OMS) Manual, 31/07/2020, Version 5.0 Revision following Cell 1 Stage 4 Raise to RL 10,056 m  Construction report: includes hold point signoffs in the Borrow Management Plan MRM TSF Cell 1 Raise-4 and sighted laboratory geotechnical testing listed in Appendix B in 2019 TSF Cell 1 Raise to RL10056m - Lot Register. Note: the term responsible engineer/designer appears to be used. Reviewed and signed by ICE (second last page). Manual:"Section2.2.3Responsible Engineer The Responsible Engineer is the professional engineer responsible for verifying that the TSF / WMD is designed, constructed and operated in accordance with best practice and the applicable guidelines, standards and regulations. The Responsible Engineer is also responsible for technical supervision during construction, and should certify that the works have been constructed in conformance with the design, drawings, and specifications." Operations manual includes updated TARPs. Operations manual was updated following Cell 1 Stage 4 Raise to RL 10,056 m.	OFI: Improve ICE reports on future Tailings Storage Facility cell embankment raise work by stating the relevant Authorisation conditions and MMP amendments as design criteria and that the report is certifying against these listed regulatory requirements.	
52.e	The TSF Cell seepage mitigation system is fully operational and optimised within 12 months of recommencing tailings deposition in Cell 1.				1								N/A	Not Applicable		Not applicable - TSF cell 1 seepage system commissioning anticipated 1/12/20. This is a future item.	



2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
53	The Cell 2 Raise 3 lift of the TSF may be via upstream construction. Cell 2 Raise 4 lift of the TSF has been reviewed and approved by the ITRB. Cell 2 Raise 5 lift of the TSF has been reviewed and approved by the ITRB. Any further lifts will be subject to review and approval by the ITRB which must consider all information on previous designs, construction and QA/QC information.				1						N/A	Not Applicable		Condition is a statement only. Retains the history of previous Authorisation conditions.
54	The Operator must operate and maintain the TSF in accordance with the most up-to-date TSF OMS manual, ensuring:				1						4	Full Compliance	MRRM TSF Quarterly Report – September to November 2019 TSF Operations, Maintenance and Surveillance (OMS) Manual, 31Jul2020, Version 5.0 Appendix A - Routine daily inspection form  See TSF Operations, Maintenance and Surveillance (OMS) Manual, 31Jul2020, Version 5.0 Section 6.1 n 6 'Surveillance objectives' outlines the process for the routine visual inspections daily. The routine visual inspections are only performed by personnel trained as per Section 2.4.	
54.a	not discharge water into the TSF unless it is water contained within the Tailings stream which is at normal operational slurry densities;				1						4	Full Compliance	MRRM TSF Quarterly Report – September to November 2019 TSF Operations, Maintenance and Surveillance (OMS) Manual, 31Jul2020, Version 5.0 Appendix A - Routine daily inspection form  Operator advised that the mill has a target range for the slurry density and it is constantly monitored. Section 3.2.1.4 shows that densities consistently met the target density of between 50 and 55%. This condition is stated in the TSF Operations, Maintenance and Surveillance (OMS) Manual. Section 6.1 discusses the daily visual inspections, that include checking the density.	
54.b	deposit all Tailings sub-aerially to allow proper beaching and drying between deposition cycles;				1						4	Full Compliance	TSF Operations, Maintenance and Surveillance (OMS) Manual, 31Jul2020, Version 5.0 Appendix A - Routine daily inspection form  This condition is stated in the TSF Operations, Maintenance and Surveillance (OMS) Manual and incorporated in Section 4.1, which states that tailings delivered sub-aerially through offtake spigots located at approximately 50 m intervals.	
54.c	maintain surface water levels in the TSF such that they do not come into contact with the embankment internal walls; and				1						4	Full Compliance	TSF Operations, Maintenance and Surveillance (OMS) Manual, 31Jul2020, Version 5.0 Appendix A - Routine daily inspection form  This condition is stated in the TSF Operations, Maintenance and Surveillance (OMS) Manual. The Routine daily inspection form includes checking water levels and the minimum distance to the walls and this requirement is discussed in Section 6.1. Section 4.1 states that the embankments are not designed to be water retaining, and ponding must be kept a minimum of 50 m away from the embankment walls.	
54.d	manage the phreatic surface to avoid compromising the integrity of the embankment.				1						4	Full Compliance	TSF Operations, Maintenance and Surveillance (OMS) Manual, 31Jul2020, Version 5.0 Appendix A - Routine daily inspection form  This condition is stated in the TSF Operations, Maintenance and Surveillance (OMS) Manual. Section 4.1 states that the embankments are not designed to be water retaining, and ponding must be kept a minimum of 50 m away from the embankment walls.	
55	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:				1						4	Full Compliance	MRRM TSF Quarterly Report – September to November 2019 Attachment A – VWP Review September to November 2019 MRRM TSF Quarterly Report – Cover Letter (September to November 2019)  The quarterly report September to November 2019 was submitted to DPIR on 06Jan2020.	
55.a	water levels in the TSF;				1						4	Full Compliance	MRRM TSF Quarterly Report – September to November 2019  Refer Table 1 for monthly average levels.	
55.b	all monitoring data associated with the seepage (including geotechnical and environmental monitoring);				1						4	Full Compliance	MRRM TSF Quarterly Report – September to November 2019	
55.c	flow rate of each seep;				1						4	Full Compliance	MRRM TSF Quarterly Report – September to November 2019  Refer Figure 6 for daily volumes of seepage (flow rate of volume/day).	



2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
55.d	all actions undertaken during the quarter associated with the seepage and management of Tailings; and				1						4	Full Compliance	MRR TSF Quarterly Report – September to November 2019 The report meets this condition including Surprise Creek Seepage Interception Trench (Section 4.3), FIGURE 4. NEW SEEPAGE COLLECTION SYSTEM AT OLD SPILLWAY, Non-woven geotextile was placed over the southern embankment seepage and Section 3.4 TSF Stability).	
55.e	all actions planned for the next quarter associated with seepage and management of Tailings.[1]				1						4	Full Compliance	MRR TSF Quarterly Report – September to November 2019 Refer Table 3 for ongoing operational activities.	
56	The Operator is authorised to complete works to raise the embankment of the TSF in accordance with the document entitled McArthur River Mining Pty Ltd - Cell 2 TSF Stage 5 Raise to RL 10059 - Detailed Design Report – May 2018 (GHD Report), ensuring:				1						4	Full Compliance	Sighted MRM Cell 2 TSF Stage 5 Raise to RL 10059m. MRM Cell 2 TSF Stage 5 Raise to RL 10059m Section 1.2 refers to “Cell 2 TSF – Stage 5 Raise to RL 10059, Detailed Design Report”, GHD, May 2018 and Section 10 stated "Based on observations from engineering inspections and a thorough review of the construction records, it is the opinion of GHD that the TSF Cell 2 Raise 5 has been constructed to an appropriate standard, in line with the design intent."	
56.a	Construction reports including QA and QC data endorsed by the Independent Certifying Engineer (ICE) must be provided to the Department prior to the deposition of tailings within the Cell 2 Raise 5 storage capacity and within 30 days of construction being completed.				1						3	Part Compliance (High)	Sighted MRM Cell 2 TSF Stage 5 Raise to RL 10059m. Sighted email dated 24Aug2020. Construction was completed in 2018 however the as constructed report was not delivered to the department until 24Aug2020. Part compliance - high (due date missed).	The IM understands that the Operator is rolling out Risk Manager’s Environmental Obligations Register, to allow the relevant work areas to see and be accountable for requirements via actions being assigned directly to them when appropriate. Consider also assigning actions to members of the Environment Team to check in as a secondary measure.  OFI: Implement Risk Manager’s Environmental Obligations Register, which assigns actions and accountabilities. (Note: Operator has advised IM that Environmental Obligations Register is being commissioned in Q2 2021).
57	The operator is authorised to construct, operate and maintain Cell 2 Stage 6 embankment lift in accordance with:										-	-		
57.a	concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12, ensuring:				1						4	Full Compliance	Cell 2 Raise 6 Design Report 26.07.19_GHD_Draft A Enclosure 1 – ITRB Review and Endorsement (INDEPENDENT TAILINGS REVIEW BOARD (ITRB) - DOCUMENT COMMENT TRACKING REGISTER 1 September 2019) Ltr-DPIR (ITRB Endorsement Cell 2 Stage 6)  No inconsistencies with Condition 1.1.ii.12 were found.	Operator advised that construction is underway but not yet completed.
57.a.i	Detailed designs follow the approved McArthur River Mining Pty Ltd Tailings Storage Facility Raising General Specification for Design and Construction and must include design objectives that satisfies both engineering and environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives;				1						4	Full Compliance	Cell 2 Raise 6 Design Report 26.07.19_GHD_Draft A  TSF Cell 2 Embankment Raise - RL10061m Technical Specification September 2019, revision 0  The report includes evaluation of dam safety and environmental risks as recommended by ANCOLD (2012a), and presents strategies to manage and mitigate risk. A risk matrix is attached to the LOM Report that is consistent with the overall Operator EIS approach, and consists of implementing a 'likelihood and consequence' risk matrix, determining the rating for each identified risk, the control measures used to mitigate that risk, and then an assessment of the residual rating after taking these control measures into account. Section 7 discusses critical issues pertaining to construction, design validation, performance and the ongoing dam safety program for the Stage 6 Cell 2 TSF.  Section 2.4 Engineering Hold Points of the TSF Cell 2 Embankment Raise - RL10061m Technical Specification September 2019, revision 0 states "Mandatory Engineering Hold Points shall include those specified to ensure compliance with the intent of the designs and with other specified requirements, and to ensure that critical and/or irreversible activities are not constructed incorrectly."	
57.a.ii	The detailed designs must be reviewed and endorsed by the ITRB provided to the department prior to commencement of construction; and				1						4	Full Compliance	Enclosure 1 – ITRB Review and Endorsement (INDEPENDENT TAILINGS REVIEW BOARD (ITRB) - DOCUMENT COMMENT TRACKING REGISTER 1 September 2019) Ltr-DPIR (ITRB Endorsement Cell 2 Stage 6)  ITRB endorsement - GHD’s Draft Detailed Design Report for the McArthur River Mining Pty Ltd (MRM) Cell 2 TSF Stage 6 Raise to RL 10061 is endorsed by the ITRB as more than adequate. The Cell 2 TSF Stage 6 Raise to RL 10061 report included detailed design drawings. The ITRB endorsement was provided to DPIR on 02Sep2019 according to the evidence provided. Operator advised construction commenced on 03Sep2019.	

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
57.a.iii	Should future review of the designs by independent experts require additional matters to be addressed, the operator together with the ITRB must provide and implement a written response that justifies the existing design or proposes an alternate design to the satisfaction of the Department.				1						N/A	Not Applicable		No independent TSF panel have been formed to date. Future item.
57.b	at completion of the construction works the ICE must approve an "as constructed" construction report and updates to the TSF Operations, Maintenance and Surveillance Manual and TARPs. The construction report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied to the Department prior to the deposition of tailings.				1						N/A	Not Applicable		Future Item
<b>GEOCHEMICAL, GEOTECHNICAL AND HYDROGEOLOGICAL ASSESSMENTS AND INVESTIGATION DRILLING</b>														
58	The Operator is authorised to undertake Drilling Investigations as outlined in Conditions 1.(ii)(9) and 1.(ii)(12), ensuring adhering to industry best practice:	1									4	Full Compliance	<p>OPR 2018-2019 section 2.2 and Appendix A Regional Drilling and Investigation Program 2018-2019. In EMR 2020 section 2.2 and Appendix A 2019-2020 Drilling Register and Appendix V 2019 Hydrogeological Drilling and Field Campaign.</p> <p>OPR 2018-2019 states "MRM undertook a regional drilling program in 2018, which included 359 drill holes for hydrogeological testing, waste characterisation, alluvium cover definition and the installation of geotechnical and environment monitoring sites."</p> <p>"All drilling during the reporting period was undertaken in accordance with the 2013-2015 MMP."</p> <p>EMR 2019-2020 states "The Mine and BBLF operate in accordance with Variation of Authorisation 0059 and the 2013-2015 Mining Management Plan and its approved amendments. Key operational activities conducted during the reporting period included: [...] Exploration activities and a regional drilling program for hydrogeological testing, characterisation of waste materials and the installation of geotechnical and environmental monitoring sites."</p> <p>EMR 2019-2020 states "MRM undertook a series of regional drilling programs during the reporting period within MLN 1121, MLN 1122, MLN 1123, and MLN 1124, which included 237 drill holes for waste characterisation, alluvium cover definition, and resource development. MRM completed a total of 4,160 metres (m) of drilling, comprising 235 air core, and 2 diamond core holes. Operator also collected 668 soil samples for waste characterisation (Appendix A)."</p>	MLN 1122 and MLN 1124 were not nominated in the 2019 MMP, which is condition 1.(ii)(12) referred to in this condition. However, the 2020 MMP approved after the audit period includes all the drilling areas listed in the EMR 2019-2020: "Existing and proposed exploration and investigation activities are planned to continue, consistent with methods that have been previously approved: • exploration drilling within MLN 582, MLN 1121, MLN 1122, MLN 1123, MLN 1124, MA 366, MA 455 and MA 456;"
58.a	in order to collect samples for waste rock characterisation and geochemical and geotechnical analyses;			1		1	1				4	Full Compliance	OPR 2018-2019 section 2.2. EMR 2020 section 2.2. Performed as required.	
58.b	to characterise available construction and rehabilitation materials available within the Mine Levee Wall (including the pit) and areas surrounding the TSF and NOEF;			1	1	1					4	Full Compliance	OPR 2018-2019 section 2.2. EMR 2020 section 2.2. Performed as required.	
58.c	to enable geochemical assessment of the overburden emplacement facility and underlying sediments; and					1					4	Full Compliance	OPR 2018-2019 section 2.2. EMR 2020 section 2.2. Performed as required.	
58.d	to obtain hydrogeological information associated with pit inflows, groundwater inputs into the underground void and installation of additional monitoring bores to inform site management.	1		1							4	Full Compliance	OPR 2018-2019 section 2.2. EMR 2020 section 2.2. Performed as required.	

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
59	Characterisation data from the drilling must be kept and available to the Minister on request and reported in the Operator's Annual Operational Performance Report.	1									4	Full Compliance	OPR 2018-2019 section 2.2 and Appendix A Regional Drilling and Investigation Program 2018-2019 (not sighted). In EMR 2020 section 2.2 and Appendix A 2019-2020 Drilling Register (not sighted) and Appendix V 2019 Hydrogeological Drilling and Field Campaign (not sighted).  OPR 2018-2019 says that drilling data is included in Appendix A Regional Drilling and Investigation Program 2018-19 (no sighted). EMR 2020 says that drilling data is included in Appendix A 2019-2020 Drilling Register (not sighted).	No request by the Minister during the period.
60	All documentation relating to the geochemical assessment and alluvial investigation is to be made available to the Department on request.	1									N/A	Not Applicable		No request by the Minister during the period.
<b>ENVIRONMENTAL MONITORING</b>														
61	The Operator must collect and maintain the following to the satisfaction of the Minister:													
61.a	all environmental monitoring data which is contemplated in this document or the MMP or reasonably required for the proper implementation of this document or the MMP; and	1									4	Full Compliance	Operator does not dispose of records. Records are kept on an offsite Glencore server. All raw environmental monitoring data and laboratory analysis results from the lab are uploaded into the Monitor Pro Database.	
61.b	any other environmental monitoring records and data prepared or obtained by or in the possession of the Operator at any time in connection with the Mine (including for example, monitoring records or data submitted to the Commonwealth government).	1									4	Full Compliance	Data is retained on Operator server in folders. An example of an extra study is the swing basin and channel sediment material characterisation for use in the future dredge management plan. All data recorded and stored permanently.	
62	The Operator must ensure data contemplated by condition 58 is provided to a mining officer upon request and will not be destroyed without the written permission of the Minister.	1									4	Full Compliance	Verbally advised by Operator that all monitoring data and records are retained on MonitorPro and/or SharePoint indefinitely. ASW200405BM_WDL [Example of water monitoring project folder] Screenshot - Project folders of April 2020 Artificial and Natural Surface Water Monitoring [from MRM Intranet].  PRO-2200019 - Groundwater Data Logger Install and Download Procedure The current document control process involves archiving physical sample documentation completed by field staff (e.g. field sheets, Chain of Custody) for two years minimum, stored in the Operator Environment Office. Physical documentation is scanned and saved in 'sample project folders' on the Operator Intranet [...IM reviewed example]. Any inspection photos taken are saved in the 'sample project folder'. Laboratory documentation (e.g. lab reports, Certificates of Analysis) are received via email sent to a generic MRM Environment Team email address. Laboratory documentation is then saved in the corresponding 'sample project folder' on the MRM Intranet [IM reviewed example]. Laboratory results and field measurements are imported into the data management software program 'Monitor Pro 5', which undergoes a QA/QC process on a quarterly frequency prior to providing data to the DITT (as required by Condition 7). While physical copies are kept for minimum two years, electronic copies of files and data are stored on the MRM Intranet permanently. Groundwater logger data is downloaded in accordance with PRO-2200019[...IM reviewed example] and saved on the MRM Intranet. External consultants who conduct environmental monitoring save their data via their own methods. Monitoring program reports are prepared and provided to MRM by the consultant, who report on such data. Raw data tables are typically included as an appendix to the monitoring report. MRM can request data from consultants as required. Finalised reports are saved on the MRM Intranet, and included as attachments to the Environmental Mining Report."	No formal document control procedure exists.  Operator advised "Sampling undertaken by MRM technicians (e.g. surface water, groundwater, dust, soil). External Sampling is undertaken by Consultants (e.g. Indo Pacific Environmental aquatic fauna monitoring, fluvial sediment).  OFI: Prepare and implement a document control or retention procedure/policy.
63	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 Minister within 30 days of its establishment.									1	N/A	Not Applicable		Verbally advised no new water sampling locations during the audit period.

2019 Authorisation Condition No.		Condition/Requirement		DOMAIN								Score	Compliance Level	Evidence	Comments
				Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)				
64	Before 1 November 2016, the Operator must install and from then on maintain continuous monitoring devices. In this regard: a. devices must be installed in the following locations:										1	3	Part Compliance (High)	<p>Continuous monitoring difficult to achieve in extreme climate and waterways due to wet/dry seasons and unforeseen issues with monitoring equipment (e.g. buried in river sediment after wet season, retrieval in crocodile waterways, fire, equipment faults...)</p> <p>2018/19 Continuous Logger Data 2019/20 Continuous Logger Data</p> <p>Gauging Station Register (last updated 2019, equipment mostly unchanged) 2019 Servicing (correspondence from consultants Xylem following annual calibrations and maintenance) Gauging Station Annual Service Quotation - Xylem (Quote for the 2020/21 annual maintenance, includes equipment descriptions)"</p> <p>Monitoring devices are installed and Operator are maintaining these devices subject to extreme weather and site specific conditions. At SW29, SW30 and SW12 continuous monitoring loggers for flow, Ec and pH - equipment faults occur, especially during the wet season. Monitoring units are replaced immediately subject to real watercourse levels. There are regulatory constraints to building permanent monitoring structures e.g. AAPA certificate hence portable monitoring devices are utilised that are susceptible to faults due to extreme weather conditions. Operator does not have a set schedule to maintain these monitoring devices. Alerts are received if a device is not operating correctly and this is resolved asap. Servicing, calibration and maintenance are occurring based on evidence provided. Data was recorded for the majority of the wet season.</p>	OFI: Progress negotiations related to necessary approval requirements with other authorities to enable the construction of the permanent monitoring structures.
64.a.i	SW29 (upstream Surprise Creek outside the zone of influence of TSF);										1	3	Part Compliance (High)	<p>2018/19 Continuous Logger Data 2019/20 Continuous Logger Data</p> <p>2018/19 Continuous Logger Data includes SW29 although it says it was not observed to flow anytime during 18-19 Wet season. There are EC readings in late October and November 2018. 2019/20 Continuous Logger Data includes level, temp, conductivity and depth from 05Nov2019. CellVisor RTU logger installed.</p>	
64.a.ii	SCGS (Surprise Creek gauge station between the TSF and the Mine);										1	3	Part Compliance (High)	<p>2018/19 Continuous Logger Data 2019/20 Continuous Logger Data</p> <p>SW02. 2018/19 Continuous Logger Data as SW02 includes EC, temp and flow level. Flow data starts 01Nov2018 while the EC results are from 1 October. 2019/20 Continuous Logger Data includes SW02 from 05Nov2019 for level, temp, conductivity and depth. Note: 2018/19 Continuous Logger Data graph for SW02 shows flows plotted out of sync with the EC readings (e.g. the flow is not aligning with the X axis). CR800- Campbell Scientific + CellVisor RTU logger installed.</p>	
64.a.iii	SW30 (upstream Emu Creek);										1	3	Part Compliance (High)	<p>2018/19 Continuous Logger Data 2019/20 Continuous Logger Data</p> <p>2018/19 Continuous Logger Data includes level (m), temp and EC. Flow data and EC starts 27Oct2018. Note: 2018/19 Continuous Logger Data graph for SW30 shows flows plotted out of sync with the EC readings (e.g. the flow is not aligning with the X axis). 2019/20 Continuous Logger Data includes level, temp, conductivity and depth from 19 December 2019. CellVisor RTU logger installed.</p>	
64.a.iv	USGS (upstream at the McArthur River gauge station);										1	3	Part Compliance (High)	<p>2018/19 Continuous Logger Data 2019/20 Continuous Logger Data</p> <p>SW10. 2018/19 Continuous Logger Data includes EC, DO, pH, temp, level and flow. Flow data starts 01Nov2018 while the EC data starts 01Oct2018. 2019/20 Continuous Logger Data has no results for USGS/SW10. CR-1000- Campbell Scientific + CellVisor RTU logger installed for 2019/2020.</p>	

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN										Score	Compliance Level	Evidence	Comments	
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility						
64.a.v	BCGS (upstream at the Barney Creek gauge station);											1	3	Part Compliance (High)	2018/19 Continuous Logger Data 2019/20 Continuous Logger Data  SW04. 2018/19 Continuous Logger Data includes EC, pH and flow level. Flow data starts 15Nov2018 while the EC results are from 25Oct2018. 2019/20 Continuous Logger Data includes level, temperature, conductivity and depth from 20 December 2019. CellVisor RTU logger installed.	
64.a.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);											1	2	Part Compliance (moderate)	2018/19 Continuous Logger Data 2019/20 Continuous Logger Data  2018/19 Continuous Logger Data includes temp, EC, Salinity, nLF Cond, TDS and flow level. Flow data starts 01Nov2018 while the EC results are from 19 November. 2019/20 Continuous Logger Data states that SW12 has not been recovered yet. Note: 2018/19 Continuous Logger Data graph for SW12 shows flows plotted out of sync with the EC readings (e.g. the flow is not aligning with the X axis). SW12 is not included in the gauging stations register.	
64.b	devices must at a minimum measure electrical conductivity, and may measure additional parameters such as pH; and											1	4	Full Compliance	2018/19 Continuous Logger Data 2019/20 Continuous Logger Data  Operator advised that the monitoring devices measure EC, pH and flow and this was observed by the IM in 2018/19 Continuous Logger Data and 2019/20 Continuous Logger Data.	
64.c	the Operator must from 30 August 2017 include data from these devices in data submission under condition 7.	1										1	2	Part Compliance (moderate)	Correspondence 'MRM DPIR Data Q2 2020' reviewed. The email was reviewed but the attached spreadsheet was not provided (i.e. email not provided as an outlook file, jpg only).  Operator advised that continuous logger data was included in the Q2 2020 submission but not in previous submissions within the reporting period. The letter notes that SW04, SW12 and SW10 do not have continuous EC data due to equipment failures during the wet season. Acknowledge that while submissions didn't occur in the audit period that Operator appear to have commenced these submissions.	OFI: Submit continuous flow monitoring quarterly in the required template to the Department as required by condition 7.
65	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). In this regard:	1											4	Full Compliance	Letter - MRM Notification of Construction and Decommissioning of Monitoring Bores dated 01Apr2019 stated "The bores were constructed from 21 September to 12 October 2017 and 2 May to 7 August 2018 in accordance with the Minimum construction requirements for water bores in Australia published by the National Uniform Drillers Licensing Committee (third edition, February 2012)."	OBS: Develop a groundwater bore construction procedure to address conditions 65.a, 65.b and 65.c and reference the National Uniform Drilling Licensing Committee (NUDLC) requirements.
65.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 Operational Performance Report;	1											3	Part Compliance (High)	MRM keeps bore logs centrally, and they are provided in the EMR 2019-2020 in Appendix V, 2019 Hydrogeological Drilling and Field Campaign Appendix A and in the OPR 2018-2019 in Appendix.  Sighted a bore hole construction log for locations at the mine, TSF and Bing Bong.  MRM Notification of Construction and Decommissioning of Monitoring Bores dated 01Apr2019  Note the June 2019 version of the Authorisation (Condition 56), December 2018 version of the Authorisation (Condition 52) and July 2018 version of the Authorisation (Condition 50), that were relevant during the audit period, required submission of logs to the Minister within 30 days of completion. A letter/email dated 01Apr2019 did a reconciliation for bores constructed including in 2018 and therefore was not submitted within 30 days, which was required by the condition at the time.	June 2019 version of the Authorisation that was relevant during the audit period included the below conditions: 56.a construction logs must be provided to the Minister within 30 days of completion of construction; 56.b bore location coordinates in GDA 94 format must be provided to the Minister within 30 days of completion of construction;  An OFI was not prepared for this part compliance as the condition in the most recent Authorisation in the audit period was fulfilled.
65.b	logs of maintenance activities must be kept available to the Minister upon request; and	1											4	Full Compliance	Sighted Bore Audit File for 2019 Bore Audit.  No Specific maintenance program. However there was a bore audit undertaken in 2019 checking bore holes were in working order Sighted Bore Audit File. 171 Bores - falling head test, camera test, water quality, bore condition.	

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
65.c	logs of bore decommissioning activities must be kept and available to the Minister on request and reported in the Operator's Annual Operational Performance Report.	1									4	Full Compliance	<p>Correspondence 'MRM Notification of planned decommissioning of monitoring bores (July 2019)'. Decommissioning activities are reported in the EMR 2019-2020 (Section 4.3.2 and 2019 Hydrogeological Drilling and Field Campaign)</p> <p>Sighted bore decommissioning log. Sighted PRO 2200038 - Decommissioning of Groundwater Monitoring Bore Procedure.</p> <p>Decommissioned bore log</p> <p>Decommissioned log GW089S and D</p> <p>MRM Notification of Construction and Decommissioning of Monitoring Bores 1 April 2019</p> <p>MRM Notification of planned decommissioning of monitoring bores (July 2019)</p> <p>Location of the Decommissioned, Extended and Damaged Bores on the 2019 NOEF included in EMR 2019-2020.</p> <p>Note the June 2019 version (Condition 56), December 2018 version (Condition 52) and July 2018 version (Condition 50) of the Authorisation, required notification to the Minister in writing of proposed decommissioning and provision of logs of decommissioning activities within 30 days of completion of decommissioning.</p> <p>An email dated 17Jul2019 was submitted to the Department advising that Operator intended to decommission monitoring bores. An email/letter of submission of decommissioning logs to the Department was provided dated 01Apr2019. This includes decommissioning of one bore from November 2018 and so is not within 30 days of completion of decommissioning. These are minor non-conformances given that the condition has changed to the requirement to include in the annual Operational Performance Report.</p>	<p>Unable to locate section on decommissioned bores in OPR 2018-2019 (unnecessary as this condition only required reporting logs of bores decommissioning activities in the OPR from August 2019).</p> <p>June 2019 version of the Authorisation that was relevant during the audit period included the below conditions:</p> <p>56.d. if bores are subject to mining activities that will destroy or damage the bore, the Operator must notify the Minister in writing of the proposed decommissioning, and then must ensure the bores are decommissioned before the commencement of the relevant mining activities; and</p> <p>56.e. logs of decommissioning activities must be kept and provided to the Minister within 30 days of completion of decommissioning.</p>
66	The Operator must amend the MMP to include a livestock management plan clearly detailing how the ongoing exclusion of cattle from the Exclusion Area will be managed and monitored. The plan is to include monitoring schedules and remedial actions should monitoring detect cattle within the Exclusion Area, it should also detail the staff member or position responsible for ensuring compliance with the plan.	1									4	Full Compliance	<p>April 2017 to April 2018 Cattle Management Plan provided.</p> <p>Advised by the Operator inspection of exclusion fencing undertaken weekly and that the current practice is to use a helicopter every month to check the fence.</p> <p>The April 2018 Cattle Management Plan Figure 3 shows the cattle fence and electric fence surrounding the site (47km of fence), muster yard and lick blocks. Fence maintenance is included in Section 3.1.2. Fences and gates are inspected weekly with maintenance work undertaken as required. The fence will be replaced every 10 years.</p> <p>Section 5 includes responsibilities for verifying that actions are undertaken as described in the management plan by the Senior Rehabilitation Advisor and communicating roadblocks to compliance by the Manager - Environment, Safety &amp; People and Senior Rehabilitation Advisor.</p> <p>Section 3.2 States opportunistic cattle monitoring is undertaken weekly during the wet season whilst a helicopter is undertaking other work at site. All cattle sightings are reported to the Rehabilitation team and sightings are recorded in the Cattle Register. Mustering undertaken approximately every 6 weeks in the dry season.</p> <p>EMR 2019-2020 Table 11 states "Maintenance of the cattle exclusion fence was undertaken during the reporting period in accordance with the Cattle Management Plan." Section 3.11.5 "weekly routine fence inspections identifying sections requiring maintenance. Maintenance and repairs were completed as soon as practicable once a need was identified ..."</p>	<p>Sighted September 2019 Cattle Management Plan (not approved by the regulator during the audit).</p>
67	The Operator must remove all livestock and undertake all necessary actions or works to ensure the permanent exclusion of cattle from the Exclusion Area within MLN 1121, MLN 1122, MLN1123 and MLN1124.	1									4	Full Compliance	<p>Sighted responsibilities in the Cattle Management Plan.</p> <p>April 2018 Cattle Management Plan provided.</p> <p>Advised by the Operator that they have yards on site that the cattle can be yarded into in the event that they are found on the lease. Muster is completed once a month. Fences were all replaced the last two years due to degradation.</p> <p>EMR 2019-2020 Section 3.11.5 "In accordance with the current Cattle Management Plan, 11 cattle muster events were undertaken to maintain a cattle exclusion area surrounding mining operations. Cattle musters are scheduled for six-week intervals, or within seven days of cattle being sighted within the cattle exclusion area." Table 18 showed the details of the cattle sightings and mustering.</p>	



2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
68	The Operator must erect and maintain warning signage that is permanent and weatherproof and contains specific wording agreed to by the Chief Health Officer of the Northern Territory. Warning signage must be erected at appropriate distances and frequency along the waterway, and as a minimum be located at all access points, including but not limited to crossings, vehicle tracks and walking tracks. Warning signage must be maintained along the length of:								1		4	Full Compliance	The following files were provided: - Warning Signage Register 2019 (dated: 02Jul2019) - Attachment 1_Letter to DME regarding warning signage (dated: 04Feb2015).  Warning Signage Register 2019 provided showed photos of no unauthorised entry signage but not for all locations required by this condition. Operator Warning Signage photos (memo dated 11Nov2020 outside the audit period) viewed confirming no access signage is in place in all locations. Letter dated 04Feb2015 to Chief Health Officer from Operator advising of the agreed wording to be used on signage.	
68.a	Barney Creek downstream to its junction with the McArthur River;								1		4	Full Compliance	The following files were provided: - Warning Signage Register 2019 (dated: 02Jul2019) - Attachment 1_Letter to DME regarding warning signage (dated: 04Feb2015).	68a - Location 40
68.b	Barney Creek upstream to a point a short distance upstream of where the Carpentaria Highway crosses Barney Creek;								1		4	Full Compliance	The following files were provided: - Warning Signage Register 2019 (dated: 02Jul2019) - Attachment 1_Letter to DME regarding warning signage (dated: 04Feb2015).  Warning Signage Register 2019 provided showed photos of no unauthorised entry signage.	68b - Locations 7, 8, 9
68.c	Surprise Creek to approximately the location of SW29; and								1		4	Full Compliance	The following files were provided: - Warning Signage Register 2019 (dated: 02Jul2019) - Attachment 1_Letter to DME regarding warning signage (dated: 04Feb2015).  Warning Signage Register 2019 provided showed photos of no unauthorised entry signage.	68c - Location 17
68.d	Bing Bong shipping channel and in the immediate area surrounding the shipping channel and the swing basin.									1	4	Full Compliance	The following files were provided: - Warning Signage Register 2019 (dated: 02Jul2019) - Attachment 1_Letter to DME regarding warning signage (dated: 04Feb2015) - Warning Signage Inspection 2020 (outside audit period).	Signage is located at each entry point to the BBLF.
69	For the purposes of managing dust, to the satisfaction of the Minister:											-		
69.a	the Operator must employ dust mitigation and monitoring measures at the Mine and in the course of all mining activities which generate dust, to minimise dust emission and impact on the Receiving Environment;	1									4	Full Compliance	Sighted Water Cart Procedure PRO 3300011: Refer 6.3.9.  Refer Air Quality Management Plan (2020). 2017 version is in place at present until 2020 version is approved and put in place.  17 dust deposition monitors/gauges at the mine (more gauges planned in 2020). 6 at Bing Bong Loading Facility. The monitoring devices speciate the dust and contaminants landing at a site to identify higher risk locations.	
69.b	If dust is entering the Receiving Environment resulting in or having the potential to cause environmental harm the Operator must undertake works or change its systems or practices to reduce dust to levels which no longer cause potential or actual environmental harm; and	1									4	Full Compliance	Air Quality Management Plan (2017) Dust monitoring criteria and response actions described in Table 7-2 (Visual Dust Triggers and Associated Actions) and Table 9-1 (Performance Indicators/Trigger Levels and Responses - The Mine Site (year 2017)).  The Operator advised that an example of a system change in the dust monitoring was that dust deposition data was analysed to trace proportion of lead and zinc back to the source to implement targeted control solutions at the source.	SUCCESS: Continuous improvement to detect where dust from mining activities originates through additional dust deposition monitors which measure the proportion of lead and zinc to trace dust back to sources and targeting of control solutions at the source.
69.c	Any dust suppressant must be suitable for the location where it is to be used.	1									4	Full Compliance	2019/20 Site Water Balance for the McArthur River Mine Section 5.5.3  MRM advised that Dust suppression only occurs in operational areas. A sensitive area for dust management is Barney Creek Bridge. MRM advised "Refer to 2019/20 Site Water Balance for the McArthur River Mine Section 5.5.3. The water cart quickfill tank is filled with water from Open Pit Pete's Pond (OP PP) water. OP PP primarily collects water from the underground void, and is typically Class 5/6." Review of the 2019/20 Site Water Balance for the McArthur River Mine (Table 3.2 and 3.3) and Water Management Plan Plate 8 shows that outflows to water cart (dust suppression) were from OP PP (class 5), Mill OSD (class 5) and TSF WMD (class 4) for 2018/2019 (Table 3.2 and 3.3).	OFI: Optimise use of suitable quality water, potentially target better than class 5 water, for dust suppression in more sensitive locations (e.g. near to waterways).  Note: EMR 2019-2020 Table ES2 indicates that potential dust impacts have been identified and there are documented measures to address these in the 2020-2021 reporting period including trials of dust suppression binders/additives for watering of haul roads.  OBS: Any trials should include an assessment of the suitability of these dust suppressants for the proposed location of use.
70	For the purposes of managing chemicals and flammable or combustible liquids:											-		



2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
70.a	all hazardous chemicals, toxic substances, gases and dangerous goods associated with the Mine must be stored and handled in accordance with the current Australian Standard where such is applicable, and the laws of the Northern Territory; and	1									3	Part Compliance (High)	Multiple hazardous goods documents but no overarching hazardous goods procedure available. Sighted Hazardous Chemical Procedure: PRO2600003 511-0184_19089-ME-CAL-001_B - 100 kL Tank [design study on the chemical tank in PbOx area to determine if the tank was suitable to store caustic solution]. MET-TECH-SPEC-Acid Storage Tanks Design Report [independent inspection of the Sulphuric Acid storage tanks].  MRM advised that they comply with Australian Dangerous Goods Code for transport and labelling and that hazardous material storage is in accordance with the NT WHS regulations. Design Check Report for Acid Tanks May 2015 had the various Australian Standards as being used in carrying out the design and check of the Acid tanks including AS3780:2008 Storage and Handling of Corrosive substances.	OFI: Audit the storage, handling and management of chemicals, toxic substances, gases, dangerous goods and flammable or combustible liquids to demonstrate compliance with Australian Standards and NT legislation.
70.b	the Operator must 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 and includes regular integrity testing to ensure loss of containment or failure of the tanks does not occur.	1									4	Full Compliance	Sighted 2019-2020 works order for thickness testing for tanks and pipelines. MRM advised storage has a maintenance schedule in accordance with the dangerous goods legislation with reference to the relevant Australian Standards.  Leach Tank Inspection_Feb 19 [internal inspection on the PbOx leaching tanks during the recent concentrator shutdown]. Bulk Chemical Storage Audit [Work order export for recent internal inspections of bulk storage tanks].	Work orders are automatically generated to address the thickness. MRM cannot provide a screenshot of ELLIPSE to show how frequent the work orders are. MRM provided a snapshot of all the recent completed work orders.  OFI: Document the bulk storage tanks maintenance schedule to demonstrate compliance with Australian Standard/s and NT legislation.
<b>INDEPENDENT MONITORING ASSESSMENT CONDITIONS</b>														
71	These conditions may be cited as the "McArthur River Mine – Independent Monitoring Assessment Conditions".											-		These IM conditions are not relevant to the Operator.
72	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.											-		These IM conditions are not relevant to the Operator.
73	The Department will engage an Independent Monitor to undertake the independent monitoring assessment.											-		These IM conditions are not relevant to the Operator.
74	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.	1									4	Full Compliance	MRM has participated fully in the compliance audit interviews and responded to all requests for supporting information in addition to undertaking their obligations and statutory responsibilities in relation to the mine.	
75	The Independent Monitor will:											-		These IM conditions are not relevant to the Operator.
75.a	monitor the environmental performance of the Mine by reviewing:											-		These IM conditions are not relevant to the Operator.
75.a.i	environmental assessments and monitoring activities undertaken by the Operator; and											-		These IM conditions are not relevant to the Operator.
75.a.ii	environmental assessments and audits undertaken by the Department; and											-		These IM conditions are not relevant to the Operator.
75.b	report to the Operator and the Department any urgent issues requiring investigation and reporting.											-		These IM conditions are not relevant to the Operator.
76	The Independent Monitor will not review:											-		These IM conditions are not relevant to the Operator.
76.a	Mine safety; or											-		These IM conditions are not relevant to the Operator.
76.b	social issues arising from the operation of the Mine in the McArthur River Region.											-		These IM conditions are not relevant to the Operator.
77	The Department will engage an Independent Monitor in accordance with its procurement processes.											-		These IM conditions are not relevant to the Operator.
78	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 have the necessary expertise, relevant											-		These IM conditions are not relevant to the Operator.
79	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:											-		These IM conditions are not relevant to the Operator.
79.a	the conditions of tendering; and											-		These IM conditions are not relevant to the Operator.
79.b	the scope of services; and											-		These IM conditions are not relevant to the Operator.
79.c	the assessment criteria; and											-		These IM conditions are not relevant to the Operator.

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
79.d	the conditions of contract.											-		These IM conditions are not relevant to the Operator.
80	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.	1									4	Full Compliance	The Operator participated in the evaluation and selection of the IM including the proposals and budgets and appointment of the IM.	
81	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.											-		These IM conditions are not relevant to the Operator.
82	The terms of engagement of the Independent Monitor may include the following:											-		These IM conditions are not relevant to the Operator.
82.a	a period of engagement between three and five years;											-		These IM conditions are not relevant to the Operator.
82.b	a statement acknowledging that the Operator is responsible for the costs of the Independent Monitor;											-		These IM conditions are not relevant to the Operator.
82.c	a warranty by the Independent Monitor that it will:											-		These IM conditions are not relevant to the Operator.
82.c.i	act independently of the Department, the Operator, the Minister and any other person; and											-		These IM conditions are not relevant to the Operator.
82.c.ii	act honestly, reasonably and with the degree of professional care, knowledge, experience, skill and diligence which may reasonably be expected; and											-		These IM conditions are not relevant to the Operator.
82.c.iii	act within the time prescribed under these conditions, the terms of engagement, or where no time is prescribed, within a reasonable time; and											-		These IM conditions are not relevant to the Operator.
82.c.iv	immediately notify the Department in writing upon becoming aware of the existence or possibility of a conflict of interest;											-		These IM conditions are not relevant to the Operator.
82.d	an obligation on the Independent Monitor to keep all information provided to the Independent Monitor confidential.											-		These IM conditions are not relevant to the Operator.
83	If the Independent Monitor requires an indemnity, the Operator must enter into a binding agreement providing a reciprocal indemnity to the Department.	1									N/A	Not Applicable		None was required.
84	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.											-		These IM conditions are not relevant to the Operator.
85	The Operator and the Department must not interfere or attempt to influence the Independent Monitor in its assessment of environmental performance under these conditions.	1									4	Full Compliance	MRRM has participated fully in the compliance audit interviews and responded to all requests for supporting information without interfering or attempting to influence the IM.	
86	The Operator and the Department must each:											-		
86.a	cooperate with the Independent Monitor; and	1									4	Full Compliance	MRRM has participated fully in the compliance audit interviews and responded to all requests for supporting information.	
86.b	provide all necessary information and documents within their possession, custody or control to the Independent Monitor; and	1									4	Full Compliance	MRRM has participated fully in the compliance audit interviews and responded to all requests for supporting information.	
86.c	procure for the Independent Monitor access to such premises owned, leased, or licensed by it as may be reasonably necessary,	1									4	Full Compliance	Task 2 mine site familiarisation visit March 2020.	
86.d	to enable the Independent Monitor to undertake its assessment of environmental performance under these conditions.	1									4	Full Compliance	MRRM has participated fully in the compliance audit interviews and responded to all requests for supporting information.	
87	The Independent Monitor must engage with the Operator, the Department and the Community in undertaking the independent monitoring assessment.											-		These IM conditions are not relevant to the Operator.
88	If the Independent Monitor identifies an issue it considers requires urgent investigation and reporting:											-		These IM conditions are not relevant to the Operator.
88.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											-		These IM conditions are not relevant to the Operator.

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
88.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	1									N/A	Not Applicable		The IM has not identified an issue it considers requires urgent investigation and reporting within the audit period.
88.c	the Department may, where appropriate, advise the Operator and the Independent Monitor of action the Department proposes to take; and											-		These IM conditions are not relevant to the Operator.
88.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	1									N/A	Not Applicable		The IM has not identified an issue it considers requires urgent investigation and reporting.
88.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											-		These IM conditions are not relevant to the Operator.
88.f	the Operator and the Department must facilitate the Independent Monitor's investigation and report.	1									N/A	Not Applicable		The IM has not identified an issue it considers requires urgent investigation and reporting.
89	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.											-		These IM conditions are not relevant to the Operator.
90	The Independent Monitor must prepare and provide a report:											-		
90.a	Annually to the Minister to assist with the review of the Mining Management Plan; and											-		These IM conditions are not relevant to the Operator.
90.b	on request by the Minister.											-		These IM conditions are not relevant to the Operator.
91	The Minister must provide a report received from the Independent Monitor to the Operator and the Department within 14 days of receiving the report.											-		These IM conditions are not relevant to the Operator.
92	The Independent Monitor must prepare an additional report in a form suitable for distribution to the Community.											-		These IM conditions are not relevant to the Operator.
93	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.	1									N/A	Not Applicable		The IM is aware that the understanding from the Operator is that the report will be made publicly available.
94	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.	1									N/A	Not Applicable		This is a future requirement following completion of the report.
95	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 75 b which are the responsibility of the Department.	1									4	Full Compliance	The Operator participated in the evaluation and selection of the IM including the proposals and budgets and appointment of the IM.	
96	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.											-		These IM conditions are not relevant to the Operator.
97	The Operator must pay an amount notified in accordance with condition 96 within 7 days of receiving such notice.	1									N/A	Not Applicable		No relevant IM invoices in the audit period.
98	If the Operator disputes a notice provided by the Department under condition 96:											-		
98.a	the Operator must pay the amount specified in the notice in accordance with condition 97; and	1									N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
98.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	1									N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
98.c	the Chief Executive of the Operator and the Chief Executive of the Department must meet within 5 working days to resolve the dispute.	1									N/A	Not Applicable		The IM is not aware of any disputes in the audit period.

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Placement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
99	If there is a dispute (other than a dispute mentioned in condition 98) 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 5 working days to resolve the Dispute.	1									N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
100	If the Chief Executive of the Operator, the Chief Executive of the Department and the Independent Monitor are unable to resolve a Dispute within 10 working days of meeting in accordance with condition 99, the Operator and the Department may agree to the appointment of an independent party to assist in the resolution of the Dispute.	1									N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
101	If, within 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.	1									N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
102	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.	1									N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
103	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.	1									N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
104	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.	1									N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
105	The Operator and the Department must:											-		
105.a	Bear their own costs of resolving the Dispute under this condition; and	1									N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
105.b	Bear equally the costs of any independent party engaged.	1									N/A	Not Applicable		The IM is not aware of any disputes in the audit period.
<b>OVERBURDEN MANAGEMENT PROJECT</b>														
106	The operator must ensure activities related to the McArthur River Overburden Management Project are implemented in accordance with:											-		Future Item. The OMP has not commenced on the basis that MMP is not yet approved (based on the audit period). MMP approval granted 13Nov2020.
106.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); and	1					1				N/A	Not Applicable		Future item. EIS has a commitments chapter. The OMP has not been approved so it is not possible to audit against the commitments. Future item.
106.b	Recommendations in the NT EPA Assessment Report 86, where they are approved under an MMP, as defined in Condition 1.1 of the Authorisation. If there is any inconsistency between the above documents, the most recent authorisation shall prevail to the extent of any inconsistency.	1					1				N/A	Not Applicable		Future Item. The OMP has not commenced on the basis that MMP is not yet approved (based on the audit period). MMP approval granted 13Nov2020.
107	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, in accordance with clause 14A of the Environmental Assessment Administrative Procedures 1984.	1					1				N/A	Not Applicable		Future Item.

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
108	Within 18 months of authorisation[1] of the Overburden Management Project, the Operator must submit a plan to the Department for review, that:									1	N/A	Not Applicable		Future Item. The OMP has not commenced on the basis that MMP is not yet approved (based on the audit period). MMP approval granted 13Nov2020.
108.a	Enables measurement of total loads of lead and zinc and is consistent with requirements of Condition 117;									1	N/A	Not Applicable		Future Item.
108.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 38.c), taking into account seasonal variations in rainfall, and subject to future annual load calculations;									1	N/A	Not Applicable		Future Item.
108.c	includes recommendations and outcomes arising from audits of loads by the Independent Monitor; and									1	N/A	Not Applicable		Future Item.
108.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 Adaptive Management Plan (Condition 131).									1	N/A	Not Applicable		Future Item.
sub 108	Unless otherwise agreed in writing by the Department. The plan, once approved by the Department must be implemented.									1	N/A	Not Applicable		Future Item.
109	Within 18 months of authorisation of the Overburden Management Project, the Operator must submit a plan to the Department for review, that shall include:									1	N/A	Not Applicable		The OMP has not commenced on the basis that MMP is not yet approved (based on the audit period). MMP approval granted 13Nov2020.
109.a	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 117; and									1	N/A	Not Applicable		Future item.
109.b	a commitment that creeks on the mine site to show long-term improving trends in water quality within 20 years after cessation of mining.									1	N/A	Not Applicable		Future item.
sub 109	The plan, once approved by the Department must be implemented. The relevant findings from the plan must be incorporated into the Adaptive Management Plan (AMP).	1									N/A	Not Applicable		Future item.
110	Within 18 months of authorisation of the Overburden Management Project, the Operator must calculate contaminant loads and contaminant concentrations entering creeks and the McArthur River using system modelling.									1	N/A	Not Applicable		Future Item.
sub 110	The modelling must use suitable site-specific data collected as part of Condition 117 and be subject to review by the relevant independent panel at three year intervals. Specific assumptions to be tested include but are not limited to:									1	N/A	Not Applicable		Future Item. Refers to the independent panels review which do not yet exist. The department has opted to start with the community reference group as priority, followed by the technical panels.
110.a	groundwater flow paths; and									1	N/A	Not Applicable		Future item.
110.b	attenuation of metals from mine-derived wastes				1		1			1	N/A	Not Applicable		Future item.
sub 110	The Operator must provide a written response to the Department, if an independent technical panels, required under Condition 113, review of the models and modelling outputs, and the data collection programs that informed the model development include recommendations and/or improvements. All relevant outputs must be used to inform and update the Adaptive management Plan.	1									N/A	Not Applicable		Future item.
111	From the date of this approval, an independent environmental audit of the Quality Assurance (QA) and Quality Control (QC) procedures and waste rock identification and handling performance must be undertaken at intervals of every three years.	1								1	N/A	Not Applicable		Future Item: Due 2022.

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
sub 111	The results of the audit are to be provided to the Department within 6 weeks and to the relevant independent panel. 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.	1					1				N/A	Not Applicable		Future item.
112	From the date of this approval, new areas of the NOEF foundation development (i.e. areas at base level) that do not currently contain PAF wastes must include a compacted clay layer (CCL) or, an engineered low permeability liner, of at least 0.5m thickness and maximum saturated hydraulic conductivity of 1 x 10-9 metres per second, above which future PAF wastes are to be stored.						1				4	Full Compliance	NOEF Central West Phase Design, Construction and Operations Manual (MIN-TEC-PLN-1000-0002). NOEF Central East Alpha Stage Complete Design Report (April 2019). Refer to Section 6.1.1.1  Section 2.5.2 of EMR provides information around the quantity of samples taken including permeability for the basal clay liner and that basal CCL development continued in CW Charlie. Section 9.5.2 of NOEF Central West Phase Design, Construction and Operations Manual Table 20 includes the Required properties of basal clay liner after compaction of hydraulic conductivity of 1 x 10-9 metres per second. Section 6.2 This base will have a 500 mm thick CCL for stages Alpha and Bravo. Section 9.5.1 Quality assurance shall be undertaken by the Survey Department to ensure that a minimum 0.5m thickness is achieved throughout for the clay liner for the basal CCL. NOEF Central East Alpha Stage Complete Design Report. Refer to Section 6.1.1.1 discusses the in-situ foundations of Central East will have a lower permeability than the minimum design criterial of 0.5 m thick engineering basal CCL at 10-9 metres per second. New areas of the Basal CCL will target performance equivalent or better to 0.5 m of CCL with a maximum saturated hydraulic conductivity of 10-9 m/s.	
113	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 in accordance with the relevant NT EPA recommendation.	1			1		1				N/A	Not Applicable		Future item. Must be administered by the Department to remain independent of MRM. MRM will provide the funding and feedback where applicable. Future item as funding has not yet been provided.
114	Within 12 months 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:	1					1		1		N/A	Not Applicable		Future item. The OMP has not commenced on the basis that MMP is not yet approved (based on the audit period). MMP approval granted 13Nov2020.
114.a	controls seepage to the Barney Creek diversion channel and the McArthur River						1		1		N/A	Not Applicable		Future item.
114.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;						1		1		N/A	Not Applicable		Future item.
114.c	facilitates achieving requirements of Conditions 108 and 109.						1		1		N/A	Not Applicable		Future item.
sub 114	The Operator must write to the Department responding to any comments received from the NOEF independent panel on the report. The report, once approved by the Department must be implemented by the nominated timeframes.						1		1		N/A	Not Applicable		Future item.
115	Within 24 months 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:						1				N/A	Not Applicable		Future Item. The OMP has not commenced on the basis that MMP is not yet approved (based on the audit period). MMP approval granted 13Nov2020.
115.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; and						1				N/A	Not Applicable		Future Item.  Success: Operator has commenced the cover system trial early with the Department's approval, enabling several years of monitoring and analysis prior to the formal commencement of the condition.
115.b	include implementation of trials on rehabilitated stages of the NOEF						1				N/A	Not Applicable		Future Item.



2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
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sub 115	All relevant performance parameters must be monitored, including but not limited to: slope stability during extreme events cover performance as a result of heat effects tolerance of the geosynthetic liner to expected differential settlement veracity of cover longevity predictions likely long-term maintenance requirements. Reporting of trial results and monitoring outcomes shall be provided within three years from the plans submission, and 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.  The plan, once approved by the Department must be implemented. The relevant outcomes of trials and monitoring must be used to inform the Adaptive Management Plan and closure planning for the mine.						1				N/A	Not Applicable		Future Item.
116	The Operator must submit a strategy to the Department within five years of authorisation of the Overburden Management Project that details the long-term disposal management of tailings within/ into the mine pit void, submerged under a suitable depth of pit water. The plan must:	1									N/A	Not Applicable		Future item. Future proposal to place tailings in the pit void following reprocessing of the tailings
116.a	include strategies on the tailings reprocessing and assessment of residual chemical contaminants that may likely impact on meeting the requirements of Condition 108; and	1									N/A	Not Applicable		Future Item.
116.b	be reviewed by the relevant independent panel.	1									N/A	Not Applicable		Future Item.
sub 116	The strategy, once approved by the Department must be used to develop a plan, 5 years prior to cessation of mining, for approval by the Department. Any requirement to vary the approved disposal strategy or plan must be:	1									N/A	Not Applicable		Future Item.
sub 116.a	Applied for in writing to the Minister;	1									N/A	Not Applicable		Future Item.
sub 116.b	Based on leading practice and site conditions / context;	1									N/A	Not Applicable		Future Item.
sub 116.c	Supported by the relevant independent panel; and	1									N/A	Not Applicable		Future Item.
sub 116.d	Notified to the NT EPA in accordance with Condition 107.	1									N/A	Not Applicable		Future Item.
117	Within 12 months of authorisation of the Overburden Management Project, the Operator must review and synthesise all available and relevant information to submit a revised water monitoring program/ 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. The plan must be able to allow assessment of compliance to Condition 108 and include sufficient detail to inform/develop/update the Adaptive Management Plan. The program/ plan, at a minimum must:	1							1		N/A	Not Applicable		Future Item. The OMP has not commenced on the basis that MMP is not yet approved (based on the audit period). MMP approval granted 13Nov2020.
117.a	quantify loads of lead and zinc entering the McArthur River each year;								1		N/A	Not Applicable		Future Item.
117.b	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 as low as is reasonably practicable;								1		N/A	Not Applicable		Future Item.
117.c	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.								1		N/A	Not Applicable		Future Item.




2019 Authorisation Condition No.		Condition/Requirement		DOMAIN									Score	Compliance Level	Evidence	Comments	
				Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility					
sub 117		The revised program/plan must:												-			Future Item.
sub 117.a		be prepared in consultation with the NT EPA;									1			N/A	Not Applicable		Future Item.
sub 117.b		be prepared in consultation with the relevant independent panel.									1			N/A	Not Applicable		Future Item.
sub 117		The plan, once approved by the Department must be implemented. Any variation and/or updates to the program/ plan (e.g.to maintain the currency of the monitoring network), must be undertaken in consultation with the relevant independent panel.									1			N/A	Not Applicable		Future Item.
sub 117		The results of the program must be reported annually to the Department and audited by the Independent Monitor every three years. The results of the program together with any audits/review findings must be published on the Operator's website.									1			N/A	Not Applicable		Future Item.
118		Within 18 months 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. The results of this program must be integrated with other relevant programs monitoring programs and management plans. The plan, once approved by the Department must be implemented.		1							1			N/A	Not Applicable		Future item requirement as not required until within 18 months of the OMP approval (approval occurred on 13Nov2020). Operator has commenced the Ecotoxicological program in 2019.  Success: Operator commenced the Ecotoxicological (ecotoxicology potential impact assessment and monitoring of receiving environment biota relevant to the McArthur River system) program ahead of approval of the 2020 MMP, enabling early monitoring and analysis of data prior to the formal commencement of the condition. Commitment within the OMP EIS and requirement of Authorisation; Aims to develop Site Specific Guideline Values (SSGVs) for downstream compliance, protection of on lease refuge pools and for mixing zone guidelines; Wet and dry season program to account for seasonal changes that can affect analyte toxicity e.g. hardness and dissolved organic carbon; Target analytes – determined through COPC review and generally consistent with the OMP EIS; Arsenic, cadmium, copper, lead, sulphate, thallium and zinc. Program design based on guidance from Australian and New Zealand Water Quality Guidelines (ANZG, 2018); Test water sourced from the McArthur River at SW07 upstream of the mine; Combination of acute and chronic tests with acute data to be converted to chronic data for derivation of GVs; 7 species for dry season and 9 species for wet season (3 wet season species sourced locally); and Program targets derivation of moderate reliability GVs for dry season conditions and high reliability GVs for wet season conditions.
119		Within 18 months of authorisation of the Overburden Management Project, the Operator must submit an aquatic ecosystem monitoring program to the Department for review, that provides improved understanding of aquatic ecosystems in the McArthur River from changing water flows, levels and quality, including available dry season habitat. The program must:		1							1			N/A	Not Applicable		Future item. The OMP has not commenced on the basis that MMP is not yet approved (based on the audit period). MMP approval granted 13Nov2020.
119.a		assess impacts of the mine on water levels in refuge pools/waterholes, upstream and downstream of the mine, including in the McArthur River diversion channel;									1			N/A	Not Applicable		Future Item
119.b		assess impacts of the mine on water quality in refuge pools/waterholes in the dry season; and									1			N/A	Not Applicable		Future Item
119.c		assess impacts of the mine on the health of aquatic biota in the McArthur River using non-lethal sampling methods.									1			N/A	Not Applicable		Future Item
sub 119		The program must be designed to be integrated with requirements of the Adaptive Management Plan (Condition 131 and Condition 132). The program, once approved by the Department must be implemented.									1			N/A	Not Applicable		Future Item

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
120	At all times, the Operator must conduct works consistent with the Northern Territory Aboriginal Sacred Sites Act and valid Aboriginal Areas Protection Authority certificate (AAPA). 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.	1					1				4	Full Compliance	MRM maintains an AAPA artefact register and in 2019 there was an audit. MRM AAPA Certificate Compliance Report 2020 (draft) - Title Page and TOC provided.  Internal dig and clear certificates are required prior to any disturbance. Internal dig and clear procedure includes a community management relations check of AAPA certificates. Sighted Permit to Clear Operational Area FRM-2200001. While unable to review the MRM AAPA Certificate Compliance Report 2020 (draft), this could be provided to the Minister if requested.	
121	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 Minister for Resources, the Operator and the Minister for Tourism and Culture must be undertaken prior to seeking endorsement of the design.	1					1				4	Full Compliance	Fencing installed around a 50m buffer of archaeological sites MRM4 excluding all access to the area. Sighted archaeological site exclusion signage during site visit March 2020.	
122	Within six months of authorisation of the Overburden Management Project, the Operator must provide a report to the Minister, and AAPA or the Minister for Tourism and Culture (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 maybe affected by the Overburden Management Project.	1					1				N/A	Not Applicable		Future item. Submitted already and in progress with Minister.
123	The Operator must develop or revise and submit an existing air quality plan within 12 months of this Authorisation to the Department for review, that monitors sulfur dioxide emissions at an appropriate location between the NOEF and sensitive receptors determined in consultation with NT EPA.	1					1				N/A	Not Applicable		Future item. Air Quality Management Plan (AQMP) was submitted as an appendix with the Mine Management Plan (MMP) 31Jan2020.
sub 123	The monitoring plan must include 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. Evidence of consultation with the NT EPA must be provided at the time of the plan submission. The plan, once approved by the Department must be implemented. The results of the plan for each reporting frequency made available on the Operator's website and incorporated/updated/revise, where relevant, with the Adaptive Management Plan. Initial monitoring results to be reported within 6 months of the plan being accepted by the Department.	1					1				N/A	Not Applicable		Future item. The OMP had not commenced in the audit period on the basis that the MMP was not approved at that time. Approval granted after the audit period in the latest Authorisation 13Nov2020.
124	Within 24 months 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:									1	N/A	Not Applicable		Future item. The OMP had not commenced in the audit period on the basis that the MMP was not approved at that time. Approval granted after the audit period in the latest Authorisation 13Nov2020.
124.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;									1	N/A	Not Applicable		Future item.
124.b	include demonstrated evidence of consultation with NT EPA, on advice of the Chief Health Officer;									1	N/A	Not Applicable		Future item.
124.c	detail public reporting of the monitoring results, including at appropriate locations in the Borrooloola region; and									1	N/A	Not Applicable		Future item.
124.d	include provisions for implementation and maintenance of signage at waterways at the MRM site in accordance with the requirements of Condition 68 until the risk of contamination from consumption of this aquatic fauna is negligible.									1	N/A	Not Applicable		Future item.

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN									Score	Compliance Level	Evidence	Comments
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility				
125	The plan, once approved by the Department must be implemented Within 24 months of authorisation of the Overburden Management Project, the Operator must submit a plan to the Department for review, that outlines monitoring program for management of Largetooth Sawfish. The plan must:									1	N/A	Not Applicable		Future item. The OMP had not commenced in the audit period on the basis that the MMP was not approved at that time. Approval granted after the audit period in the latest Authorisation 13Nov2020.
125.a	include a sampling strategy for Largetooth Sawfish that is non-lethal;									1	N/A	Not Applicable		Future item
125.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; and									1	N/A	Not Applicable		Future item
125.c	include trigger levels for investigation and implementation of management measures.									1	N/A	Not Applicable		Future item
sub 125	The plan, once approved by the Department must be implemented.									1	N/A	Not Applicable		Future item
126	Within six months following the establishment of the required panels and groups, the Operator must in consultation with the relevant Independent Panels, Community Reference Group, custodians and traditional owners, develop environmental objectives for a Care and Maintenance Plan, and submit this to the Department for review.	1									N/A	Not Applicable		Future item. Panels not established in the audit period.
sub 126	The environmental objectives must be used to develop a Care and Maintenance Plan in consultation with the Department within five years of authorisation of the Overburden Management Project.	1									N/A	Not Applicable		Future item. The OMP had not commenced in the audit period on the basis that the MMP was not approved at that time. Approval granted after the audit period in the latest Authorisation 13Nov2020.
127	The Operator must facilitate an independent third-party assessment of the security for rehabilitation of authorised activities in the approved MMP as defined in Condition 1.l, to the satisfaction of the Department, and every 3 years thereafter if the security has been re-calculated or adjusted. The Operator must commission a qualified person within 3 months of the authorisation of the Overburden Management Project, whose appointment is to be accepted by the Minister. The first assessment of the security should occur within 6 months of acceptance of the qualified person by the Minister.	1									4	Full Compliance	Sighted the MRM Mine Rehabilitation Planning Rehabilitation Security Audit. Email dated 10Jul2020 with the subject McArthur River Mine Security - Independent Third-Party Assessment  Evidence was provided in the form of an email between Operator and the Department that the Department accepted the qualified person (company).	
128	For every approved MMP and MMP amendment, the Operator must provide a revised copy of the approved document that removes commercially sensitive information and is suitable for publication on the Department's website, or provide written approval to make the complete documents publicly accessible.	1									4	Full Compliance	MMP created and provided a public version of the MMP dated 31Jan2020.	
129	The Operator must assist, as required, the Department to establish and operate a Community Reference Group in accordance with the relevant NT EPA recommendation.	1									4	Full Compliance	MRM provided CRG assistance in the form of suggested membership and funding.	Advised that DPIR are aiming to establish the CRG in early 2021.
130	Within 18 months of authorisation of the Overburden Management Project, the Operator must undertake a synthesis of all environmental monitoring programs 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 (Condition 108). The revised monitoring programs must:	1								1	N/A	Not Applicable		Future item. The OMP had not commenced in the audit period on the basis that the MMP was not approved at that time. Approval granted after the audit period in the latest Authorisation 13Nov2020.
130.a	use outputs generated for review and synthesis of water monitoring programs, as part of addressing Condition 117;	1								1	N/A	Not Applicable		Future item.
130.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); and	1								1	N/A	Not Applicable		Future item.
130.c	be incorporated in the AMP.	1								1	N/A	Not Applicable		Future item.
131	Within 18 months of authorisation of the Overburden Management Project, the Operator must submit an Adaptive Management Plan to the Department, which includes the following key elements:	1									N/A	Not Applicable		Future item. The OMP had not commenced in the audit period on the basis that the MMP was not approved at that time. Approval granted after the audit period in the latest Authorisation 13Nov2020.

2019 Authorisation Condition No.	Condition/Requirement	DOMAIN										Score	Compliance Level	Evidence	Comments	
		Governance/General	Non-mineral Waste Management	Open Pit/Underground Workings	Tailings Storage Facility	Water Management and Storages	Overburden Emplacement Facilities	Exploration	Waterways (including river diversion)	Bing Bong Loading Facility						
131.a	clear, measurable environmental objectives for all significant environmental risks and potential impacts;	1											N/A	Not Applicable		Future item.
131.b	measurable performance indicators to show that objectives are on target to be met;	1											N/A	Not Applicable		Future item.
131.c	pre-determined triggers to warn of potential for performance indicators to be exceeded, as informed by monitoring;	1											N/A	Not Applicable		Future item.
131.d	realistic and achievable contingency interventions to maintain performance indicators if triggers are consistently exceeded;	1											N/A	Not Applicable		Future item.
131.e	clearly defined management measures/actions that are capable of being implemented in a timely way to meet performance indicators and environmental objectives;	1											N/A	Not Applicable		Future item.
131.f	monitoring in accordance with relevant Recommendations in this Report to determine whether management measures are effective and to inform the need for adjustments to management measures or need for alternatives;	1											N/A	Not Applicable		Future item.
131.g	a continual feedback system to inform appropriate actions to be initiated when triggered and environmental objectives are always being met;	1											N/A	Not Applicable		Future item.
131.h	continual development of new management actions as required based on knowledge gained from experience at the site and elsewhere across industry.	1											N/A	Not Applicable		Future item.
sub 131	The AMP must be reviewed by the Independent Monitor or an appropriately qualified, independent third party, and updated with requirements of the Community Reference Group (CRG) (once established under Condition 129), with all review findings and CRG input requirements to be provided to the Department for approval.	1											N/A	Not Applicable		Future item.
132	Unless agreed otherwise in writing by the Department, the Adaptive Management Plan must:													-		Future item.
132.a	clearly set out the required management objectives and performance indicators;	1											N/A	Not Applicable		Future item.
132.b	provide clarity on the triggers for changes to management actions, and responsibility and evidentiary basis for decision-making;	1											N/A	Not Applicable		Future item.
132.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;	1											N/A	Not Applicable		Future item.
132.d	establish a process for adjusting triggers that includes the regulator;	1											N/A	Not Applicable		Future item.
132.e	establish transparent monitoring, reporting and review requirements;	1											N/A	Not Applicable		Future item.
132.f	establish processes to achieve transparency and stakeholder engagement in Adaptive Management Plan design and implementation that includes NT EPA, DEE and Community Reference Group; and	1											N/A	Not Applicable		Future item.
132.g	set out the mechanism for periodic review by Independent Monitor, which must not exceed a frequency of every three years.  Any amendments to the AMP must be provided to the Department for re-approval.	1											N/A	Not Applicable		Future item.
sub 132	Any amendments to the AMP must be provided to the Department for re-approval.	1											N/A	Not Applicable		Future item.
133	The Operator must provide written notice to the Minister and to the NT EPA (under clause 14A of the Environmental Assessment Administrative Procedures 1984) where trends indicate performance indicators and environmental objectives will not or are unlikely to be met by implementing the Adaptive Management Plan.	1											N/A	Not Applicable		Future item.



**Appendix B**  
Waste Discharge Licence  
Compliance Workbook – Operator

Waste Discharge Licence Compliance Workbook - Operator

Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
<b>Operator Audit - WDL174-11 (28 April 2019 - 28 April 2021)</b>					
<b>GENERAL</b>					
1	The licensee must ensure the contact details recorded with the Administering Agency for this licence are correct at all times	4	Full Compliance	Contact details sited on NT EPA website.	OBS: Operator's General Manager contact details previously provided to NT EPA. NT EPA website awaiting to be updated.
2	The licensee must at all times have a 24 hour emergency contact	4	Full Compliance	Emergency contact number in operation.  24 hour number: 89758222, this number is diverted to Mill Control phone number (24/7) if unanswered. Refer condition 12.2.	
3	The licensee must notify the Administering Agency prior to making any operational change that will cause, or is likely to cause, an increase in the potential for environmental harm.	N/A	Not Applicable	Sighted meeting agenda between Operator and DENR dated 18Jul2019.	Advised by the Operator there are no examples of operational changes that will cause, or were likely to cause, an increase in the potential for environmental harm occurring in the audit period. Regular meetings occur with DENR to provide operational updates.
4	The licensee must cause clear and legible signage, in English, to be displayed in a prominent location at each public entrance to the premises that includes the following details:		-		See sub-conditions 4.1 to 4.2 below.
4.1	waste discharge licence number issued under the Water Act ; and	4	Full Compliance	Located at entrance to site. Photo provided. Mine site gate house the TSF and at Bing-Bong.	
4.2	24 hour emergency contact details .	4	Full Compliance	Located at entrance to site. Photo provided. Mine site gate house the TSF and at Bing-Bong.	
5	The licensee must cause a copy of this licence to be available for inspection by any person, in hard copy form, at the premises	4	Full Compliance	Copies held in relevant offices.  Paper copies of current WDL held in the offices of the Superintendent Environment, HSEC Manager and GM as well as other senior managers.	
6	The licensee must provide to the Administering Agency, within 10 business days of a request, a copy of any document, monitoring data or other information in relation to the activity, must be provided in electronic form by emailing waste@nt.gov.au unless otherwise specified.	N/A	Not Applicable		The Operator advised there was no request from the Administering Authority within the audit period. A 2020 response (outside of the audit period) to a request for additional monitoring was provided within a week in 2020.
7	All notices, reports, documents or other correspondence required to be provided as a condition of this licence, unless otherwise specified as a condition of this licence, must be provided in electronic form to the Administering Agency.	4	Full Compliance	Advised by Operator that information always emailed to the DENR general correspondence waste email address.  Always sent to the waste email address and CC'd to the DENR Relevant officer and Director.	
8	The licensee must maintain and implement the current version of the documents listed: Communication Plan Waste Discharge Licence (WDL 174-10) and Emergency Response Plan McArthur River Mining	4	Full Compliance	Consultation and Communication Plan sighted document number: MRMDPI1716A dated April 2017. Emergency Response Plan: MPN-26000001 Version 8 (2020) is current.	OBS: Consultation and Communication Plan is not date stamped which was advised as not uncommon for older documents.
9	Within 10 business days of any amendment being made to a document listed in Error! Reference source not found [sic]. The licensee must provide the amended document to the Administering Agency, along with (3 parts):	N/A	Not Applicable		No updates have been made during the licence period of the WDL. The document will be updated when the new licence is issued.
9.1	a tabulated summary of the amendment(s) with document references;	N/A	Not Applicable		Pertains to the Communication Plan and Emergency Response Plan. Typically minor revisions and updates included at the time of licence renewal every two years.
9.2	reasons for the amendment(s) ; and	N/A	Not Applicable		Pertains to the Communication Plan and Emergency Response Plan. Typically minor revisions and updates included at the time of licence renewal every two years.
9.3	an assessment of environmental risk associated with the amendment(s) .	N/A	Not Applicable		Pertains to the Communication Plan and Emergency Response Plan. Typically minor revisions and updates included at the time of licence renewal every two years.
10	The Administering Agency may require the licensee to revise or amend and resubmit any amended document or document provided in accordance with this licence . Where the administering Agency requires a document to be resubmitted, the licensee must submit it to the Administering Agency by the date specified by the Administering Agency.	N/A	Not Applicable		The Operator advised there were no resubmission requests during the period audited.
11	The licensee must operate and maintain a community feedback number.	4	Full Compliance	The Operator website has an Information line 1800 211 573 and also includes the site switchboard phone number (+61 8 8975 8179) that operates 24/7 prominently located in the contact us section.	The IM also viewed on the Operator website that enquiries can also be made via email on an online form.
12	The licensee must display the community feedback number:		-		
12.1	where the licensee has a website , in a prominent location on the licensee's website:	4	Full Compliance	The Operator website has an Information line 1800 211 573 and also includes the site switchboard phone number (+61 8 8975 8179) that operates 24/7 prominently located in the contact us section.	
12.2	in the Communication Plan Waste Discharge Licence ; and	4	Full Compliance	Sighted the Mill Control phone number 08 8975 8132 that is operated 24/7 detailed on the front cover of the Consultation and Communication Plan.	
12.3	in other publicly available documents relating to the activity.	4	Full Compliance	The IM viewed on the NT EPA website the MRM Overburden Management Project EIS Section E.2 Project Proponent that includes the Information line 1800 211 573 and an email address.	Advised the contact number was previously provided on fact sheets circa 2016 (outside the audit period).



Waste Discharge Licence Compliance Workbook - Operator

Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
13	The licensee must maintain a Complaint Log for all complaints received by the licensee in relation to the activity	4	Full Compliance	Sighted community complaints log.	Advised by the Operator that the community team maintain the complaints log. Complaints are also sent onto the site safety system BSAFE. If there were any submissions (complaints) that relate to the environment, a detailed report would be sent to the EPA under section 14. Only two community complaints were received within the audit period, both of which did not relate to the WDL. Sensitivity around personal data - not captured in BSAFE records for privacy reasons.
<b>WASTE DISCHARGE LICENCE (WDL 174-11)</b>					
14	The licensee must ensure that the Complaint Log includes, for each complaint received by the licensee, the following information:	3	Part Compliance (High)	Sighted community complaints log. The complaints information listed in subconditions 14.1 to 14.10 is not consolidated into a central location.	Note: no WDL complaints within the audit period. Only two community complaints 2018-2020.  OFI: Consolidate information collected for complaints into one central location by having a single community complaints register to contain all the required complaints information listed in 14.1 to 14.10.
14.1	the person to whom the complaint was made;	4	Full Compliance	Sighted community complaints log.	Community members' names are not published for privacy reasons.
14.2	the person responsible for managing the complaint;	4	Full Compliance	Sighted community complaints log.	The safety system records any relevant incidents, investigations and reports to the BSAFE system.
14.3	the date and time the complaint was reported;	4	Full Compliance	Sighted community complaints log.	Incidents are detailed in external reporting as required by legislation.
14.4	the date and time of the event(s) that led to the complaint;	4	Full Compliance	Sighted community complaints log.	
14.5	the contact details of the complainant if known, or where no details are provided a note to that effect;	4	Full Compliance	Sighted community complaints log.	
14.6	the nature of the complaint;	4	Full Compliance	Sighted community complaints log.	
14.7	the nature of event(s) giving rise to the complaint;	4	Full Compliance	Sighted community complaints log.	
14.8	prevailing weather conditions at the time (where relevant to the complaint)	4	Full Compliance	Sighted community complaints log.	
14.9	the action taken in relation to the complaint, including any follow-up contact with the complainant; and	4	Full Compliance	Sighted community complaints log.	
14.10	if no action was taken, why no action was taken.	4	Full Compliance	Sighted community complaints log.	
<b>EARLY SURRENDER OF LICENCE</b>					
15	Any reports, records or other information required or able to be provided by the licensee under this licence must be submitted to the Administering Agency prior to the licensee surrendering the licence. If the date on which a report, record or other information is required falls after the date the licensee requests to surrender this licensee, the licensee must provide the report, record or information as far as possible using data available to the licensee up to and including the date the request to surrender the licence is made.	N/A	Not Applicable		Future action
<b>OPERATIONAL</b>					
16	The licensee must, without limiting any other condition of this licence, in conducting the activity do all things reasonable and practicable to ensure the activity does not adversely affect the Declared Beneficial Uses and Objectives and Sites of Conservation Significance as declared from time to time, including those applying to:		-		
16.1	McArthur River Area: Aquatic ecosystem protection, recreational water quality and aesthetics (Gazette references G9 11 March 1998 and G20 27 May 1998);	4	Full Compliance	WDL 174-11 Annual Monitoring Report 2019-20 McArthur River Area listed as a beneficial use in Section 2.2 and executive summary WDL 174-11 Annual Monitoring Report 2019-20 states " The review also concluded that the beneficial uses and community values of the McArthur River continued to be protected from potential mining impacts."	
16.2	McArthur River Catchment Area: Environment, cultural and riparian (Gazette references G10 14 March 2001);	4	Full Compliance	WDL 174-11 Annual Monitoring Report 2019-20 McArthur River Catchment Area listed as a beneficial use in Section 2.2 and executive summary WDL 174-11 Annual Monitoring Report 2019-20 states " The review also concluded that the beneficial uses and community values of the McArthur River continued to be protected from potential mining impacts."	
16.3	SOCs Number 33: Sir Edward Pellew Island group;	4	Full Compliance	WDL 174-11 Annual Monitoring Report 2019-20 Sir Edward Pellew Island group listed as a beneficial use in Section 2.2 and executive summary WDL 174-11 Annual Monitoring Report 2019-20 states " The review also concluded that the beneficial uses and community values of the McArthur River continued to be protected from potential mining impacts."	



Waste Discharge Licence Compliance Workbook - Operator

Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
16.4	SaCS Number 34: McArthur River coastal floodplain; and	4	Full Compliance	WDL 174-11 Annual Monitoring Report 2019-20  McArthur River coastal floodplain listed as a beneficial use in Section 2.2 and executive summary WDL 174-11 Annual Monitoring Report 2019-20 states " The review also concluded that the beneficial uses and community values of the McArthur River continued to be protected from potential mining impacts."	
16.5	sacs Number 35: Borroloola area.	4	Full Compliance	WDL 174-11 Annual Monitoring Report 2019-20  Borroloola area listed as a beneficial use in Section 2.2 and executive summary WDL 174-11 Annual Monitoring Report 2019-20 states " The review also concluded that the beneficial uses and community values of the McArthur River continued to be protected from potential mining impacts."	
17	The licensee must ensure any plant and equipment used by the licensee in conducting the activity:		-	Sighted Procedure PRO-2200023 Natural Surface Water (NSW) Monitoring Procedure.  The licensee has a maintenance department that would oversee all equipment on site (whole mine) Operator has a training department that trains and coordinates personnel to be competent in their roles. With respect to environmental monitoring, there are SOPs that require sign off. sighted Mobile Maintenance Department Guideline GDL3200003.  See below	
17.1	is reasonably fit for purpose and use to which it is put;	4	Full Compliance	Couple of small vessels and ATVs on hand to reach sampling points.	
17.2	is maintained; and	4	Full Compliance	Environmental monitoring mobile equipment, including trailers and vessels (boat) is maintained in accordance with the Mobile Maintenance Department Guideline GDL3200003. Monitoring equipment is maintained and calibrated by site staff. The monitoring team uses the whiteboard to schedule calibration and maintenance of site loggers on a monthly basis.	
17.3	is operated by a person trained to use the plant and equipment.	4	Full Compliance	Monitoring Procedure, Fluvial sediment monitoring procedure, groundwater monitoring procedure etc. Personnel review the procedure and sign the acknowledgement when it is updated. They will be trained for 30 days prior to being allowed to undertake the monitoring. Personnel will also have their own qualifications.	
18	No change, replacement or alteration of plant and equipment is permitted if the change, replacement or alteration increases the risk of environmental harm for the licenced activity, unless approved by the Administering Agency.	N/A	Not Applicable		WDL not changed during the audit period.  If a material change was to be made to how the monitoring is undertaken this would be discussed with the Department to manage any potential environmental risk. e.g. Gauging station installation ground disturbance.
<b>WASTE DISCHARGE LICENCE (WDL-11)</b>					
19	The licensee must submit a Dredging and Dredge Spoil Management Plan to the Administering Agency 20 business days prior to the commencement of any dredging activities.	N/A	Not Applicable		No dredging within audit period. The last dredge activity that took place was in 2014.
20	The licensee must comply with the Dredging and Dredge Spoil Management Plan.	N/A	Not Applicable		Any ongoing water quality monitoring occurring at the Bing Bong Loading Facility is captured under this WDL.
<b>DISCHARGES</b>					
<b>DISCHARGES TO WATER</b>					
21	This licence authorises discharge to water from the authorised discharge point(s) as identified in Table 2 and Appendix 2, and as otherwise allowed in accordance with the conditions of this licence.	N/A	Not Applicable		General - N/A
22	The licensee must ensure that all discharge events at each authorised discharge point consist only of waste from the source(s) as specified in Table 2.	N/A	Not Applicable	There were no discharge events between 28Apr2019 and 30Apr2020 (WDL 11).	On-site Water Management Strategy McArthur River Mine sighted. MPN-22000008. Sighted Weekly Water Quality Review 25th August 2020.  On-site Water Management Strategy McArthur River Mine. Any release events follow this strategy. Site water is managed by classifying water into six classes which determines the appropriate use.  Note: compliance assessed in subconditions 22.1 to 22.6 below.
Table 2	Mine Levee Discharge Point(s) (MLDP) (Mine levee pumping outlets) 1. Rain water collecting in the old McArthur River Channel (NC1A) inside the Mine levee.	4	Full Compliance	There were no discharge events between 28Apr2019 and 30Apr2020 (WDL 11).	There were no discharge events between 28 April 2019 and 30 April 2020 (WDL 11) and no indication of potential discharges from locations other the authorised discharge points.  Environment team measures water quality in all artificial storages weekly to produce a weekly water quality report. Sighted 25Aug2020 Water Quality Review. This process has been in place for at least two years.
Table 2	Mine Levee Discharge Point(s) (MLDP) (Mine levee pumping outlets) 2. Groundwater from dewatering bores around main pit collected in and then discharged from Pond 2 (P2).	4	Full Compliance	There were no discharge events between 28Apr2019 and 30Apr2020 (WDL 11).	There were no discharge events between 28Apr2019 and 30Apr2020 (WDL 11) and no indication of potential discharges from locations other than the authorised discharge points.

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Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
Table 2	Mine Levee Discharge Point(s) (MLDP) (Mine levee pumping outlets) 3. Water from the Water Management Dam.	4	Full Compliance	There were no discharge events between 28Apr2019 and 30Apr2020 (WDL 11).	There were no discharge events between 28Apr2019 and 30Apr2020 (WDL 11) and no indication of potential discharges from locations other than the authorised discharge points.
Table 2	Mine Levee Discharge Point(s) (MLDP) (Mine levee pumping outlets) 4. Treated water from the Water Treatment Plant that will be stored in (P2) prior to discharge from the MLDP.	4	Full Compliance	There were no discharge events between 28Apr2019 and 30Apr2020 (WDL 11).	There were no discharge events between 28Apr2019 and 30Apr2020 (WDL 11) and no indication of potential discharges from locations other than the authorised discharge points.
Table 2	South-East Levee 1 Discharge Point: Rain water collecting inside the South Eastern Levee and separated from all contaminated seepages. Discharges are pumped via pipe line to Barney Creek and then flow into the McArthur River. Discharge can only occur when flow as measured in the McArthur River at the downstream gauging station is in excess of 20m <sup>3</sup> /s.	4	Full Compliance	There were no discharge events between 28Apr2019 and 30Apr2020 (WDL 11).	There were no discharge events between 28 April 2019 and 30 April 2020 (WDL 11) and no indication of potential discharges from locations other than the authorised discharge points.
Table 2	Dredge Spoil Drain (BBDDP): The dredge spoil perimeter drain exit point (BBDDP) is located on the tidal mudflats to the east of the loading facility and within a tidal area. The drain is constructed around the external boundary of the dredge spoil cells to intercept saline water and extends approximately 400 metres from the final cell. The drain receives overflow from: 1. the final dredge spoil emplacement area cell when in operation; 2. saline water from the perimeter drain which surrounds the dredge spoil emplacement area. At BBDDP passive releases flow across the intertidal flats to the Gulf of Carpentaria via the Bing Bong navigation channel. For the purposes of clarity this licence does not authorise dredging and/or pumping or disposal of dredge slurry to the Dredge Spoil Encasement Area.	N/A	Not Applicable	No dredging activities at BBLF in the audit period.	Advised by the Operator that no active discharge from dredge spoil drain occurred during audit period and the last dredging was 2014.
23	The licensee must, for discharge points MLDP and SEL1 DP, install, operate and maintain a device to measure and record, for each discharge event:		-	There were no discharge events between 28 Apr2019 and 30Apr2020 (WDL 11) .  Sighted waste discharge procedure PRO-2200035 Version 20 16Nov2019. Flow meters are operating on the discharge points. Pre wet season program of works involves checking equipment (pipelines, valves and flow meters) to ensure all equipment is in working order.	Sighted Monthly Discharge Monitoring Report January 2019 (Relevant to WDL 10).
23.1	the time the discharge commenced and the duration of the discharge;	4	Full Compliance	Flow meters are operating on the discharge points. Pre wet season program of works involves checking equipment (pipelines, valves and flow meters) to ensure all equipment is in working order.	
23.2	the discharge rate of flow; and	4	Full Compliance	Flow meters are operating on the discharge points. Pre wet season program of works involves checking equipment (pipelines, valves and flow meters) to ensure all equipment is in working order.	Water Management Team - in charge of live data pertaining to flow rates. SCADA System.
23.3	the discharge volume.	4	Full Compliance	Flow meters are operating on the discharge points. Pre wet season program of works involves checking equipment (pipelines, valves and flow meters) to ensure all equipment is in working order.	
24	The licensee must ensure that the discharge from all discharge events at each authorised discharge point does not:		-	Sighted example field sheet for McArthur River Surface Water 19-09.  Refer to sub conditions.	Notes are taken during the sampling event. Issues are reviewed and a check is completed as to whether the issue identified requires further investigation. Advice has been sought from Superintendent Environment should an unexplained observation be made. If further investigation is required, Operator will call on IPE for specialist aquatic advice.
24.1	contain any floating debris, oil, grease, petroleum hydrocarbon sheen, scum, litter or other objectionable matter;	4	Full Compliance	Sighted example field sheet for McArthur River Surface Water 19-09 that includes a comments section with prompts for floating debris, litter, surface sheen.	
24.2	cause or generate odours which would adversely affect the use of surrounding waters;	4	Full Compliance	Sighted example field sheet for McArthur River Surface Water 19-09 that includes a comments section with prompts for odours and algal blooms.	
24.3	cause algal blooms in the receiving water;	4	Full Compliance	Sighted example field sheet for McArthur River Surface Water 19-09 that includes a comments section with a prompt for algal blooms.	Operator has provided feedback that algal bloom tends to occur during dry season (low flow) ie not during periods when discharge would occur (wet season).
24.4	cause visible change in the behaviour of fish or other aquatic organisms in the receiving water;	4	Full Compliance	Sighted example field sheet for McArthur River Surface Water 19-09 that includes a comments section with a prompt for animals and dead fish/insects.	
24.5	cause mortality of fish or other aquatic organisms; or	4	Full Compliance	Sighted example field sheet for McArthur River Surface Water 19-09 that includes a comments section with a prompt for animals and dead fish/insects.	

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Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
24.6	cause adverse impacts on plants.	4	Full Compliance	Sighted example field sheet for McArthur River Surface Water 19-09 that includes a comments section with a prompt for dying vegetation.	
	<b>WASTE DISCHARGE LICENCE (WDL174-11)</b>				
	<b>MONITORING</b>				
25	The licensee must conduct surface water monitoring in accordance with Appendix 4.	3	Part Compliance (High)	<p>Sighted water quality monitoring spreadsheet. MRM Monitoring Schedule Current 2019 2016-2017 Water Monitoring Schedule - Final Rev3 WMD RP Monitoring Data (WMD discharge March 2019) March 2019 Monthly Discharge Report and email WDL 174-11 Annual Monitoring Report 2019-20 EMR Appendix T Environmental Monitoring Report 201920 - Surface Water</p> <p>Water quality monitoring was scheduled as required by Appendix 4 for BB DSD1 to BB DSD4 included under Artificial Surface Water and BBDDP under Surface Water &amp; Fluvial Sed in MRM Monitoring Schedule Current 2019. In EMR Appendix T Surface Water Monitoring Annual Report 2019/20 Appendix II - Monitoring Schedule Table II-1 Natural Surface Water Monitoring Schedule 2019/2020 and Table II-2 Natural Surface Water Monitoring Schedule 2018/2019 do not include the requirement for weekly monitoring at BBDDP when dredging is occurring. BBDDP appears to be scheduled to be monitored monthly when flowing but does not appear to be scheduled to be monitored weekly when dredging is occurring, which is required by Appendix 4. IM understands that no dredging has occurred during the audit period.</p> <p>WMD RP Monitoring Data was checked for SW06 for the dates of 24, 25 and 31 March 2019 and complied with the analytes required by Appendix 4. These were cross checked against the March 2019 Monthly Discharge Report and email and WMD RP Monitoring Data (WMD discharge March 2019). SW06, SW11, SW21 and SW12 all had the same analytes and sampling in the schedule as required by appendix 4.</p> <p>Listed as non-compliance in annual return for continuous monitoring of DO over reporting period and Sampling at SW08 and SW32 in April 2020 reported 13 April 2020. WDL 174-11 Annual Monitoring Report 2019-20 included the required analytes checked for SW11.</p>	<p>OFI: Add a note to the internal Operator Monitoring Schedule for Bing Bong Dredge Spoil Drain to communicate that monitoring frequency is required to be increased to weekly during any future dredging activities.</p> <p>OFI: Progress negotiations related to necessary approval requirements with other authorities to enable construction of the permanent monitoring structures e.g. Glyde River.</p>
26	The licensee must conduct fluvial sediment monitoring in accordance with Appendix 5.	4	Full Compliance	<p>Environmental Monitoring Report 2019-2020 EMR Appendix L - Monitoring of Metals and Lead Isotope Ratios in Fluvial Sediments, Fish, Crustaceans and Molluscs of the Limmen, McArthur, and Robinson Rivers, 2019</p> <p>EMR included all required fluvial sediment sampling locations. EMR Appendix L included all the required sampling analytes in tables in its appendix, except lead isotope ratios that appear to be included for tissue samples only in the tables in its appendix. The lead isotope ratios for fluvial sediment are included in Figure 15.</p>	
27	The licensee must conduct biota monitoring in accordance with Appendix 6.	4	Full Compliance	<p>EMR - Appendix P - Annual Seagrass Survey of the Bing Bong Loading Facility, 2019.</p> <p>As an example, the seagrass requirements from Appendix 6 of the licence were checked against EMR Appendix P - Annual Seagrass Survey of the Bing Bong Loading Facility, 2019.</p>	
28	The licensee must ensure that all samples and field environmental data are representative of the conditions at the time of sampling.	4	Full Compliance	<p>Sighted NSW Monitoring Procedure.</p> <p>Operator procedure based on Australian Standards. Provides guidance on composite samples from ranges of depth and site specific sampling techniques</p>	
29	The licensee must ensure that all samples and field environmental data are collected in accordance with recognised Australian Standards and guidelines (such as AS/NZS 5667, ANZECC/ARMCANZ).	4	Full Compliance	<p>Sighted NSW Monitoring Procedure.</p> <p>Operator procedure based on Australian Standards. Provides guidance on composite samples from ranges of depth and site specific sampling techniques</p>	
30	The licensee must ensure that all monitoring samples are analysed at a laboratory with current NATA accreditation or equivalent, for the parameters to be analysed in the laboratory.	4	Full Compliance	The IM sighted the MRM Environmental Laboratory Chemical Analysis Report that shows NATA accreditation 19675 ISO/IEC17025 testing. Report ENV2000089 samples received: 29Mar2020 and report date 18Apr2020.	Some samples sent to Murdoch University e.g. metals, flora and fauna, ecology went to Murdoch University. Northern Territory Environmental Laboratories (NTEL) Darwin NATA accredited lab is the backup lab if the Operator's lab is not available.
31	The licensee must ensure that any proposed revisions to the monitoring required by Condition 25 to 27 (other than typographical changes or revisions to formatting or referencing) are:		-		
31.1	reviewed by a suitably qualified professional, who must produce a written report about their review;	N/A	Not Applicable		Operator monitors in accordance with conditions 25-27.
31.2	submitted to the Administering Agency with justification for revisions; and	N/A	Not Applicable		Operator monitors in accordance with conditions 25-27.

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Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
31.3	submitted to the Administering Agency, in both hard copy and electronic form (with a complete copy of the qualified professional's review), 20 business days prior to the proposed implementation date.	N/A	Not Applicable		Operator monitors in accordance with conditions 25-27.
32	The licensee must for all land based water monitoring points specified in the monitoring documents:		-		
32.1	install and maintain appropriate identification signage so that they are reasonably identifiable at all times; and	4	Full Compliance	The Operator advised that signage was updated for WDL174-11 in 2019 and previously in 2011.	
32.2	maintain safe access and egress, as is reasonable and practicable.	4	Full Compliance	Example include: installation of safety chains. Wet season helicopter landing pads for sampling access. Operator operates extensive safety system for all mine site activities.	Equipment has been installed in various locations that may become dangerous to access.
33	The licensee must ensure any samples collected in accordance with the monitoring documents or in connection with the activity or this licence, are obtained by, or under the supervision of a qualified sampler.	4	Full Compliance	Sighted NSW Monitoring Procedure. Operator procedure based on Australian Standards.	
34	The licensee must ensure that, for each sample collected in accordance with the monitoring documents or the activity the following information must be recorded and retained:		-		
34.1	the date on which the sample was collected;	4	Full Compliance	Sighted chain of custody dated: 09Jun2020. Date sampled included. Sighted field data sheet.	
34.2	the time at which the sample was collected;	4	Full Compliance	Sighted chain of custody dated: 09Jun2020. Time collected included. Sighted field data sheet.	
34.3	the location at which the sample was collected;	4	Full Compliance	Sighted chain of custody dated: 09Jun2020. Sample ID which is relevant to designated monitoring locations. Sighted field data sheet.	
34.4	the name of the person who collected the sample;	4	Full Compliance	Sighted chain of custody dated: 09Jun2020. Person that dispatched the samples included. Sighted field data sheet.	
34.5	the chain of custody forms relating to the sample;	4	Full Compliance	Sighted chain of custody dated: 09Jun2020.	
34.6	the field measurements (if any) and analytical results (if any) relating to the sample;	4	Full Compliance	Sighted chain of custody dated: 09Jun2020. Sighted field data sheet. Field data sheet for 19 September includes field measurements.	
34.7	laboratory quality assurance and quality control documentation.	4	Full Compliance	Screenshot taken of Water Quality QAQC data example Apr20 by the IM.  AA007636-Quality_Report AA011033-Quality_Report AA012435-Quality_Report  The IM also reviewed App V - Surface Water Monitoring Report, 2018-19 from OPR. Not included in EMR surface water report as there was no discharge.	
<b>RECORDING AND REPORTING</b>					
35	The licensee must keep records of all non-compliances with this licence. These records must be adequate to enable the licensee to comply with the non-compliance notification conditions of this licence.	4	Full Compliance	Sighted Worksheet in VOA and WDL Condition Compliance Status_SL3 Sheet - Waste Discharge Licence - Exceedance Register 2019.  Approximately 15 SW11 exceedances reported in 2018. A register is kept for each calendar year. Non-compliance has often occurred during periods of extreme dry. Comparisons have been made upstream of the site to show and indicate that the mine is not the root cause of the exceedances, which are more likely a result of the seasonal variation.	
36	The licensee must notify the Administering Agency of any non-compliance with this licence as soon as practicable after (and in any case within 24 hours after) first becoming aware of the non-compliance.	4	Full Compliance	Sighted WDL exceedance register 2019.	
37	The licensee must include in the notification of non-compliance the following information:		-	Sighted WDL exceedance register 2019.	Ambient water quality levels exceed the assigned criteria - not related to mine activities. Registered as a non-compliance to DENR.
37.1	when the non-compliance was detected and by whom;	4	Full Compliance	Sighted WDL exceedance register 2019.	
37.2	the date and time of the non-compliance;	4	Full Compliance	Sighted WDL exceedance register 2019.	
37.3	whether discharge was occurring at the time of the non-compliance and the source of the discharge; and	4	Full Compliance	Sighted WDL exceedance register 2019.	
37.4	a date when an incident investigation report will be submitted to the Administering Agency.	4	Full Compliance	Sighted WDL exceedance register 2019.	Advised by the Operator that an incident is reported within 24 hours of becoming aware. Following receipt of laboratory sampled result, report is submitted to the administering agency.
38	Within 10 business days of notifying the Administering Agency of any non-compliance, or a timing otherwise agreed by the Administering Agency, the licensee must provide the Administering Agency an investigation report that includes:	N/A	Not Applicable	Sighted a condition 38 report IR011 related to 16Feb2020, 26Feb2020 and 01Mar2020 for nitrate at SW11.	Acknowledgement of receipt received back from the Department.
38.1	when the non-compliance was detected and by whom;	4	Full Compliance	Sighted a condition 38 report IR011 related to 16Feb2020, 26Feb2020 and 01Mar2020 for nitrate at SW11. State detected by Operator Environment Team on review of analysis on 7 March 2020.	

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Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
38.2	the date and time of the non-compliance;	4	Full Compliance	Sighted a condition 38 report IR011 related to 16 February 2020, 26 Feb 2020 and 01Mar2020 for nitrate at SW11. Table 1 includes dates and times.	
38.3	whether discharge was occurring at the time of the non-compliance and the source of the discharge; and	4	Full Compliance	Sighted a condition 38 report IR011 related to 16Feb2020, 26Feb2020 and 01Mar2020 for nitrate at SW11. Table 1 includes a column for if waste discharge is occurring, which it wasn't on this situation.	
38.4	the actual and potential causes and contributing factors to the non-compliance;	4	Full Compliance	Sighted a condition 38 report IR011 related to 16Feb2020, 26Feb2020 and 01Mar2020 for nitrate at SW11. "The investigation concluded that the subject results were sourced from background areas of the McArthur River located upstream of SW21. As such, the results could not be attributed to MRM or its operations."	
38.5	the risk of environmental harm arising from the non-compliance;	4	Full Compliance	Sighted a condition 38 report IR011 related to 16Feb2020, 26Feb2020 and 01Mar2020 for nitrate at SW11. Considered low in the condition 38 report.	
38.6	all water quality monitoring data collected in accordance with Appendix 4 for monitoring sites SW6, SW9, SW11, SW12, SW21, SW27, SW24, SW26, SW30, SW28 and SW29 (as shown in Appendix 2) collected for the date the non-compliance was triggered and three sampling rounds prior to the non-compliance being detected;	4	Full Compliance	Table 3 of the condition 38 report sighted.	
38.7	available flow rates for the McArthur River, Barney Creek and Surprise Creek and flow rate at SW11 to demonstrate any influence these creeks and rivers may have had on the exceedance of trigger value;	4	Full Compliance	Table 2 of the condition 38 report sighted.	
38.8	rainfall recorded at the site prior to the exceedance of trigger values and non-compliance occurring;	4	Full Compliance	The site has an automatic weather station that provides continuous weather monitoring and data recording.	
38.9	the action(s) that have or will be undertaken to mitigate any environmental harm arising from the non-compliance;	4	Full Compliance	Sighted a condition 38 report IR011 related to 16Feb2020, 26Feb2020 and 01Mar2020 for nitrate at SW11. "The investigation concluded that the subject results were sourced from background areas of the McArthur River located upstream of SW21. As such, the results could not be attributed to MRM or its operations."	
38.10	corrective actions that have or will be undertaken to ensure the non-compliance does not reoccur; and	4	Full Compliance	Sighted a condition 38 report IR011 related to 16Feb2020, 26Feb2020 and 01Mar2020 for nitrate at SW11. "The investigation concluded that the subject results were sourced from background areas of the McArthur River located upstream of SW21. As such, the results could not be attributed to MRM or its operations."	
38.11	if no action was taken, why no action was taken.	4	Full Compliance	Sighted a condition 38 report IR011 related to 16Feb2020, 26Feb2020 and 01Mar2020 for nitrate at SW11. "The investigation concluded that the subject results were sourced from background areas of the McArthur River located upstream of SW21. As such, the results could not be attributed to MRM or its operations."	
39	A non-compliance with this licence includes:		-		
39.1	an exceedance of a trigger value at SW11, as specified in Appendix 3, on three consecutive sampling occasions;	N/A	Not Applicable		This condition provides the definition of a non-compliance rather than a requirement/action.
39.2	an exceedance of greater than or equal to three times a trigger value at SW11;	N/A	Not Applicable		This condition provides the definition of a non-compliance rather than a requirement/action.
39.3	subsequent consecutive exceedances of trigger values as described in Condition 39.1 and 39.2	N/A	Not Applicable		This condition provides the definition of a non-compliance rather than a requirement/action.
40	The licensee must keep records of all exceedances of trigger values specified in Appendix 3 Table 1. These records must be adequate to enable the licensee to comply with the non-compliance notification conditions of this licence.	4	Full Compliance	Sighted Worksheet in VOA and WDL Condition Compliance Status_SL3 Sheet - Waste Discharge Licence - Exceedance Register 2019.	
41	The licensee must submit to the Administering Agency a Monthly Discharge Report for any month when a discharge occurs from the South-East Levee 1 and / or the Mine Levee Discharge Point, to waste@nt.gov.au.	4	Full Compliance	Sighted Monthly Discharge Monitoring Report January 2019.	
42	The Monthly Discharge Report is due by the end of the subsequent calendar month following a discharge and must include:	4	Full Compliance	March 2019 and January 2019 Monthly Discharge Report and email	Reviewed emails from Operator to Department for January and March 2019 discharge events that were submitted within the subsequent calendar month following a discharge, as required.
42.1	the discharge start and end dates and times for each discharge event in that month;	4	Full Compliance	March 2019 and January 2019 Monthly Discharge Report and email	
42.2	source of water discharged during each discharge event;	4	Full Compliance	March 2019 and January 2019 Monthly Discharge Report and email	
42.3	the total volumes of water discharged for each discharge event;	4	Full Compliance	March 2019 and January 2019 Monthly Discharge Report and email	
42.4	include all analysis of water quality monitoring conducted as per Appendix 4 Table 1 for each discharge event; and	4	Full Compliance	March 2019 and January 2019 Monthly Discharge Report and email	The results for SW06 were checked.



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Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
42.5	for South-east Levee 1 include calculations to demonstrate that the 20m <sup>3</sup> /s flow as measured in the McArthur River at the downstream gauging station has been achieved for the necessary time of the discharge event.	4	Full Compliance	March 2019 Monthly Discharge Report and email	Figure 1 of the March 2019 Monthly Discharge Report shows the "McArthur River flow at the Downstream Gauging Station (DSGS) during the WDL March discharge Event 6 from the SEL1 DP. The data indicates that for the duration of the discharge event from SEL1 DP, the flow at the DSGS was greater than 20 cubic metres per second (m <sup>3</sup> /s) as required by Condition 18 of WDL 174-10."
43	The licensee must submit a completed Annual Return to the Administering Agency within 10 business days after each anniversary date of this licence, which report relates to the preceding 12 month period.	4	Full Compliance	Sighted copy of Annual Return 03Sep2019. DRAFT WDL 2019-20 Annual Return	Annual return is prepared using an EPA template and contains a summary of non-compliances.
44	The licensee must complete and provide to the Administering Agency a Monitoring Report, as prescribed by this licence , by 31 August each year, which relates to the preceding 1 May to 30 April period.	4	Full Compliance	WDL 174-11 Annual Monitoring Report 2019-20  Viewed Annual Monitoring Report that covered 1 May 2019 to 30 April 2020. The report was dated 31Aug2020.	
45	The licensee must ensure that each Monitoring Report is prepared in consultation with a Qualified Person to determine the relevance of the information being provided as it relates to the waste discharge component of the site and in the format described in the National Water Quality Management Strategy , Australian Guidelines for Water Quality Monitoring and Reporting, Chapter 7 and must include:	4	Full Compliance	WDL 174-11 Annual Monitoring Report 2019-20 states "This Monitoring Report and its appendices have been generally structured consistent with Chapter 7 of the Guideline. This includes the provision of the executive summary and primary technical report. This Monitoring Report is based on reviews completed by qualified specialists from Klohn Crippen Berger (KCB) and WRM Water and Environment (WRM)."	
45.1	a data analysis and interpretation using the National Water Quality Management Strategy, Australian Guidelines for Water Quality Monitoring and Reporting, Chapter 6;	4	Full Compliance	WDL 174-11 Annual Monitoring Report 2019-20 states "This Monitoring Report has been generally structured consistent with Chapter 6 of the Guideline. This includes: • Analysis of changes in time and space (Section 4); • Checks for data integrity (Section 5); • Comparison of site and water quality guidelines (Section 7); and • Interpretation in relation to study objectives (Section 8)."	
45.2	a tabulation of all monitoring data required as a condition of this licence;	4	Full Compliance	WDL 174-11 Annual Monitoring Report 2019-20 states "Tabulation of data required under the monitoring schedules listed in Conditions 25 to 27 of WDL 174-11 is provided in Section 4.2 and the EMR (Attachment 2)."	
45.3	includes long term trend analysis of monitoring data to demonstrate any environmental impact associated with the activity over a minimum period of three years (where the data is available);	4	Full Compliance	WDL 174-11 Annual Monitoring Report 2019-20  The WDL 174-11 Annual Monitoring Report 2019-20 includes "A summary of long term trends for surface water sites in the McArthur River has been provided from 1 January 2008 (where data was available) in Section 4.3 of this report.  Cease to flow conditions were observed for all monthly samples at BBDDP, and hence no water quality sampling was undertaken during the reporting period. As such, please refer to Waste Discharge Licence 174-10 Monitoring Report 1 June 2017 – 31 May 2018 (MRM, 2018) for long term trend analysis of BBDDP monitoring data.  Long term trend analysis for the various monitoring programs is also provided in the EMR (Attachment 2) and its Appendices."	
45.4	includes mine derived loads of contaminants for the contaminants listed in Appendix 3 Table 1, reporting to the McArthur River including sources of contaminant loads, compared against background loads in the McArthur River and Glyde River;	4	Full Compliance	WDL 174-11 Annual Monitoring Report 2019-20  Refer to WDL 174-11 Annual Monitoring Report 2019-20 Section 6 and Appendix T of Attachment 2 (EMR).  Non-compliance reported in the Annual Return for flow (loads) could not be determined for Glyde River over reporting period reported on 31Aug2020.	
45.5	a comparison of the mine derived contaminant loads referred to in Condition 45.4 against contaminant loads reporting to the McArthur River from July 2017 to June 2018;	4	Full Compliance	WDL 174-11 Annual Monitoring Report 2019-20  Refer to WDL 174-11 Annual Monitoring Report 2019-20 Section 6 and Appendix T of Attachment 2 (EMR).	
45.6	an assessment of all monitoring data (including flow rate and calculated volume from each river contributing to water quality at SW11) and whether the activity has been conducted in a manner that has ensured the McArthur River and water s potentially impacted from the Bing Bong discharge point are being protected at all times from mine related impacts.	4	Full Compliance	WDL 174-11 Annual Monitoring Report 2019-20  Refer to WDL 174-11 Annual Monitoring Report 2019-20 Section 7 and Attachment 3.	

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Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
<b>PERFORMANCE IMPROVEMENT</b>					
46	The licensee must develop and submit to the administering authority an Adaptive Management Plan	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
47	A draft Adaptive Management Plan must be provided to the Administering Authority by 30 November 2020	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
48	The final Adaptive Management Plan must be provided to the Administering Authority by 31 March 2021.	N/A	Not Applicable		Future item with final AMP due 31 March 2021.
49	The Adaptive Management Plan must set out how the licensee will ensure the health of the McArthur River is protected from mine related impacts. The Adaptive Management Plan must include as a minimum:	N/A	Not Applicable		Future item.
49.1	clear, measurable environmental objectives for all significant environmental risks and potential impacts for the:	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
.	area from the discharge points to SW11 including all convergent water sources;	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
.	area from SW11 to mouth of the McArthur River.	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
49.2	measurable performance indicators underpinned by scientific evidence and Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018 to demonstrate whether environmental objectives are being met. At a minimum measurable performance indicators must be specified for surface water, groundwater, fluvial sediments and biota.	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
49.3	triggers to warn of potential for performance indicators to be exceeded.	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
49.4	realistic and achievable contingency interventions to maintain performance indicators if triggers are exceeded.	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
49.5	clearly defined management measures / actions capable of being implemented in a timely way to ensure that the performance indicators are not exceeded and environmental objectives are achieved.	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
49.6	clear processes to guide decision making if triggers are exceeded that address timeframes for initiation of actions, including decisions to discontinue an activity, and responsibility and evidentiary basis for decision-making.	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
49.7	a continual feedback system to ensure appropriate actions are initiated when triggered and environmental objectives are always being met.	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
49.8	review management actions as required based on knowledge gained from experience at the site and elsewhere across industry.	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
50	The Adaptive Management Plan required by Condition 48 must:		-		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
50.1	be prepared by a suitably qualified person;	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
50.2	the final Adaptive Management Plan must be reviewed by a suitably qualified third party prior to submission to the Administering Authority.	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
51	The licensee must conduct a review of all environmental monitoring undertaken for the McArthur River and provide one consolidated Environmental Monitoring Program to the administering Authority.	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.



Waste Discharge Licence Compliance Workbook - Operator

Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
52	A draft Environmental Monitoring Program must be provided to the administering authority by 30 November 2020.	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
53	The final Environmental Monitoring Program must be provided to the administering authority by 31 March 2021.	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
54	The revised Environmental Monitoring Program must be capable of identifying and quantifying impacts of mining activities to assess the health of the McArthur River.	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
55	At a minimum, the Environmental Monitoring Program for the Mine must:		-		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
55.1	be capable of determining whether performance indicators and environmental objectives as outlined in the Adaptive Management Plan are being met.	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
55.2	quantify impacts to water quality and trends in groundwater and surface water at appropriate points including upstream and downstream of the mine to determine that environmental objectives and performance indicators are being met.	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
55.3	include upstream and downstream monitoring in terms of fluvial sediment and biota (including macroinvertebrates) diversity and abundance.	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
55.4	ensure that all likely parameters and contaminants of concern are monitored in groundwater, surface water, fluvial sediment and biota.	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
55.5	quantify mine-derived loads of lead and zinc entering the McArthur River each year.	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
55.6	include appropriate monitoring sites to assess the effectiveness of source control in reducing contaminant loads entering the McArthur River.	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
55.7	include an aquatic ecosystem monitoring program in line with recommendation 14 and 15 of the NT EPA Assessment Report 86 McArthur River Mine Overburden Management Project McArthur River Mining Pty Ltd July 2018.	N/A	Not Applicable		Future item as Adaptive Management Plan draft not required until after the audit period. Adaptive Management Plan was submitted to DPIR in early 2020. Operator advised IM they were planning to update the AMP to incorporate the WDL AMP requirements.
56	The monitoring undertaken for the Bing Bong Dredge Spoil Drain Discharge Point (BBDDP) in accordance with Appendix 4, 5 and 6 must be reviewed to:		-		
56.1	ensure that the beneficial uses and sites of conservation significance surrounding the BBDDP are protected from any discharges from the Bing Bong Dredge Spoil Drain Discharge Point.	N/A	Not Applicable		Future item. Advised by Operator that Bing Bong will be kept under its own plan, which is not due until 31Mar2021, so outside of the audit period.
56.2	determine if additional monitoring in the Dredge Spoil Drain is required to verify the likely source of any exceedances detected at the BBDDP.	N/A	Not Applicable		Future item. Advised by Operator that Bing Bong will be kept under its own plan, which is not due until 31Mar2021, so outside of the audit period.
57	The licensee must provide an Environmental Monitoring Program for the Bing Bong Dredge Spoil Drain Discharge Point to the Administering Authority by 31 March 2021.	N/A	Not Applicable		Future item. Advised by Operator that Bing Bong will be kept under its own plan, which is not due until 31Mar2021, so outside of the audit period.
58	The Environmental Monitoring Program for the Bing Bong Dredge Spoil Drain Discharge Point must include:		-		
58.1	any revised water and sediment monitoring required to achieve the objectives of Condition 56.1.	N/A	Not Applicable		Future item. Advised by Operator that Bing Bong will be kept under its own plan, which is not due until 31Mar2021, so outside of the audit period.
58.2	a biota monitoring plan that will replace the biota monitoring schedule in Appendix 6.	N/A	Not Applicable		Future item. Advised by Operator that Bing Bong will be kept under its own plan, which is not due until 31Mar2021, so outside of the audit period.
59	The Environmental Monitoring Program for the Bing Bong Dredge Spoil Drain Discharge Point must include:		-		
59.1	be prepared in accordance with the National Water Quality Management Strategy Australian Guidelines for Water Quality Monitoring and Reporting October 2000.	N/A	Not Applicable		Future item. Advised by Operator that Bing Bong will be kept under its own plan, which is not due until 31Mar2021, so outside of the audit period.
59.2	be prepared by a suitably qualified person.	N/A	Not Applicable		Future item. Advised by Operator that Bing Bong will be kept under its own plan, which is not due until 31Mar2021, so outside of the audit period.

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Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
59.3	the final environmental monitoring program must be reviewed by a suitably qualified third party prior to submission to the Administering Authority.	N/A	Not Applicable		Future item. Advised by Operator that Bing Bong will be kept under its own plan, which is not due until 31Mar2021, so outside of the audit period.
60	The licensee must ensure a device is installed to measure flow and calculate the volume of water from the Glyde River and Emu Creek contributing to flow, volume and water quality at SW11.	3	Part Compliance (High)	<p>Email from Operator to Department of Environment and Natural Resources on 03Feb2020 confirming Operator installed data loggers at Emu Creek (monitoring location SW26) and on the Glyde River (monitoring location SW09) in November 2019 titled RE:WDL174-11 Condition 60 and 61</p> <p>Memo dated 03Feb2020 from WRM to Operator titled Hydraulic assessment of the potential Emu Creek monitoring stations Glyde Gauging Station relocation advice</p> <p>There was insufficient evidence for this condition available during the audit period.</p>	<p>The approval for a permanent gauging station has been delayed due to the Aboriginal Area Protection Authority (AAPA) process being delayed by COVID-19. Temporary flow loggers have been installed to meet the condition in November 2019. Data loggers put in position prior to the wet season. The Operator are not authorised by AAPA to install a proposed new gauging station on the Glyde River. Water quality is captured via surface monitoring.</p> <p>The logger installed on the Glyde River during the 2019/20 wet season is still underwater, and will not be retrievable during the 20/21 wet season. Operator has installed a logger in a more accessible location for the 20/21 wet season (outside of the audit period), although data captured during lower-flow periods will be limited.</p> <p>Operator has demonstrated their ongoing commitment to these gauges via a memo dated 03Feb2020 from WRM to Operator titled Hydraulic assessment of the potential Emu Creek monitoring stations.</p> <p>A manually-downloaded water level logger has been installed at SW26 (Emu Creek), of which consultants can model wet season flow rates once data is retrieved.</p> <p>OFI: Progress negotiations related to necessary approval requirements with other authorities to enable construction of the permanent monitoring structures e.g. Glyde River.</p>
61	The licensee must ensure the devices required by condition 60 are installed by 31 December 2019.	4	Full Compliance	<p>Email from Operator to Department of Environment and Natural Resources on 03Feb2020 confirming Operator installed data loggers at Emu Creek (monitoring location SW26) and on the Glyde River (monitoring location SW09) in November 2019 titled RE:WDL174-11 Condition 60 and 61</p> <p>Temporary flow loggers have been installed to meet the condition in November 2019. Data loggers put in position prior to the wet season.</p>	Data downloaded and added into monitoring report for Emu Creek. Glyde River not available due to logger not accessible.
62	The licensee must include in the monitoring report, average weekly flow and calculated volumes in each creek or river outlined in condition 60, calculated volumes contributed to SW11 and at any time a non-compliance is reported.	3	Part Compliance (High)	<p>2019-20 Mine Derived Analyte Loads Assessment, Section 5 'Glyde River and Emu Creek flow volumes'. The logger for the Glyde river is still underwater and is unable to be retrieved.</p> <p>There was insufficient evidence for this condition available during the audit period.</p>	<p>The logger for the Glyde river is still underwater and is unable to be retrieved due to water levels and the presence of crocodiles. Due to changes in river morphology, the logger may be buried or lost.</p> <p>The old gauging station on the Glyde river provided some flow data however due to its position, the data has been compromised due to backwater flow.</p> <p>Plan to install another logger in the Glyde River as a temporary measure. Capital expenditure approved to install gauging station in Glyde River.</p> <p>OFI: Progress negotiations related to necessary approval requirements with other authorities to enable construction of the permanent monitoring structures e.g. Glyde River.</p>
<b>WDL174-10 (28 April 2017 - 28 April 2019)</b>					
<b>GENERAL</b>					
8	Within 10 business days of any amendment being made to document McArthur River Mining - Sustainable development Mining Management Plan - Section 6 Water Management, the licensee must provide the amended document to the Administering Agency, along with:	N/A	Not Applicable		No changes made to section 6 during this period. See below.
8.1	a tabulated summary of the amendment(s) with document references;	N/A	Not Applicable		No changes made to section 6 during this period. See below.
8.2	reasons for the amendment(s); and	N/A	Not Applicable		No changes made to section 6 during this period. See below.
8.3	an assessment of environmental risk associated with the amendment(s).	N/A	Not Applicable		No changes made to section 6 during this period. See below.
10	The licensee must, for the duration of this licence, implement, maintain and follow a Consultation and Communication Plan which includes a strategy for communicating with persons who are likely to have a real interest in, or be affected by, the activity.	4	Full Compliance	<p>Consultation and Communication Plan Waste Discharge Licence (WDL 174-10)</p> <p>Consultation and Communication Plan WDL includes "how MRM will communicate with stakeholders about WDL 174-10 on an ongoing basis as well as how communication would be achieved in the unlikely event of an unplanned discharge".</p>	
15	The licensee must implement, maintain and follow an Emergency Response Plan that addresses procedures for responding to emergencies associated with the activity that may cause environmental harm.	4	Full Compliance	<p>Sighted version 6 of Emergency Response Plan.</p> <p>Emergency Response Plan: MPN-26000001 Version 8 (2020) is current.</p>	

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Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
<b>OPERATIONAL</b>					
17	The licensee must, without limiting any other condition of this licence, in conducting the activity do all things reasonable and practicable to ensure the activity does not adversely affect the Declared Beneficial Uses and Objectives as declared from time to time, including those applying to: McArthur River Area and McArthur River Catchment Area	4	Full Compliance	2019 WDL Renewal email and covering report condition 44-45 Waste Discharge Licence 174-10 Monitoring Report 1 May 2018 to 30 April 2019, August 2019  Section 8 of the Waste Discharge Licence 174-10 Monitoring Report 1 May 2018 to 30 April 2019 stated "Relevantly the OPR (which assessed monitoring data from 1 April 2018 to 30 April 2019) concluded, based on external experts' and MRM's review of environmental monitoring data for the OPR reporting period, that MRM's key environmental objectives are being met. These key environmental objectives are summarised as follows: ☑ Protection of downstream beneficial uses and environmental values. [...]"	
<b>DISCHARGES</b>					
20	For the authorised monitoring points SW11 and BBDDP identified in Table 2, the measurement of a parameter at that point must not exceed the trigger values specified for that parameter in Table 3 Waste Water Discharge Monitoring Program	4	Full Compliance	March 2019 Monthly Discharge Report and email  Checked SW11 for 02Mar2019 in the March 2019 Monthly discharge event and the parameters requiring monitoring from Table 3 were included. Trigger value for DO was the only exceedance and was also reported in the March 2019 Monthly Discharge Report as an exceedance and in the Annual Return 2018-2019 considered due to natural river processes.	Note: WDL174-10 non compliance exceedances trigger replaced by 3 exceedances triggers in WDL174-11.
<b>MONITORING</b>					
23	The licensee must conduct discharge monitoring in accordance with Table A and Table B in Appendix 3.	4	Full Compliance	March 2019 Monthly Discharge Report and email  Checked SW6 and SW11 for 02Mar2019 in the March 2019 Monthly discharge event and the parameters requiring monitoring from Table 3 were included.	
24	Total (unfiltered) metals must be monitored for the contaminants listed in Table 3 to assess mine-derived contaminant loads that report to the McArthur River and the various sources that contribute to these loads for the purpose of assessing impacts on the downstream receiving environment.	4	Full Compliance	Waste Discharge Licence 174-10 Monitoring Report 1 May 2018 to 30 April 2019, August 2019  Filtered and unfiltered monitoring undertaken. Refer annual report and March 2019 Monthly Discharge Report and email.	
25	The licensee must maintain and operate continuous monitoring equipment to achieve 90% data capture rate at SW11 for measuring and recording:		-	MRM WDL 174-10 Annual Return 2018-19 Email submission of Annual Return 2018-2019 MRM to Department WDL 174-10 Waste Discharge Licence 174-10 Monitoring Report 1 May 2018 to 30 April 2019, August 2019	Data is being captured but not being logged continuously for dissolved oxygen. Another probe was inserted to measure EC and pH. When this probe was retrieved the data did not align with the lab data.  MRM WDL 174-10 Annual Return 2018-19 states a non-compliance for 2018/2019 continuous monitoring at SW11 did not meet the required 90% capture rate. The monitoring equipment was damaged during the 2018/2019 wet season from multiple lightning strikes to the communications hut which influenced the capture rate.  Waste Discharge Licence 174-10 Monitoring Report 1 May 2018 to 30 April 2019, August 2019 Section 3.3 states "A data capture rate of approximately 50% was achieved during periods of river flow during the reporting period. Lightning strikes in the area are believed to have damaged the equipment. Surge protection has since been installed and will be trialled during the 2019/20 reporting period."
25.1	Electrical conductivity	2	Part Compliance (moderate)	There was insufficient evidence for this condition available during the audit period.	Continuous monitoring data capture interrupted due to extreme climate and seasonal changes e.g. cyclones and storms. Equipment is susceptible to extreme conditions (e.g. sediment clogging probes etc).
25.2	pH	2	Part Compliance (moderate)	There was insufficient evidence for this condition available during the audit period.	Continuous monitoring data capture interrupted due to extreme climate and seasonal changes e.g. cyclones and storms. Equipment is susceptible to extreme conditions (e.g. sediment clogging probes etc).
25.3	dissolved oxygen	2	Part Compliance (moderate)	There was insufficient evidence for this condition available during the audit period.	Continuous monitoring data capture interrupted due to extreme climate and seasonal changes e.g. cyclones and storms. Equipment is susceptible to extreme conditions (e.g. sediment clogging probes etc).
25.4	temperature	2	Part Compliance (moderate)	There was insufficient evidence for this condition available during the audit period.	Continuous monitoring data capture interrupted due to extreme climate and seasonal changes e.g. cyclones and storms. Equipment is susceptible to extreme conditions (e.g. sediment clogging probes etc).
25.5	river flow	2	Part Compliance (moderate)	There was insufficient evidence for this condition available during the audit period.	Continuous monitoring data capture interrupted due to extreme climate and seasonal changes e.g. cyclones and storms. Equipment is susceptible to extreme conditions (e.g. sediment clogging probes etc).
26	The licensee must conduct water monitoring in accordance with the 'McArthur River Mining Water Monitoring Schedule' (ref. number GEN-ENV-REG-6040-0001	4	Full Compliance	2016-17 Water Monitoring Schedule - Final Rev3  Monitoring schedule was included in AppV - Surface Water Monitoring Report, 2018-19 from OPR.	
27	The licensee must conduct sediment, soil, dust and biota monitoring in accordance with:		-		

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Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
27.1	the 'Sediment, Soil, Dust and Biota Monitoring Schedule' (ref. number GEN-ENV- REG-6040-0002); and	4	Full Compliance	<p>Sediment, Soil, Dust and Biota Monitoring Schedule' (ref. number GEN-ENV- REG-6040-0002) revision 1 dated 22Jun2016</p> <p>MRM Environmental Monitoring Schedule 2017-18 I001 Rev 0 MRM Environmental Monitoring Schedule 2017-18 I001 Rev 10</p> <p>Email correspondence 'MRM Environmental Monitoring Schedule 2017-18' MRM notified the then Department of Environment and Natural Resources (DENR) of the proposed changes to the monitoring schedule on 6 July 2017.</p> <p>Waste Discharge Licence 174-10 Monitoring Report 1 May 2018 to 30 April 2019, August 2019</p> <p>Waste Discharge Licence 174-10 Monitoring Report 1 May 2018 to 30 April 2019, August 2019 Section 3.3 includes reference to reports in the OPR that include the required monitoring results.</p> <p>A number of spot checks were done on the required sampling and sufficient evidence was obtained to comply with this condition.</p>	<p>A number of sample evidence checks on the required sampling were made by the IM as below: The soil sampling was checked against EMR Appendix D - Soil Monitoring Report McArthur River Mine and Bing Bong Loading Facility October 2019. The Bing Bong site October 2019 monitoring locations was missing BBS05 and had an additional location of BBS08. Table 6-1 states that BBS05 was monitored between 29/05/2007 - 24/10/2017. Operator advised "BBS05 was incorrectly listed in the 2017/18 Monitoring Schedule Rev 0 as "Control Site - 1.5km south along Bing Bong Road". The reason for this error is unknown. Subsequently, sampling was undertaken by technicians according to this description rather than GPS coordinates. The site name was changed to BBS08 in 2017/18 Monitoring Schedule Rev 10 to reflect the alternate location. This change was carried over to future years, and the site was co-located with depositional dust monitoring site BBDDG08.</p> <p>The dust sampling was checked against EMR Appendix E - Ambient Air Monitoring Report McArthur River Mine and Bing Bong Loading Facility, May 2019 - April 2020 for the locations around the TSF. DMV03 DMV06, DMV12, DMV13, DMV17, DMV19, DMV20, DMV42 and DMV48 monitoring data only available until 2017 although those locations are in the provided schedule.</p> <p>Operator advised "Dust sampling requirements were changed following approval of the 2017 AQMP. The changes included a reduced number of sites of DMV monitoring, however with an increased sample frequency and same date/time deployment allowing for a site wide snapshot. Changes to the Monitoring Schedule between versions is provided in the 'Schedule Changes' tab of the spreadsheet, which has documented the reason for changes to DMV monitoring. Reasons for revision updates is documented in the 'Version' tab of the spreadsheet, which has documented the change of sample site from BBS05 to BBS08."</p>
27.2	the 'Flora and Fauna Surveys' (ref. number GEN-ENV-REG-6040-0003).	4	Full Compliance	<p>Flora and Fauna Surveys (ref. number GEN-ENV-REG-6040-0003 revision 0 dated 22Jun2016) EMR Appendices 2017_EcOz_BBLF Dredge Spoil Impact Assessment_FINAL 2018-19 MRM Environmental Monitoring Schedule I001 Rev0 Waste Discharge Licence 174-10 Monitoring Report 1 May 2018 to 30 April 2019, August 2019</p> <p>Waste Discharge Licence 174-10 Monitoring Report 1 May 2018 to 30 April 2019, August 2019 Section 3.3 includes reference to reports in the OPR that include the required monitoring results.</p> <p>Flora and Fauna Surveys (ref. number GEN-ENV-REG-6040-0003 revision 0 dated 22 June 2016) required the following for Operator: *Biannual survey of the aquatic fauna (including the Freshwater Sawfish) in the McArthur River and local tributaries - refer to EMR Appendix M - Aquatic Fauna of the McArthur River, Northern Territory, Early Dry Season, 2019 and Appendix N - Aquatic Fauna of the McArthur River, Northern Territory, Late Dry Season 2019. *Annual survey of macroinvertebrates in the McArthur River and local tributaries- refer to EMR Appendix K - McArthur River Freshwater Aquatic Macroinvertebrate Assessment, 2019 *Biannual survey of riparian birds along the McArthur River and Barney Creek Diversions- refer to EMR Appendix G - McArthur River Riparian Bird Monitoring, Early Dry Season, June-July 2019 and Appendix H - McArthur River Riparian Bird Monitoring, Late Dry Season, November 2019 *Annual survey of the vegetation of the McArthur River and Barney Creek Diversions - refer to EMR Appendix F - McArthur River and Barney Creek Revegetation Monitoring Report, 2019.</p>	
29	The Administering Agency may require the licensee to revise or amend and resubmit the monitoring documents. Where the Administering Agency requires the monitoring documents to be resubmitted, the licensee must submit them to the Administering Agency by the date specified by the Administering Agency.	N/A	Not Applicable		No request has been made.
<b>RECORDING AND REPORTING</b>					
38	The licensee must submit a completed Annual Return to the Administering Agency within 10 business days after each anniversary date of this licence, which report relates to the preceding 12 month period.	4	Full Compliance	Sighted copy of Annual Return 03Sep2019 (submission date outside the audit period).	
42	The licensee must ensure that each Monitoring Report:		-		

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Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
42.1	is prepared in accordance with the requirements of the NT EPA 'Guideline for Reporting on Environmental Monitoring';	4	Full Compliance	No mention of the NT EPA 'Guideline for Reporting on 'Environmental Monitoring'. However, the report appears to follow the requirements. As an example, there is a certification as required by Table 1 of the NT EPA 'Guideline for Reporting on Environmental Monitoring' including signature dated 31Aug2020.	
43	The Administering Agency may require the licensee to revise or amend and resubmit the Monitoring Report. Where the Administering Agency requires the Monitoring Report to be resubmitted, the licensee must submit it to the Administering Agency by the date specified by the Administering Agency.	N/A	Not Applicable		The Operator advised that there have been no requests made by the Administering Agency for the Operator to resubmit the Monitoring Report.
<b>PERFORMANCE IMPROVEMENT</b>					
44	The licensee must review the water quality site specific trigger values for SW11 listed in Table 3 and provide a report to the Administering Agency: 44.1 with any request to amend the authorised discharge points as described in Table 2; or 44.2 with any application to renew this licence; or 44.3 prior to the expiry date of this licence.	4	Full Compliance	2019 WDL Renewal email and covering report condition 44-45  MRM WDL 174 Renewal Application and Technical Review of SSTVs and Loads Appendix A - 2018 Review of the Waste Discharge Licence (WDL 174-10) Site Specific Trigger Values (SSTV) Appendix B - Review of SW11 Authorised Monitoring Point location from a hydrologic, hydraulic and practical perspective Appendix C - 2017 18 Mine Derived Analyte Loads Assessment Appendix D - Independent Review by Professor Barry Noller Appendix E - Preliminary Site-specific Guideline Values  Submitted as part of the application to renew this licence 25Feb2019.	
45	The review and report of the site specific trigger values must:		-		
45.1	be conducted in accordance with ANZECC 2000 Guidelines;	4	Full Compliance	2019 WDL Renewal email and covering report condition 44-45  "This report and its appendices have been prepared in accordance with ANZECC & ARM CANZ (2000), including: • review of receiving environment species protection level (e.g. 95 percent [%]); • review of default guideline values; • risk assessment; and • ecotoxicity for Zn and Pb."	
45.2	review the SW11 and alternative site specific trigger value locations in regards to influences from river systems other than the McArthur River in determining the most suitable trigger value location to achieve environmental protection;	4	Full Compliance	2019 WDL Renewal email and covering report condition 44-45  "RGS has analysed upstream and downstream data of contributing rivers and creeks at the Mine (Section 3 and Appendix A). WRM has considered the suitability of SW11 and other alternative sites to achieve environmental protection with regard to influences of mine derived contaminants, tailwaters, mixing conditions, high flow conditions, accessibility and flooding (Section 3 and Appendix B)."	
45.3	assess receiving environment water quality at SW11, SW12 and sites upstream of the mine site using data that has been collected over the last three years;	4	Full Compliance	2019 WDL Renewal email and covering report condition 44-45  "RGS has analysed and assessed monitoring data for all SSTVs at SW11, SW12 and upstream sites over a three year period from 1 May 2015 to 30 April 2018, and in consideration of the ANZECC & ARM CANZ (2000) default guideline values for 95% and 99% species protection (Section 2 and Appendix A)."	
45.4	assess the difference between water quality measured at SW11, SW12 and sites upstream of the mine site and the site specific trigger values for SW11 listed in Table 3	4	Full Compliance	2019 WDL Renewal email and covering report condition 44-45	
45.5	assess the difference between water quality measured at SW11, SW12 and sites upstream of the mine site and ANZECC default guideline values that represent protection of 95% and 99% species;	4	Full Compliance	2019 WDL Renewal email and covering report condition 44-45  "RGS has analysed and assessed monitoring data for all SSTVs at SW11, SW12 and upstream sites over a three year period from 1 May 2015 to 30 April 2018, and in consideration of the ANZECC & ARM CANZ (2000) default guideline values for 95% and 99% species protection (Section 2 and Appendix A)."	
45.6	include and assess mine derived load estimates (and balances) reporting to the McArthur River;	4	Full Compliance	2019 WDL Renewal email and covering report condition 44-45  "WRM has estimated mine derived loads for the period 1 July 2017 to 30 June 2018 using water level, metered flow, and water quality data (Section 4 and Appendix C)."	
45.7	propose revised trigger values and mine derived contaminant loads to be reported to the McArthur River that sufficiently protect the receiving environment at the revised trigger value location to achieve 95% to 99% species protection (whichever best reflect protection of the receiving environment based on the analysed monitoring results); and	4	Full Compliance	2019 WDL Renewal email and covering report condition 44-45  "Recommendations for retaining the current SSTVs and compliance monitoring location (SW11) have been made by the specialists (Sections 2, 3 and 4 and Appendices A and B)."	



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Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
45.8	include a copy of written review of the report by a suitably qualified professional.	4	Full Compliance	2019 WDL Renewal email and covering report condition 44-45  2019 WDL Renewal email and covering report condition 44-45 states that Appendix D is the Professor Barry Noller Independent Review Letter, this appendix was not sighted.	
46	The Administering Agency may require the licensee to revise or amend and resubmit the water quality site specific trigger value review. Where the Administering Agency requires this review to be resubmitted, the licensee must submit it to the Administering Agency by the date specified by the Administering Agency.	N/A	Not Applicable		The Operator advised that there have been no requests from the Administering Authority for additional information.
46.1	a description of how water is managed on and moved around the site including site layouts and figures;	N/A	Not Applicable		The Operator advised that there have been no requests from the Administering Authority for additional information.
46.2	a description including figures of all sources of water authorised to be discharged via the authorised discharge point including water that will be treated in the on-site water treatment plant and management criteria for discharging including frequencies and volumes of discharges;	N/A	Not Applicable		The Operator advised that there have been no requests from the Administering Authority for additional information.
46.3	the environmental values and beneficial uses of the receiving environment;	N/A	Not Applicable		The Operator advised that there have been no requests from the Administering Authority for additional information.
46.4	the measures in place and planned to minimise the volume of contaminants and pollutants entering the environment and maximise water reuse on site;	N/A	Not Applicable		The Operator advised that there have been no requests from the Administering Authority for additional information.
46.5	the operation of the wastewater treatment plant and any potential impacts of the wastewater treatment plant on the receiving environment and mitigation measures to address any impacts;	N/A	Not Applicable		The Operator advised that there have been no requests from the Administering Authority for additional information.
46.6	water treatment plant operational plans to ensure discharged water meets the revised water quality trigger values for SW11 as developed under condition 46;	N/A	Not Applicable		The Operator advised that there have been no requests from the Administering Authority for additional information.
46.7	an environmental risk assessment for water management activities;	N/A	Not Applicable		The Operator advised that there have been no requests from the Administering Authority for additional information.
46.8	the existing infrastructure capabilities and plans to enable the assessment of contaminant load from water entering the environment;	N/A	Not Applicable		The Operator advised that there have been no requests from the Administering Authority for additional information.
46.9	other mine related operations impacts on the water quality downstream of the mine site including mine closure and planned mitigation measures to manage these impacts; and	N/A	Not Applicable		The Operator advised that there have been no requests from the Administering Authority for additional information.
46.10	an update on the implementation of recommendations from the Independent Monitor Environmental Performance Annual Report 2016 relevant to water management including:	N/A	Not Applicable		The Operator advised that there have been no requests from the Administering Authority for additional information.
46.10 (a)	mitigation of elevated concentrations of metals and major ions in Surprise and Barney Creek with a view to preventing the need for dry season dewatering of Barney Creek;	N/A	Not Applicable		The Operator advised that there have been no requests from the Administering Authority for additional information.
46.10 (b)	further investigation of causes of deteriorating dry season water quality in the McArthur River diversion drain; and	N/A	Not Applicable		The Operator advised that there have been no requests from the Administering Authority for additional information.
46.10 (c)	further investigation to determine if the source of filtered manganese (and nitrate) measured in the downstream section of Barney Creek is mine derived.	N/A	Not Applicable		The Operator advised that there have been no requests from the Administering Authority for additional information.
50	The Administering Agency may require the licensee to revise or amend and resubmit any Dredging and Dredge Spoil Management Plan. Where the Administering Agency requires a Dredging and Dredge Spoil Management Plan to be resubmitted, the licensee must submit it to the Administering Agency by the date specified by the Administering Agency .	N/A	Not Applicable		Revision of a Dredging and Dredge Spoil Management Plan has not been required.



## **Appendix C**

NT EPA Recommendations Compliance  
Workbook – Operator



NT EPA Recommendations Compliance Workbook - Operator

NT EPA Recommendation No.	Recommendation	Score	Compliance Level	Evidence	Comments
1	The Proponent shall ensure that the McArthur River Mine Overburden Management Project is implemented in accordance with all environmental commitments and safeguards:	4	Full Compliance	<p>Confirmed condition in Authorisation 0059 dated 15Aug2019 - 106.</p> <p>Operator in January 2020, as required under Section 41 of the MMA, submitted for assessment an amended Mining Management Plan (MMP) for the OMP works addressing commitments made in the EIS, the NT EPA recommendations and EPBC Act approval conditions.</p> <p>The MMP is consistent with recommendations and commitments, where they relate to activities covered by this MMP. The full list of EIS commitments is provided in Appendix M.</p> <p>Monitoring programs, especially those in relation to key risks like tailing storage, aquatic ecology, water, etc are ongoing and reported quarterly and included in the EMR annually for Department review. Includes independent oversight (ICE in construction) and panels.</p> <p>MMPs and picking up any relevant commitments in those. NOEF Plan submitted with the MMP had a list of all the relevant commitments to ensure operating in accordance with those requirements.</p>	<p>Note: "Confirmed condition in Authorisation 0059 dated 15Aug2019 - 106" text in the evidence column is referring to whether the EPA Recommendation was adopted into an Authorisation condition and provides the corresponding condition number. This approach is used throughout the NT EPA Recommendations Compliance Workbook - Operator in the evidence column.</p> <p>The Department completed assessment of the 2020 MMP. Variation of Authorisation 0059 (issued under section 38 of the MMA on 13Nov2020 approved the 2020 MMP) proposing the OMP related activities.</p>
i	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)	4	Full Compliance	<p>Confirmed condition in Authorisation 0059 dated 15Aug2019 - 106.</p> <p>2020 MMP</p> <p>Operator in January 2020, as required under Section 41 of the MMA, submitted for assessment an amended Mining Management Plan (MMP) for the OMP works addressing commitments made in the EIS, the NT EPA recommendations and EPBC Act approval conditions.</p> <p>MMPs and picking up any relevant commitments in those. NOEF Plan submitted with the MMP had a list of all the relevant commitments to ensure operating in accordance with those requirements.</p>	<p>The Department completed assessment of the 2020 MMP. Variation of Authorisation 0059 (issued under section 38 of the MMA on 13Nov2020 approved the 2020 MMP) proposing the OMP related activities.</p>
ii	recommended in this Assessment Report 86. The Northern Territory Environment Protection Authority considers that all safeguards and mitigation measures outlined in the Environmental Impact Statement are binding commitments made by the Proponent. Where there is an inconsistency between the commitments made by the Proponent and these recommendations, the recommendations will take precedence.	4	Full Compliance	<p>CWC ICE Review Letter dated 20Aug2019 EMR 2019-2020.</p> <p>Key commitments in design of basal CCL for NOEF was 250mm but change was made to 500mm to meet the EIS recommendation.</p>	

NT EPA Recommendations Compliance Workbook - Operator

NT EPA Recommendation No.	Recommendation	Score	Compliance Level	Evidence	Comments
2	The Proponent shall provide written notice to the Northern Territory Environment Protection Authority and the responsible Minister 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, in accordance with clause 14A of the Environmental Assessment Administrative Procedures.	N/A	Not Applicable	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 107.  As required under Section 41 of the MMA, in January 2020, the operator submitted for assessment an amended Mining Management Plan (MMP) for the OMP works. The OMP addressed commitments made in the EIS, the NT EPA recommendations and EPBC Act approval conditions.  No examples of the Operator altering or proposing 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, occurring in the audit period.	The 2020 MMP has been assessed by the Department and conforms to the recommendation.  Existing requirement under NT legislation.
3	The Proponent shall ensure that the commitments and safeguards listed in the EIS for the McArthur River Mine Overburden Management Project and recommended in this Assessment Report 86 are implemented in a manner and to the extent that ensures the health of the McArthur River is protected along its whole length at all times from mine related impacts. This is the overarching environmental outcome that is required to be achieved in respect of the Proposal and all future stages of the mine.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 108.  Note: The overarching environmental outcome is not specifically stated in the Authorisation however, the Authorisation contains requirements that contribute to achieving the outcome.  Adaptive Management Plan and subordinate environmental management plans and monitoring programs have been prepared to facilitate the implementation of the measures, safeguards, monitoring and reporting to meet the objectives.	
	To ensure the protection of the McArthur River from mine related impacts, the Proponent shall ensure that the annual loads of lead and zinc discharged to the McArthur River in future years (July to June) do not exceed the loads discharged in 2017-2018, taking into account seasonal variations in rainfall, and subject to future annual load calculations.	4	Full Compliance	EMR section 4.1.3. 2019/20 Mine Derived Analyte Loads Assessment 24Aug2020  Confirmed condition in Authorisation 0059 dated 15Aug2019 - 108  The IM has reviewed the Adaptive Management Plan (AMP) and provided comments.  Refer to Waste Discharge Licence 174-10 Monitoring Report 1 May 2018 to 30 April 2019, August 2019 and WDL 174-11 Annual Monitoring Report 2019-20 provided as evidence for WDL. Loads are built into the dilution calculator used to determine discharges.	
	The Proponent shall implement a monitoring program, developed in accordance with Recommendation 13, within six months of authorisation of the Proposal, to the satisfaction of the relevant regulator. The monitoring program shall quantify the annual loads of lead and zinc entering the main channel of the McArthur River and be used to assess whether or not the load limits specified herein have been met. A load summation shall be provided to the Independent Monitor for auditing at three yearly intervals.	N/A	Not Applicable	EMR section 4.1.3. 2019/20 Mine Derived Analyte Loads Assessment 24Aug2020.  Confirmed condition in Authorisation 0059 dated 15Aug2019 - 108.  Future item as 6 months from 13Nov2020.	Water Management Plan already has a section on loads (4.1.1 and Appendix D). Section 5.2 TARP overview also includes reference to analyte loads.
	The Proponent shall implement an Adaptive Management Plan, to be developed in accordance with Recommendation 28, to allow for management measures and interventions to be adapted if necessary to achieve this overarching environmental outcome.	N/A	Not Applicable	Future item as AMP only required post 2020 MMP approval from 13Nov2020 (outside of the audit period).	Operator submitted the AMP in January 2020, which was earlier than required. AMP is a living document designed to be revised and updated to support continuous review and improvement.

NT EPA Recommendations Compliance Workbook - Operator

NT EPA Recommendation No.	Recommendation	Score	Compliance Level	Evidence	Comments
4	The Proponent shall implement all stages of the Proposal to meet the NT EPA's overarching environmental outcome provided for in Recommendation 3 to the satisfaction of the relevant regulator. In doing so, the Proponent shall ensure:	N/A	Not Applicable	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 109. Future item as only required post 2020 MMP approval from 13 November 2020 (outside of the audit period).	
4.i	water quality in the McArthur River meets site-specific trigger values determined in accordance with ANZECC (2000) guidelines at appropriate monitoring locations determined in accordance with Recommendation 13	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 109. Annual reporting (EMR) and quarterly data provision. Preliminary SSTV review report submitted in 2019. A final SSTV review report will be provided in early 2021. AMP to address water quality trends in creeks. Annual reporting EMR and quarterly data provision.	Refer to Recommendation 13.
4.ii	creeks on the mine site show long-term improving trends in water quality within 20 years after cessation of mining.	N/A	Not Applicable	Future item as 20 years after cessation of mining.	Future item. Key environmental outcome in the AMP. Current monitoring data contributes to a baseline that can be used in the future.
5	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to calculate contaminant loads and contaminant concentrations entering creeks and the McArthur River using models that have been regularly reviewed and recalibrated.	N/A	Not Applicable	Condition related to the Department. Met by condition in Authorisation 0059 dated 15Aug2019 - 110.	To be included in a revised version of the AMP as required under EPBC Approval Condition 5.
5.i	groundwater flow paths	N/A	Not Applicable	Condition related to the Department. Met by condition in Authorisation 0059 dated 15Aug2019 - 110.	Submission of reports based on EPBC approval condition 5 due December 2020.
5.ii	attenuation of metals from mine-derived wastes.	N/A	Not Applicable	Condition related to the Department. Met by condition in Authorisation 0059 dated 15Aug2019 - 110.	Submission of reports based on EPBC approval condition 5 due December 2020.
	Updated modelling shall use suitable site-specific data collected in the monitoring program. Models and modelling outputs, and the data collection programs to inform model updates, shall be reviewed at three year intervals by relevant independent panels appointed in accordance with Recommendations 8, 11 and 23, and the outputs used to inform the Adaptive Management Plan, to be developed in accordance with Recommendation 28.	4	Full Compliance	Groundwater models (pit, NOEF and TSF) have been updated based on ongoing monitoring data and drilling programs. Panel review pending creation of the panels (not triggered until November 2023).	The Department and Operator to establish independent panels of experts to meet review commitments, beginning with development of Terms of Reference for consultation with stakeholders. Groundwater models (pit, NOEF and TSF) have been updated based on ongoing monitoring data and drilling programs. The modelling was started in the audit period.
6	Approvals and decisions in relation to the Proposal shall include conditions that require an audit to be conducted of the Proponent's Quality Assurance / Quality Control procedures and waste rock identification and handling performance every three years and reported to the relevant independent panel and the relevant regulator.	N/A	Not Applicable	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 111 (Condition 112 in Authorisation 0059 dated 13Nov2020). Relevant to Department.	For approval of any OMP-related activities, Operator to prepare and submit an amended MMP under Section 41 of the MMA detailing the QA/QC system implemented for waste rock management The Department to complete assessment of the MMP, ensuring the proposed QA/QC system for waste rock management meets the requirements of Section 36(5) of the MMA and issue an appropriately conditioned Variation of Authorisation under section 38 of the MMA. Provided in the Operator NOEF Design and Construction Guideline.

NT EPA Recommendations Compliance Workbook - Operator

NT EPA Recommendation No.	Recommendation	Score	Compliance Level	Evidence	Comments
7	The basal layer of the NOEF foundation shall be constructed with a compacted clay layer of at least 0.5 m thickness to limit seepage to groundwater during construction of the NOEF.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 22ai and 112.  CWC ICE Review Letter 20Aug2019. EMR 2019-2020.  Basal layer of CW Charlie constructed during the audit period. Construction report reviewed by ICE used to verify 0.5m CCL.	For approval of any OMP-related activities, Operator to prepare and submit an amended Mining Management Plan (MMP) under Section 41 of the MMA that details the construction details of the NOEF. The Department has completed the assessment of the MMP and determined that the proposed NOEF construction and development satisfies regulatory requirements.  Operator advised that the NOEF will continue to be implemented for new sections of the NOEF developed at the base as described in Section 4 and provided in the Operator NOEF Design and Construction Guidelines.
8	Approvals and decisions in relation to the proposal will include conditions requiring the Proponent to provide funding to establish and operate a panel of independent experts to:	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 113.  Not active in audit period (triggered 13Nov2020 when 2020 MMP approved).  Note: the subparts of this recommendation aren't stated in the condition but it does state "in accordance with the relevant NT EPA recommendation".	Planning for independent expert panel establishment underway. Developing a framework for the establishment of the independent expert panels for consultation with relevant government agencies. Terms of Reference to be provided to the Minister for approval by May 2021.  Operator will assist with the establishment of the panel.
8.i	review every three years the outcomes of the Proponent's management program for the NOEF, including the stability, surface condition, internal temperature, reactions and seepage quantity and characteristics of the NOEF to ensure the overarching environmental outcome can be met	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 113.  Not active in audit period (triggered 13Nov2020 when 2020 MMP approved).  Note: the subparts of this recommendation aren't stated in the condition but it does state "in accordance with the relevant NT EPA recommendation".	
8.ii	review NOEF runoff and seepage monitoring results, and in particular trends in the contaminant concentrations in groundwater, and loads entering creeks and the McArthur River	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 113.  Not active in audit period (triggered 13Nov2020 when 2020 MMP approved).  Note: the subparts of this recommendation aren't stated in the condition but it does state "in accordance with the relevant NT EPA recommendation".	
8.iii	review the cover trial results, construction quality records, critical controls, stability assessments, cover performance and performance of progressive rehabilitation of the NOEF.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 113.  Note: the subparts of this recommendation aren't stated in the condition but it does state "in accordance with the relevant NT EPA recommendation".	
	The panel shall provide a report every three years to the relevant regulator and the Independent Monitor and the report made available to the Proponent, government agencies, the Community Reference Group and the public. The panel is to be formed:	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 113.  Not active in audit period (triggered 13Nov2020 when 2020 MMP approved).  Note: the subparts of this recommendation aren't stated in the condition but it does state "in accordance with the relevant NT EPA recommendation".	

NT EPA Recommendations Compliance Workbook - Operator

NT EPA Recommendation No.	Recommendation	Score	Compliance Level	Evidence	Comments
8.iv	with an independent chair, appointed by the responsible Minister in consultation with the Minister for Environment and Natural Resources	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 113.	
8.v	on the advice of the Department of Environment and Natural Resources, the Department of Primary Industry and Resources, and the Proponent.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 113.	
	Terms of Reference for the panel shall set out the terms for roles and responsibilities, membership, timeframe for commencement and scope, reporting obligations and transparency and accountability. The Terms of Reference shall be finalised by the responsible Minister, in consultation with the Minister for Environment and Natural Resources acting on advice from the NT EPA, within three months of authorisation of the Proposal.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 113.	
	The structure of the panel and its Terms of Reference shall be reviewed by the Responsible Minister, in consultation with the Minister for Environment and Natural Resources every six years from the date the Terms of Reference are finalised.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 113.	
9	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to implement a groundwater interception and recovery system for the NOEF. The system is to be designed to:	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 114.	Also Refer to Recommendations 3, 4 and 13 above.  Interception system designs and triggers for implementation are currently being developed.  Also a requirement of the EPBC Act approval. The NOEF interception plan including the process that triggers the need to install seepage interception infrastructure was submitted in June 2020. Modelling currently indicates no seepage to intercept until 2060 and no benefit to install now. TARP focus approach in the meantime.
	control seepage to Barney Creek diversion and the McArthur River over the life of the NOEF to as low as reasonably practicable	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 114.	
	achieve a recovering trend in the Barney Creek diversion and the old McArthur River channel water quality within 20 years of cessation of mining.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 114.	
	The system design and performance shall be reviewed by the independent panel, appointed in accordance with Recommendation 8, and approved by the relevant regulator/s.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 114.	
10	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to undertake constructability tests for geosynthetic liner cover options, including a geosynthetic liner /compacted clay layer combination, and monitor the options on rehabilitated stages of the NOEF to determine all relevant performance parameters including:	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 115.  Included in 2019 bridging MMP.  Addressed in the 2020 MMP.	Addressed in the 2020 MMP which includes appropriate detail of the proposed trials and works to be implemented to develop a NOEF cover system.  Trial to commence under 2020 MMP, subject to input from independent expert panels.
	slope stability during extreme events	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 115.	
	cover performance as a result of heat effects	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 115.	

NT EPA Recommendations Compliance Workbook - Operator

NT EPA Recommendation No.	Recommendation	Score	Compliance Level	Evidence	Comments
	tolerance of the geosynthetic liner to expected differential settlement	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 115.	
	veracity of cover longevity predictions	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 115.	
	likely long-term maintenance requirements.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 115.	
	Reporting of trial results and monitoring outcomes shall be provided every three years to the relevant independent panel and the Community Reference Group for review, and shall be audited by the Independent Monitor. Outcomes of trials and monitoring shall be used to inform the Adaptive Management Plan, to be developed in accordance with Recommendation 28, and the Closure Plan for the mine.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 115. Future requirement.	
11	Approvals and decisions in relation to the proposal will include conditions requiring the Proponent to provide funding to establish and operate a panel of independent experts to:	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 113 Future requirement. Note: the subparts of this recommendation aren't stated in the condition but it does state "in accordance with the relevant NT EPA recommendation.	As for Recommendation 8. Operator will assist with the establishment of the independent expert panel.
11.i	review every three years the outcomes of the Proponent's management program for the TSF including the berm stability, risk of overtopping, seepage and other aspects of the TSF that could impact on site water quality and the McArthur River, including the risk of catastrophic failure of any component of the TSF, to ensure that the overarching environmental outcome can be met	N/A	Not Applicable	Future requirement.	
11.ii	review TSF seepage monitoring results and the appropriateness of the monitoring program.	N/A	Not Applicable	Future requirement.	
	The panel shall provide a report every three years to the relevant regulator and the Independent Monitor and is made available to the Proponent, government agencies, the Community Reference Group and the public. The panel shall be formed:	N/A	Not Applicable	Future requirement.	
11.iii	With an independent chair, appointed by the responsible Minister in consultation with the Minister for Environment and Natural Resources.	N/A	Not Applicable	Future requirement.	
11.iv	on the advice of the Department of Environment and Natural Resources, the Department of Primary Industry and Resources, and the Proponent.	N/A	Not Applicable	Future requirement.	



NT EPA Recommendations Compliance Workbook - Operator

NT EPA Recommendation No.	Recommendation	Score	Compliance Level	Evidence	Comments
	Terms of Reference for the panel shall set out the terms for roles and responsibilities, membership, timeframe for commencement and scope, reporting obligations and transparency and accountability. The Terms of Reference shall be finalised by the responsible Minister, in consultation with the Minister for Environment and Natural Resources acting on advice from the NT EPA, within six months of authorisation of the Proposal.	N/A	Not Applicable	Future requirement.	
	The structure of the panel and its Terms of Reference shall be reviewed by the Responsible Minister, in consultation with the Minister for Environment and Natural Resources every six years from the date the Terms of Reference are finalised.	N/A	Not Applicable	Future requirement.	
12	As soon as practicable after cessation of mining, tailings and other contaminated earthen materials from the Tailings Storage Facility shall be deposited in the mine pit void using contemporary best-practice placement techniques, then protected with a water cover. Tailings shall preferably be reprocessed before in-pit disposal.	N/A	Not Applicable	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 116. Future item.	2020 MMP, which includes a strategy outlined in the OMP EIS Mine Closure Plan assessed by the Department as adequately detailing the tailings management for closure. Appropriately conditioned proposed Variation of Authorisation under section 38 of the MMA.
	The intention of these measures is to protect the McArthur River water quality and aquatic ecosystems from surface or groundwater contamination consistent with the NT EPA's overarching environmental outcome in Recommendation 3. Any requirement to vary these measures will need approval from the relevant regulator and notification to the NT EPA in accordance with Recommendation 2. These measures should only be varied on the basis of further information to inform leading practice.	N/A	Not Applicable	Future item.	
13	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to conduct a review and synthesis of all water monitoring programs (groundwater and surface water) and implement a revised program that is capable of identifying and quantifying impacts of mining activities and their trends on the environmental values and beneficial uses of the McArthur River to measure performance against the NT EPA's overarching environmental outcome in Recommendation 3. The revised water monitoring program shall:	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 117.	A revised water monitoring program is included in the 2020 MMP. It is included in the Water Management Plan appended to the MMP. The Water Management Plan will be updated in the future to include any changes as a result of the ecotoxicological program or other environmental studies.  Advised by the Operator that it will continue to be updated.
13.i	quantify loads of lead and zinc entering the McArthur River each year	N/A	Not Applicable	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 117.	
13.ii	quantify impacts to water quality and trends in groundwater and surface water at appropriate points including upstream and downstream of the mine to determine that objectives and targets are being met, including the effectiveness of source control to reduce loads as low as is reasonably practicable	N/A	Not Applicable	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 117.	
13.iii	develop appropriate future trigger values for waterways on the mine site and the McArthur River in accordance with the ANZECC 2000 Guidelines. In the interim, the trigger values in the most current WDL shall be used.	N/A	Not Applicable	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 117.	



NT EPA Recommendations Compliance Workbook - Operator

NT EPA Recommendation No.	Recommendation	Score	Compliance Level	Evidence	Comments
	The review and revision of the water monitoring program shall be conducted to the satisfaction of the relevant regulator/s and the NT EPA as part of the broader monitoring review provided for in Recommendation 27 and incorporated into the authorised Adaptive Management Plan.	N/A	Not Applicable	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 117.	
	The results of the monitoring program are to be reported by the Proponent to the relevant regulator and audited by the Independent Monitor every three years. The monitoring report together with the Independent Monitor's audit report shall be made available to government agencies, the Community Reference Group and publicly on the Proponent's and relevant regulators' websites.	N/A	Not Applicable	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 117.  Note Authorisation condition 117 only requires publishing on the Operator's website, not making the reports available in any other format or on the Department's website. The condition doesn't fully reflect the Recommendation wording.	
14	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to prepare and implement a research and investigation program designed to determine the chronic and acute impacts to biota of mine-derived contaminants using recognised and accepted ecotoxicological testing. The program shall be designed to integrate with the monitoring program to be developed in accordance with Recommendation 15. Results of the program shall be used to inform trigger criteria in the Adaptive Management Plan.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 118.  Future item.  Note: There is no mention of the Adaptive Management Plan in this condition.	Operator has commissioned experts to undertake the required studies to satisfy this. At the March 2020 site visit accompanied by the IM, Operator provided updates that demonstrated works completed and works remaining. Works associated with this are covered in the AMP; and the AMP is a condition of Authorisation 0059.  Ecotoxicity testing project commenced. Report to be submitted early March 2021.
	The program shall be prepared and implemented to the satisfaction of the Department of Environment and Natural Resources, and the Australian Government Department of the Environment and Energy.	N/A	Not Applicable		
15	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to implement an aquatic ecosystem monitoring program based on improved understanding of aquatic ecosystems in the McArthur River including flow requirements and available Dry season habitat. The program shall be designed to assess impacts from the mine on:	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 119.  Future item.	Advised by the Operator that the Department has completed assessment of the 2020 MMP and determined that the Operator has in place a monitoring program that meets the requirements of the NT EPA. The Adaptive Management Plan will further inform the monitoring going forward.  Included in the Water Management Plan appended to this MMP. The Water Management Plan will be updated in the future to include any changes as a result of the ecotoxicological program or other environmental studies.  Significant aquatic ecology monitoring was ongoing on the site during the audit period as included in the OPR and EMR. Operator has undertaken freshwater ecology monitoring since 2006. There are currently four monitoring programs undertaken: <ul style="list-style-type: none"> <li>•Macroinvertebrate Monitoring</li> <li>•Diversity and Abundance of Aquatic Fauna</li> <li>•Freshwater Sawfish and Barramundi Acoustic Monitoring</li> <li>•Metals in Aquatic Fauna.</li> </ul>
15.i	water levels in refuge pools/waterholes, upstream and downstream of the mine, including in the McArthur River diversion channel	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 119.	
15.ii	water quality in refuge pools/waterholes in the Dry season	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 119.	
15.iii	the health of aquatic biota in the McArthur River using non-lethal sampling methods.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 119.	

NT EPA Recommendations Compliance Workbook - Operator

NT EPA Recommendation No.	Recommendation	Score	Compliance Level	Evidence	Comments
	The monitoring program shall be prepared and implemented to the satisfaction of the Department of Environment and Natural Resources, and the Australian Government Department of the Environment and Energy.	N/A	Not Applicable	Department responsibility and partly fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 119.  Unable to find a reference to the Australian Government Department of the Environment and Energy.	
	The monitoring program shall be designed to integrate with a revised monitoring program provided for in Recommendation 27 and incorporated into the Adaptive Management Plan, to be developed in accordance with Recommendation 28	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 119.	
	The results of the monitoring program are to be reported by the Proponent and audited by the Independent Monitor every three years. The monitoring report together with the Independent Monitor's audit report shall be made available to government agencies and the community on the Proponent's and relevant regulators' websites.	N/A	Not Applicable	While part of these requirements may be broadly captured under the Adaptive Management Plan auditing condition they are not specifically stated in the Authorisation conditions.	
16	Approvals or decisions in relation to the Proposal, shall include conditions that require the Proponent to conduct all works in accordance with a valid Certificate issued in accordance with the Northern Territory Aboriginal Sacred Sites Act.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 120.  Condition in Authorisation 0059 dated 15Aug2019 - 5 (broad requirement to meet all legislation).	Authorisation conditioned such that Operator must provide evidence of a valid AAPA certificate, as appropriate for proposed work.  All works to be undertaken in accordance with AAPA approval conditions as required by existing legislation.  Operator has multiple AAPA certificates for current work. Is in the process of obtaining certificates for future activities.
17	Prior to any approvals for the Proposal, the Proponent and the responsible Minister shall consult with the Minister for Tourism and Culture on an alternative design of the NOEF that would preserve archaeological site MRM4. Any alternative design of the NOEF must achieve the same environmental outcomes as the currently proposed NOEF, taking into consideration the recommendations in this report.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 121.  Works proposed in the 2020 MMP do not disturb or impact on MRM4. The Operator will continue consultation with the Minister for Arts, Culture and Heritage (also see Recommendation 18). Condition Authorisation 0059 to require mining activities to avoid MRM4 whilst consultation occurs with DTFHC to finalise an agreed NOEF design.  Operator to undertake consultation with relevant parties as per recommendation. All works to be undertaken in accordance with relevant approval conditions.  East of NOEF with significant buffer area. No proposed changes to NOEF.	
18	Approvals or decisions in relation to the Proposal, shall include conditions that require the Proponent to demonstrate to the responsible Minister, and the AAPA or the Minister for Tourism and Culture (where relevant), that it has undertaken a thorough process to identify, inform and consult with the appropriate custodians and traditional owners with an interest in lands that would be or may be affected by the Proposal.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 122.	Any works proposed in the 2020 MMP which extend above the 80m height for the Waste Rock emplacement facilities are subject to Operator obtaining valid AAPA certificates. The Authorisation includes condition/s requiring Operator to demonstrate evidence of consultation going forward. A Stakeholder Engagement Plan specifically addressing engagement with the Traditional Custodian was provided to the Minister by Operator in February 2020.  Summary of EIS consultation undertaken with custodians and Traditional Owners to be provided within six months of approval of the OMP under Authorisation 0059.

NT EPA Recommendations Compliance Workbook - Operator

NT EPA Recommendation No.	Recommendation	Score	Compliance Level	Evidence	Comments
19	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to monitor sulfur dioxide within 1 km downwind of the NOEF, to the satisfaction of the NT EPA and relevant regulator. The objective of this monitoring program should be to identify any increase in sulfur dioxide emissions from the NOEF and any potential air quality risk to human health outside the MRM leases for all stages of the Proposal.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 123.	Air quality matters detailed in the 2020 MMP have been assessed by the Department as appropriate Note: Operator has already implemented a revised Air Quality Management Plan based on consultant advice in response to historical sulfur dioxide emissions from NOEF. This plan is reviewed and improved upon, where required, as part of what to date has been called an Operational Performance Report (OPR) provided by the proponent each year.  Revised Air Quality Management Plan included in the MMP  Operator referred their proposed location for sampling and the Department responded with agreement on that location as included in the AQMP.
	The monitoring program shall be reviewed in accordance with Recommendation 27 and incorporated into the Adaptive Management Plan, to be developed in accordance with Recommendation 28.	4	Full Compliance	AQMP and AMP  AQMP attached to the AMP dated 31Jan2020. TARP also in the AMP.	
	The results of the monitoring program are to be reported by the Proponent to the relevant regulator and audited by the Independent Monitor every three years. The monitoring report together with the Independent Monitor's audit report shall be made available to government agencies, the Community Reference Group and publicly on the Proponent's and regulator's websites.	N/A	Not Applicable	Department responsibility. Confirmed condition in Authorisation 0059 dated 15Aug2019 - 123 does require the results to be made available on the Operator's website. It does not require reporting to the regulator or audit by the IM.  Future item.	OFI included for the Department.
20	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to:		-	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 124 and 68.	Conditions included in Authorisation 0059 address this recommendation, including annual reporting in the Environmental Mining Report, which will be required to be made public.  Included in the Water Management Plan appended to the MMP. The Water Management Plan will be updated in the future to include any changes as a result of the ecotoxicological program or other environmental studies.
20.i	continue a monitoring program, to the satisfaction of the NT EPA on advice of the Chief Health Officer, to determine if aquatic fauna obtained from any reach of the McArthur River is safe to eat during all stages of the Proposal	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 124.	Various annual monitoring programs undertaken.
20.ii	publicly report the results of monitoring, including at appropriate locations in the region	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 124.	Condition requires submission within 24 months, including public reporting. Future item.
20.iii	maintain signage at waterways within the MRM site advising that fishing and harvesting of aquatic food species is prohibited, until the waterways recover and the risk of contamination from consumption of this aquatic fauna is negligible.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 124 and refers to condition 68.  Note the wording of conditions 124and 68 are not as specific related to advising that "fish and harvesting of aquatic food species is prohibited".	Signage is in place. Refer warning signage register. Prohibits access.

NT EPA Recommendations Compliance Workbook - Operator

NT EPA Recommendation No.	Recommendation	Score	Compliance Level	Evidence	Comments
21	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to develop a non-lethal monitoring program for sawfish and from the results, define a specific (measurable and time-bound) threshold for a significant decline in sawfish movement (based on data) that would trigger investigation and implementation of management measures. This threshold is to be developed to the satisfaction of the Australian Government Department of the Environment and Energy and the Department of Environment and Natural Resources, within 12 months of authorisation of the Proposal.	N/A	Not Applicable	<p>Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 119 requires non-lethal monitoring.</p> <p>Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 125.</p> <p>Note: Authorisation 0059 dated 15Aug2019 - condition 125 does not meet the requirement for development of the submission within 12 months of authorisation of the Proposal. It also does not require the satisfaction of the Australian Government Department of the Environment and Energy. Condition 125 only required the submission of the plan within 24 months of the authorisation.</p>	<p>Conditions included in the Authorisation 0059 to address this recommendation.</p> <p>Included in the Water Management Plan appended to the MMP.</p> <p>Use of transponders for sawfish movement monitoring has been in place for more than 3 years. Operator perfecting options for non-lethal monitoring for sawfish and additional sampling of other ecological values that may assist with correlation with the sawfish (related to the Commonwealth requirement).</p>
22	Approvals and decisions in relation to the Proposal shall contain conditions that require environmental objectives to be established and achieved in case the mine site enters into care and maintenance. Environmental objectives should be reviewed by the relevant independent panel/s and approved by the relevant regulator/s after consultation with the Community Reference Group, custodians and traditional owners.	N/A	Not Applicable	<p>Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 126.</p>	<p>The Department is working to establish the Community Reference Group (Recommendation 26), to facilitate consultation with custodians and traditional owners to inform the development of the care and maintenance plan and independent panel (Recommendation 23). Consultation with the Community Reference Group, custodians and traditional owners needs to be progressed.</p> <p>Commenced in the Unplanned Closure Plan although not broader at this stage.</p> <p>Condition 126 in Authorisation requires development of environmental objectives for a Care and Maintenance Plan within 6 months of independent panel (closure) being formed.</p>
23	Approvals and decisions in relation to the proposal will include conditions requiring the Proponent to provide funding to establish and operate a panel of independent experts to:	N/A	Not Applicable	<p>Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 113.</p> <p>Future related to closure panel.</p> <p>Note: the subparts of this recommendation aren't stated in the condition but it does state "in accordance with the relevant NT EPA recommendation".</p>	<p>Planning for independent expert panel establishment is underway by the Department. The Department is developing a framework for the establishment of the independent expert panels for consultation with relevant government agencies.</p> <p>Operator will assist with the establishment of the panel.</p> <p>Condition in Authorisation requires within 6 months of independent panel (closure) being formed.</p>
23.i	review and advise on the development of closure and care and maintenance strategies for mine site domains, and the Proponent's trajectory towards achieving agreed closure objectives	N/A	Not Applicable	<p>Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 113.</p>	
23.ii	review the risk of potential catastrophic failure of the mine levee wall and the McArthur River diversion channel in view of future closure objectives.	N/A	Not Applicable	<p>Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 113.</p>	
	The panel shall be formed:		-		
23.iii	with an independent chair, appointed by the responsible Minister in consultation with the Minister for Environment and Natural Resources	N/A	Not Applicable	<p>Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 113.</p>	
23.iv	on the advice of the relevant regulator/s and the Proponent.	N/A	Not Applicable	<p>Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 113.</p>	

NT EPA Recommendations Compliance Workbook - Operator

NT EPA Recommendation No.	Recommendation	Score	Compliance Level	Evidence	Comments
	The panel shall conduct a rolling 3-5 year review of the mine closure plan to assess the trajectory of closure options for MRM site domains and provide a report to the relevant regulator and the Independent Monitor that is made available to the Proponent, government agencies, the Community Reference Group and the public.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 113.	
	Terms of Reference for the panel shall set out the terms for roles and responsibilities, membership, timeframe for commencement and scope, reporting obligations and transparency and accountability. The Terms of Reference shall be finalised by the responsible Minister, in consultation with the Minister for Environment and Natural Resources acting on advice from the NT EPA, within 12 months of authorisation of the Proposal.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 113.	
	The structure of the panel and its Terms of Reference shall be reviewed by the Responsible Minister, in consultation with the Minister for Environment and Natural Resources every six years from the date the Terms of Reference are finalised.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 113.	
24	An independent third-party assessment of the security that must be provided by the Proponent or Operator for rehabilitation of the Authorised activities at the McArthur River Mine site shall be conducted by a qualified person approved by the responsible Minister. The security amount shall be sufficient to secure the site in a manner that meets the NT EPA's overarching environmental outcome. The independently calculated amount and final amount of the security shall be published on the relevant regulator's website with any variation between the amounts explained.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 127.  Note the condition does not mention the security needing to be sufficient to secure the site in a manner that meets the NT EPA's overarching environmental outcome and it does not require the publishing on a website.  Operator nominated a third party assessor to the Department, which has been accepted. The third party review was completed as part of the 2020 MMP approval and is required every three years thereafter.  Independent reviewer engaged. Independent Assessment report to be provided in 2020.	Publishing on the regulator's website is a regulator action.
	The security amount shall be reassessed every three years if an assessment of the security amount by the regulator has been undertaken during that time in accordance with the Authorisation for the McArthur River Mine.	N/A	Not Applicable	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 127.  Future item.	
25	The Mining Management Plan (overview and environmental management section) and the Authorisation for the McArthur River Mine Overburden Management Project shall be made available to the public on the relevant regulator's website and in hard copy at an appropriate location in Borroloola (e.g. Borroloola Public Library).	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 128.	The Department has committed to liaise with Borroloola Town Council to identify options for publication of the relevant sections of the approved MMP and Authorisation. The Department has in place a process to make public the approved MMP, the Authorisation and any other document supporting document as appropriate.  Future item as not during audit period. However, Operator provided copy to regulator.
26	Approvals and decisions in relation to the Proposal shall include conditions that require a Community Reference Group to be established that has the following roles:	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 129.  Note: the subparts of this recommendation aren't stated in the condition but it does state "in accordance with the relevant NT EPA recommendation".	The Department has commenced planning for the CRG establishment. Draft Terms of Reference are being developed by the Department. A proposed framework for the establishment of the CRG prepared by the Department is to be presented to the Minister for consideration.  Operator will provide funding for the establishment and operation of the Community Reference Group.

NT EPA Recommendations Compliance Workbook - Operator

NT EPA Recommendation No.	Recommendation	Score	Compliance Level	Evidence	Comments
26.i	communicate the mine's performance to the local and broader NT community	N/A	Not Applicable		
26.ii	advise on the most appropriate method for the Proponent to report information that is required to be made publicly available	N/A	Not Applicable		
26.iii	provide a structured forum for review and discussion in setting environmental objectives for adaptive management, operation, care and maintenance, mine closure and the evaluation and costing of mine closure options	N/A	Not Applicable		
26.iv	provide a forum for discussing economic and social post-mining impacts	N/A	Not Applicable		
26.v	translate technical information into communication that is readily understood by the community, clear statements of outcomes to be achieved and progress in achieving them for both operational and closure matters.	N/A	Not Applicable		
	The Group shall be chaired by an independent person appointed by government, who is held in high regard in civic life and has expertise in taking the community interests into account and experience in the position of chair.	N/A	Not Applicable		
	The Group shall comprise members who represent the local community and broader Northern Territory community, as well as key stakeholders, particularly custodians and Traditional Owners.	N/A	Not Applicable		
	A Terms of Reference for the Group shall be developed to the satisfaction of the NT EPA and agreed by the relevant regulator/s and the Department of the Chief Minister. Details regarding the establishment of the Community Reference Group, including roles and responsibilities, membership, timeframe for commencement and scope, reporting obligations and accountability should be decided within 12 months of all approvals being received for the Proposal.	N/A	Not Applicable		
	The structure of the Group and its Terms of Reference shall be reviewed every six years from the date the Terms of Reference are finalised.	N/A	Not Applicable		



NT EPA Recommendations Compliance Workbook - Operator

NT EPA Recommendation No.	Recommendation	Score	Compliance Level	Evidence	Comments
27	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to conduct a complete review and synthesis of all monitoring programs that assess impacts of mining activities on the environmental values and beneficial uses of the McArthur River, in accordance with the NT EPA's overarching environmental outcome in Recommendation 3. The revised monitoring program shall be reviewed by the independent panel/s and Independent Monitor within nine months of authorisation of the Proposal, and then approved by the relevant regulator/s.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 130.  Future item.	Operator has provided a revised monitoring plan/s for surface water, groundwater, air quality and sediment as part of the 2020 MMP for assessment under the MMA.  Monitoring programs are described within the AMP, which will be updated to address relevant conditions of the Authorisation, WDL and EPBC as per the timing requirements outlined in the approvals.
28	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to prepare an Adaptive Management Plan that includes the following key elements:	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 131.  Future requirement.	Future item.  Review of the AMP complete and IM report provided to the department.  AMP appended to the 2020 MMP. The AMP is to be updated to address relevant conditions of the Authorisation, WDL and EPBC as per the timing requirements outlined in the approvals. AMP is a living document.  Next revision of AMP in March 2021 for submission to NT DEPAWS (formerly DENR).
28.i	clear, measurable environmental objectives for all significant environmental risks and potential impacts	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 131.  Future requirement.	Four key environmental management objectives have been established (AMP, p.14) to align with NT EPA recommendations and overarching environmental outcomes. These are high level overarching objectives, which are supplemented by measurable/SMART environmental triggers detailed in the associated Management Plans. Whilst the triggers are measurable, the AMP overarching objectives themselves are not.
28.ii	measurable performance indicators to show that objectives are on target to be met	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 131.  Future requirement.	Measurable performance indicators are included as triggers for actions, but are not directly linked with measurable objectives, therefore there is limited ability to assess whether objectives are on target to be met.
28.iii	pre-determined triggers to warn of potential for performance indicators to be exceeded, as informed by monitoring	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 131.  Future requirement.	The Trigger Action Response Plan covers three levels, and is linked with monitoring results. The trigger levels for monitoring of water, air quality and rehabilitation are listed in AMP Table 7: Trigger Action Response Plan (TARP).
28.iv	pre-determined, realistic and achievable contingency interventions to maintain performance indicators if triggers are consistently exceeded	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 131.  Future requirement.	The contingency measures included in the AMP are a list of possible measures, ranging from simple through to complex (AMP p.50).
28.v	clearly defined management measures/actions that are capable of being implemented in a timely way to meet performance indicators and environmental objectives	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 131.  Future requirement.	The management measures/action are defined in the Management Plans and Monitoring Programs including: monitoring sites, monitoring parameter/analytes and monitoring frequency which are listed in AMP Table 6: Environmental Monitoring Program Summary. Management measures/actions are included, however, the timelines associated are not.
28.vi	monitoring in accordance with relevant Recommendations in this Report to determine whether management measures are effective and to inform the need for adjustments to management measures or need for alternatives	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 131.  Future requirement.	There is a stated intention by the Operator that the AMP will be subject to ongoing annual reviews as part of the Operator's environmental performance reporting.




NT EPA Recommendations Compliance Workbook - Operator

NT EPA Recommendation No.	Recommendation	Score	Compliance Level	Evidence	Comments
28.vii	a continual feedback system to ensure appropriate actions are initiated when triggered and environmental objectives are always being met	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 131. Future requirement.	There is a stated intention that the AMP will be subject to ongoing annual reviews as part of the Operator's environmental performance reporting.
28.viii	continual development of new management actions as required based on knowledge gained from experience at the site and elsewhere across industry.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 131. Future requirement.	There is a stated intention that the AMP will be subject to ongoing annual reviews as part of the Operator's environmental performance reporting.
	All key elements should be auditable. Performance indicators, triggers and actions in the Adaptive Management Plan are aimed at ensuring the specified objectives are met.	N/A	Not Applicable	Unable to find a reference to this sub recommendation in the Authorisation. Future requirement.	AMP Table 1 summarises the key elements and references the section when these are addressed.
	Before approvals or decisions are given or made for the Proposal, the Adaptive Management Plan shall be reviewed by the Independent Monitor or an appropriately qualified, independent third party, and the review findings and plan provided to relevant regulator/s, the NT EPA, the Community Reference Group and be made available to the public.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 131. Future requirement.	Note: Operator prepared the AMP 31Jan2020. IM's AMP review report was completed 15May2020 and submitted to the Department prior to approval or decision on the proposal on 13Nov2020.
29	The Authorisation for the Proposal must provide for approval, implementation and review of the Adaptive Management Plan. To ensure clarity and enforceability, conditions of the Authorisation must:	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 132. Future Requirement.	Conditions included in Authorisation condition 132 to provide for approval, implementation and review of the Adaptive Management Plan.  Next revision of AMP planned in March 2021 for submission to NT DEPAWS (formerly DENR).
29.i	clearly set out the required management objectives and performance indicators	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 132.	Management objectives and performance indicators are clearly set out within the AMP, however they are not all readily measurable.
29.ii	provide clarity on the triggers for changes to management actions, and responsibility and evidentiary basis for decision-making	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 132 Future Requirement	The trigger levels for changes to management actions for monitoring of water, air quality and rehabilitation are listed in Table 7: TARP process.
29.iii	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	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 132. Future Requirement.	The TARP process has some timeframes for actions if triggers are exceeded but does not clarify responsibilities or an evidentiary basis for decision making.
29.iv	establish a process for adjusting triggers that includes the regulator	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 132. Future Requirement.	The AMP states it will be subject to ongoing reviews and revisions and would be updated in consultation with appropriate regulatory authorities.
29.v	establish transparent monitoring, reporting and review requirements	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 132.	The AMP establishes monitoring, reporting and review requirements.
29.vi	establish processes to ensure transparency and stakeholder engagement in Adaptive Management Plan design and implementation	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 132. Future Requirement.	

NT EPA Recommendations Compliance Workbook - Operator

NT EPA Recommendation No.	Recommendation	Score	Compliance Level	Evidence	Comments
29.vii	set out the mechanism for periodic review and approval of amendments to the plan.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 132. Future Requirement.	
	The Adaptive Management Plan and its implementation must be reviewed by the Independent Monitor every three years, with the outcomes of the review made available to the relevant regulator/s, the NT EPA, the Community Reference Group and the public.	N/A	Not Applicable	Department responsibility and fulfilled by condition in Authorisation 0059 dated 15Aug2019 - 132. Future Requirement.	
30	Where trends indicate that performance indicators and environmental objectives will not or are unlikely to be met by implementing the adaptive management plan, the NT EPA must be notified of any resultant changes to the Proposal required under clause 14A of the Environmental Assessment Administrative Procedures.	N/A	Not Applicable	Condition in Authorisation 0059 dated 15Aug2019 - 133. Future requirement.	Conditions are included in Authorisation which reflect triggering of Recommendation 30 in the event there is a departure from the AMP.  The action is a requirement under NT legislation (formerly Environmental Assessment Administrative procedures now Environmental Assessment Act, 2019).  Future requirement but no instances have occurred to date.



**Appendix D**  
Authorisation Compliance Workbook –  
Department

Authorisation Compliance Workbook - Department

2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
<b>VoA 0059 (dated 15 August 2019), Audit period 01 April 2018 to 30 April 2020</b>					
<b>SECURITY AND LEVY</b>					
8	The Operator must provide a security of \$519,728,466 in the form of cash or an unconditional bank guarantee to the Minister prior to undertaking any mining activities authorised by this Variation of Authorisations 0059-01 and 0059-02.[7]	4	Full Compliance	Screen shot of OBIS. Confirmed security of \$519,728,466 held.	The Department advised that OBIS (Operations Business Information System) includes dates and payments. Every time a new security is issued it is entered. Line item for each security have been received. Database managed by securities team. Securities team ensure it is paid to the exact amount due.
9	The security provided for under condition 8 will be reassessed, and may be revised, following each assessment of an amended MMP. The Operator must provide the revised security amount in the form of cash or an unconditional bank guarantee to the Minister.	4	Full Compliance	Screen shot showed evidence of it being updated and reviewed.	The Department advised that the security will be updated following each amended MMP. MMP will include recalculation of disturbance due to additional disturbance or rehabilitation.
10	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 that written notice.[8]	4	Full Compliance	Levy invoice for 2020/21 sighted (screen shot taken).	The Department advised that an invoice generated by securities team 1 July each year. Calculated on security held on 1 July each year. Securities team sends invoice to Operator annually. Contributes to Mining Remediation Fund as 1%. Securities team audited annually financial management act (no non-compliances in last audit).
<b>EXPLORATION</b>					
11	The Operator must ensure that:		-		
11.c	Rehabilitation must be undertaken for locations not needed for further use, including the submission of a rehabilitation report that includes details on proposed adjustment of total security as a result of the works, to the satisfaction of the Minister.	N/A	Not Applicable		Future item. In exploration and mining areas, to date no areas not needed for further use available for rehabilitation.
<b>NON-MINERAL WASTE MANAGEMENT</b>					
12	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:		-		
12.a	concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12, ensuring:		-		
12.a.i	Detailed designs follow the approved concepts for the facility (including 100 year ARI flood immunity, CCL and protective armour, drainage works and bio-security control). The detailed design must include design objectives that satisfies both engineering and environmental performance requirements and clearly defined construction hold points at critical phases of the structure that is likely to affect the design objectives;		-		
12.a.ii	The detailed designs must include allowances for 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; and		-		
12.a.iii	The detailed designs must be reviewed and endorsed by an Independent Certifying Engineer (ICE) without limitation on responsibility and provided to the department prior to commencement of construction.	N/A	Not Applicable		Not constructed.
13	An ICE must warrant and accept both the design and construction works, without limitation on responsibility:		-		Future item.

Authorisation Compliance Workbook - Department

2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
13.e	at completion of the construction works the ICE must approve an "as-constructed" construction report that is to be submitted to the Department. The report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied; and	N/A	Not Applicable		Future item. Not constructed.
13.f	the existing waste facilities must be decommissioned and rehabilitated, but only after an approval of rehabilitation plan by the Department. The rehabilitation plan must include details on proposed adjustment of total security as a result of the works.	N/A	Not Applicable	Future item.	Future item. Currently still using the waste facility.
<b>WASTE ROCK MANAGEMENT</b>					
16	16.From the commencement of this variation to Authorisation Non-benign Waste is to be permanently placed:  a.above the 100 year ARI flood level, unless flood mitigation measures are provided consistent with the 2013-2015 MMP Amendment defined in Condition 1.1.ii.12 and relevant Detailed Designs submitted to the Department in accordance with the conditions of this variation of Authorisation, with the exception of PAF(RE);	4	Full Compliance	IM viewed Territory Records Manager (TRM) system file directory. Letter from Operator to Department dated 18Jan2019 titled RE: Mining Management Plan Amendment - January 2019.  TRM (reference MDOC2019/04335) submitted on 20Aug2019 pdf of email reviewed.  Operator submission email 02Jan2020.  The letter says that it "provides conceptual designs that allow for adequate environmental risk assessment; and provides a detailed design approval governance process". Advised by Department that detailed designs submitted for CW Charlie (e.g. CW Charlie, which is the only stage approved and "developed" in the audit period). The detailed design is in TRM (reference MDOC2019/04335) submitted on 20 August 2019 pdf of email Operator submission email 20200120.	
18	The Operator must only place PAF (HC) and PAF (RE) Waste Rock at the following locations:		-		
18.b	Central West NOEF (CWNOEF) Alpha and Bravo stages, but only after the Western Perimeter Runoff Dam (WPROD) has been designed, constructed and commissioned in accordance with all requirements of the Minister;	N/A	Not Applicable		The IM was verbally advised by the Department that WPROD was completed and operational prior to any waste placement at CWNOEF prior to 2018.
<b>CONSTRUCTION OF THE CWNOEF</b>					
<b>ALPHA AND BRAVO STAGES</b>					
19	The Operator must construct, operate and maintain the CWNOEF Alpha and Bravo Stages in accordance with:		-		
19.a	The version of the document entitled Northern Overburden Emplacement Facility (Central West Phase) Design, Construction & Operations Manual which has been approved by the Minister from time to time, subject to any conditions imposed or changes required by the Minister[1].	N/A	Not Applicable	Screen shot of manual title page.	Department provided evidence of approval of Northern Overburden Emplacement Facility (Central West Phase) Design, Construction & Operations Manual. Submitted 05Feb2016 and approved August 2016 (outside of the audit period).
19.b	Concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.1.ii.12. Should future review of the designs 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.	N/A	Not Applicable	Detailed design report emailed 20Aug2019 (screen shot). Email from Operator to Department dated 20Aug2019 submitting Central Charlie West Detailed Design Report and endorsement of that report by the ICE. TRM reference MR2015/0076.	Alpha and Bravo stages were previously approved and developed outside of the audit period as advised by the Department. Alpha and Bravo stages were part of the 2013-2015 MMP.  Refer to TRM reference MR2015/0076.
20	During construction of the CWNOEF Alpha and Bravo stages,		-		

Authorisation Compliance Workbook - Department

2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
20.b	the Operator must provide construction reports to the Minister upon request including the following:	N/A	Not Applicable		No request has been made by the Department to date.
20.b.i	QA and QC results and reporting for CCLs; and	N/A	Not Applicable		No request has been made by the Department to date.
20.b.ii	results and reporting of testing undertaken to waste rock placement.;	N/A	Not Applicable		No request has been made by the Department to date.
20.b.iii	results and reporting of testing undertaken to confirm alluvial materials placed at the CWNOEF would not generate AMD if exposed to water and were geotechnically suitable for the location they were placed.	N/A	Not Applicable		No request has been made by the Department to date.
<b>CHARLIE STAGE</b>					
22	The Operator is authorised to complete works to prepare and construct CWNOEF Charlie stage in accordance with:		-		
22.a	the 2013-2015 MMP amendment entitled Mining Management Plan Amendment: North Overburden Emplacement Facility – Central West Charlie Stage Foundation and additional information provided to the Department, as defined in condition 1(j)(ii)(10) [sic]. The Operator must ensure:	N/A	Not Applicable	Sighted screen shots of various documents for approving the 2019 MMP amendment.	No additional information has been provided to the Department.
22.a.i	including allowances for survey accuracy/tolerances, the post construction CCL thickness is not less than 500mm;		-		
22.a.ii	the acceptance criteria for all tests, including those outlined in the condition 1.l)(ii)(10), that are to be undertaken as part of the construction must be provided to the Department prior to commencement of the construction;	4	Full Compliance	Email provided with subject MRM   Central West Charlie Stage - Detailed Design Report dated 21/08/2019 from the Department to Operator.  Operator submission email 22Aug2019.  Condition 1 (l)(ii)(10) refers to a number of documents that have not been sighted. The Department did receive the detailed design report and respond to Operator accordingly. Operator submission email 22Aug2018 states "The NOEF Central West Charlie Stage 2018 Works Report (provided as Enclosure 2 of the Central West Charlie MMP Amendment) outlines the design and construction specifications that will apply specifically to the construction of the Central West Charlie stage." The Department advised "this condition refers to CW Charlie foundation works. Operator provided this document to Department [sighted cover email .pdf] - refer to MDOC2018/05440."	
22.b	concept designs presented in the document entitled McArthur River Mine Mining Management Plan Amendment, January 2019, as defined in Condition 1.l.ii.12, and subject to Condition 18c, ensuring:		-		
22.b.ii	The detailed designs must be reviewed and endorsed by an ICE without limitation on responsibility and provided to the Department prior to commencement of construction; and	4	Full Compliance	Email from Operator to Department dated 20Aug2019 submitting Central Charlie West Detailed Design Report and endorsement of that report by the ICE.	
22.b.iii	Should future review of the designs 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.	N/A	Not Applicable		Advised by the Department that future establishment of the independent panel to address the NT EPA recommendation (as reflected in condition 113). If the independent experts (3rd party) identified any issues requiring review, this would be triggered. No independent panel yet.
24.c	any material changes to the amendment must be approved by the ICE and the Department notified as soon as practicable;	N/A	Not Applicable		Advised by the Department that no changes have been notified to the Department.
<b>CONSTRUCTION OF THE CENOEF</b>					

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2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
25	The Operator must construct, operate and maintain the CENOEF in accordance with:		-		
25.a.iii	The detailed designs must be reviewed and endorsed by an ICE without limitation on responsibility and provided to the Department prior to commencement of construction; and	N/A	Not Applicable		Future item. No construction has commenced as using insitu clay as liner is part of the current MMP amendment application before the Minister.
25.a.iv	Should future review of the designs 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.	N/A	Not Applicable		Future establishment of the independent panel to address the NT EPA recommendation (as reflected in condition 113). If the independent experts (3rd party) identified any issues requiring review, this would be triggered. No independent panel yet.
<b>INVESTIGATION OF THE NOEF</b>					
28.c	The Operator must provide a detailed scope of works for the Investigation to the Executive Director of the Mines Division of the Department of Primary Industry and	N/A	Not Applicable		Outside of the audit period, verbally advised final report received by 22 April 2016.
28.d	Upon receipt of the scope of works referred to in condition c, the ED may in his or her discretion: i approve the scope of works; ii refuse to approve the scope of works; or iii request that the Operator submit further information in relation to the scope of works to enable him or her to decide whether to approve or refuse to approve the scope of works.	N/A	Not Applicable		Outside of the audit period, verbally advised final report received by 22 April 2016.
28.e.i	the Operator must provide the further information within the time frame requested by the ED; and	N/A	Not Applicable		Outside of the audit period, verbally advised final report received by 22 April 2016.
28.d	Upon receipt of the scope of works referred to in condition c, the ED may in his or her discretion:	N/A	Not Applicable		Outside of the audit period, verbally advised final report received by 22 April 2016.
28.d.i	approve the scope of works;	N/A	Not Applicable		Outside of the audit period, verbally advised final report received by 22 April 2016.
28.d.ii	refuse to approve the scope of works; or	N/A	Not Applicable		Outside of the audit period, verbally advised final report received by 22 April 2016.
28.d.iii	request that the Operator submit further information in relation to the scope of works to enable him or her to decide whether to approve or refuse to approve the scope of works.	N/A	Not Applicable		Outside of the audit period, verbally advised final report received by 22 April 2016.
28.e.ii	ii.if the Operator fails to submit the further information the ED may refuse to approve the scope of works.	N/A	Not Applicable		Outside of the audit period, verbally advised final report received by 22 April 2016.
32	Interim revised monitoring programme:		-		
32.a	the Operator must provide to the Minister an interim revised monitoring programme that sets out any interim improvements that can be made to the current monitoring programmes that are required to be carried out by the Operator under the MMP; and	N/A	Not Applicable		Outside the audit period.
32.b	the Operator must provide the interim revised monitoring programme referred to in condition 22.a to the Minister by no later than 12:00 pm on 22 June 2016.	N/A	Not Applicable		Outside the audit period.
33	Interim remediation options report:		-		
33.a	the Operator must provide to the Minister a report that sets out any interim remedial options that should be implemented pending the finalisation of any long-term remedial works referred to in condition 31; and	N/A	Not Applicable		Outside the audit period.
33.b	the Operator must provide the interim remediation options report referred to in condition 33.a to the Minister by no later than 12:00 pm on 1 April 2017.	N/A	Not Applicable		Outside the audit period.



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2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
34	Final investigation report:		-		
34.a	as part of the Investigation, the Consultant must prepare an investigation report (Final Report):		-		
34.a.i	addressing each of the matters set out in condition 31;		-		
34.a.ii	providing remediation options;		-		
34.a.iii	providing a revised monitoring programme; and		-		
34.a.iv	any other relevant findings of the Investigation.		-		
34.b	the Operator must submit a copy of the Final Report to the Minister by no later than 12:00 pm on 22 June 2017.	N/A	Not Applicable		Outside of the audit period, verbally advised final report received by 22Jun2017.
34.c	upon receipt of the Final Report, the Minister may in his or her discretion: i approve the Report; ii refuse to approve the Report; or iii request that the Operator submit further information in relation to the Report, or the matters the subject of the Report, to enable the Minister to decide whether to approve or refuse to approve the Report.	N/A	Not Applicable		Outside of the audit period, verbally advised final report received by 22Jun2017.
34.d	If the Minister requires further information in accordance with condition 34.c.iii:	N/A	Not Applicable		No further information requested by the Minister.
34.d.i	the Operator must provide the further information within the time frame requested by the Minister; and	N/A	Not Applicable		No further information requested by the Minister.
34.d.ii	if the Operator fails to submit the further information in accordance with condition 34.d.i, the Minister may refuse to approve the Report.	N/A	Not Applicable	email dated 05Nov2020 with subject IM responses for Condition 34.d.ii.	Outside of the audit period. Verbally advised final report received. Email dated 05Nov2020 with subject IM responses for Condition 34.d.ii providing supporting documentation and rationale.
<b>WATER MANAGEMENT AND STORAGE</b>					
38.a	38.The Operator must not transfer water to or discharge water from any water storage structure until water quality analysis has been received and interpreted by the Operator and results confirm the water is suitable for the destination, having regard to the requirements of this document and the MMP and any other relevant restrictions on transfer or discharge of water within or from the Mine. In this regard:  a.The Operator is authorised to undertake works to release water from WMD to Little Barney Creek in accordance with the 2013-2015 MMP amendment and additional information provided to the Department, as defined in Condition 1.1)(ii)(11) and Condition 38(b).	N/A	Not Applicable		No Department action.
38.c	Total loads of mine-derived contaminants from all source inputs must be characterised for the 2017-2018 period by 30 June 2020, unless otherwise agreed in writing by the Department.	4	Full Compliance	Screen shot from TRM reviewed.  Email with report attachments provided with subject MRM   Variation of Authorisation Condition 38(c); 2017-2018 Mine-Derived Loads dated 08/05/2020.  The 2017/18 Mine Derived Analyte Loads Assessment McArthur River Mine dated 01Feb2019 was submitted on 08May2020 fulfilling this condition.	

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2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
38.d i	d.The Operator must ensure:  i.The WMD release to Little Barney Creek is undertaken in a way that minimises localised erosion, and utilises suitable energy dissipation and flow spreader structures (e.g. rock basin) and be monitored daily during release events; In the event of erosion at the Carpentaria Highway culvert system, remediation must be implemented to the satisfaction of DIPL and Department;	N/A	Not Applicable		Not applicable as no evidence of erosion. OPR 2018-2019 included profiles of the culvert system.
<b>WPROD CONSTRUCTION</b>					
41	The Operator must construct the WPROD in accordance with the following regime:		-		
41.i	field water quality parameters, flow meter volumes and laboratory analysis must be submitted to Department on a monthly basis;	N/A	Not Applicable		WPROD constructed and completed prior to the audit period circa 2017.
42	Construction reports including QA and QC data must be provided to the Department within 30 days of construction being completed.	N/A	Not Applicable		WPROD constructed and completed prior to the audit period circa 2017.
<b>EPROD CONSTRUCTION</b>					
44	The Operator must construct the EPROD in accordance with the following regime in the event groundwater dewatering is necessary:		-		IM was advised by the Department that no groundwater relevant to this condition was found during the audit period and therefore there was no dewatering required.
44.i	field water quality parameters, flow meter volumes and laboratory analysis must be submitted to Department on a monthly basis;	N/A	Not Applicable	Screen shot of comments section of OBIS around early approval by the Department.  Email from the Department to Operator with report attachments provided with subject MRM - Commissioning of EPROD dated 20 March 2020.  EPROD was constructed and then operator applied for early commissioning to reduce a safety risk. Department provided approval for early commissioning that was different to what the condition required. 20 March 2020 was the timeframe.  "MRM have undertaken a risk assessment on the commissioning of EPROD to identify potential risks and identify relevant controls. The Independent Certifying Engineer (ICE) has reviewed and endorsed the risk based approach and prepared a Commissioning Plan."  Department responded to Operator via email dated 20 March 2020 "I therefore formally advise that the use of EPROD for operational purposes is approved and is subject to being carried out in accordance with the submitted endorsement letter from the ICE and accompanying Commissioning Plan."	
45	Construction reports including QA and QC data endorsed by the Independent Certifying Engineer (ICE) must be provided to the Department prior to commencement of operation within 30 days of construction being completed	4	Full Compliance	Email from the Department to Operator with report attachments provided with subject MRM - Commissioning of EPROD dated 20Mar2020.  Verbally advised ICE endorsement was received as part of the early commissioning request. The ICE endorsement noted that QA/QC information had not been provided at that stage. Department responded to Operator via email dated 20Mar2020 "I therefore formally advise that the use of EPROD for operational purposes is approved and is subject to being carried out in accordance with the submitted endorsement letter from the ICE and accompanying Commissioning Plan."	
<b>TAILINGS STORAGE FACILITY</b>					

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2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
46.d	construction reports including QA and QC data must be provided to the Department within 30 days of construction being completed.	4	Full Compliance	Screen shot of OBIS TSF Cell 2 Stage 5 Raise Construction Report. Includes report and acknowledgement of receipt.  MRM Cell 2 TSF Stage 5 Raise to RL 10059 m - Construction Report; refer page 472 for example of QA/QC data. Acknowledgement email provided with subject MRM   TSF Cell 2 Stage 5 Raise Construction Report dated 26 August 2020.	Applied to different lifts. Latest one viewed. No comment re submission within 30 days of construction completion as that is an operator task.
47	The Operator must convene an advisory board (Independent Tailings Review Board or ITRB) and the Operator must ensure that includes independent geotechnical, tailings, and groundwater specialists which meets regularly to advise on operation of the TSF and any future modifications to its design. Should future review of the designs 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.	N/A	Not Applicable		ITRB exists. No occasion requiring review identified. Future establishment of the independent panel to address the NT EPA recommendation (as reflected in condition 113). If the independent experts (3rd party) identified any issues requiring review, this would be triggered. No independent panel established yet (future requirement).
48	Details of the members of the ITRB panel and meeting frequency must be submitted to the Department for endorsement by the Department.	3	Part Compliance (High)	ITRB panel members and meeting frequency endorsement by the Department not readily available. Letter from Operator dated 04 September 2015 subject Request for additional information following the August Site Inspection. Letter from Department dated 15 September 2015 subject McArthur River Mine Project - Independent Tailings Review Board - Proposed Members.  Department approved the ITRB membership in 2015 (outside of audit the period). ITRB meets on an as needed basis. Endorsement of ITRB in September 2015 provided. Operator requested a change via letter to the Department on 17 October 2016 and no response from the Department was able to be provided to the IM.	Department considers current ITRB Members are: -Professor David Williams, The University of Queensland -Dr Bruce Brown, Bruce Brown Consulting -Dr Tamie Weaver, ERM Australia.  OFI: Confirm details of the meeting frequency of the ITRB.
51	The Operator is authorised to complete works to recommission TSF Cell 1 in accordance with the 2013-2015 MMP amendment and additional information provided to the Department, as defined in Condition 1.1(ii)(12). The Operator must ensure: a.The existing clay cap, if redundant, is removed as part of the recommissioning works; b.The Cell Seepage Interception Trench system must be constructed and an operation manual detailing rules of operation, maintenance and environmental monitoring requirements be developed prior to operation of the system; and c.The TSF OMS manual, including the TARP must be updated to include Cell 1.	N/A	Not Applicable		Relates to any additional information prior to authorisation of the work.
52.a	The Operator is authorised to complete lift Cell embankment raise works as follows: a.Cell 1 Stage 4 is to be in accordance with the 2013-2015 MMP amendment and additional information provided to the Department, as defined in Condition 1.1(ii)(12).		-		No action from Department.

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2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
52.d	At completion of the construction works the ICE must approve an "as-constructed" construction report and updates to the TSF Operations, Maintenance and Surveillance Manual and TARPs. The construction report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied to the Department prior to the deposition of tailings; and	N/A	Not Applicable	ICE letter of submission dated 15 October 2020 titled TSF Cell 1 Stage 4 Raise Construction Report Independent Certifying Engineer (ICE) Endorsement Letter. Full report titled MRM Cell 1 TSF Stage 4 Raise to RL 10056 m - Construction Report July 2020.	Not applicable as there was no action required from the Department. Receipt will be issued only. Department does not review reports. ICE approves the report. Cover letter states that works were undertaken in accordance with the ITRB endorsed design. IM did not check that the report included the requirements of the condition as that is an Operator task. Submitted outside of the audit period.
55	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:	4	Full Compliance	Department letter of response dated 30Jan2020 regarding MRM quarterly TSF Reports submitted between February 2018 and November 2019 titled MDOC2020 00077 Acceptance - Quarterly TSF Reports.  TSF Quarterly Report December 2019 to February 2020 TSF Quarterly Report March to May 2020  Reports were received by the Department to meet this condition.	Note that the letter response from the Department appeared to be for the review of 1.5 years so the frequency of these reviews is unknown.  The Department advised that reports have been reviewed. The Department verified that the Operator had addressed and implemented the majority of the recommendations - refer to MDOC2020/04587 and MDOC2020/06424 TSF Quarterly Report December 2019 to February 2020 TSF Quarterly Report March to May 2020 Feedback not provided to Operator due priority focus on urgent assessment and approval of 2020 MMP.
55.a	water levels in the TSF;		-		
55.b	all monitoring data associated with the seepage (including geotechnical and environmental monitoring);		-		
55.c	flow rate of each seep;		-		
55.d	all actions undertaken during the quarter associated with the seepage and management of Tailings; and		-		
55.e	all actions planned for the next quarter associated with seepage and management of Tailings.		-		
56	The Operator is authorised to complete works to raise the embankment of the TSF in accordance with the document entitled McArthur River Mining Pty Ltd - Cell 2 TSF Stage 5 Raise to RL 10059 - Detailed Design Report – May 2018 (GHD Report), ensuring:		-		
56.a	Construction reports including QA and QC data endorsed by the Independent Certifying Engineer (ICE) must be provided to the Department prior to the deposition of tailings within the Cell 2 Raise 5 storage capacity and within 30 days of construction being completed.	4	Full Compliance	Acknowledgement email dated 26 August 2020 titled MRM TSF Cell 2 Stage 5 Raise Construction Report.  The Department received Cell 2 TSF Stage 5 Raise to RL 10059 - Detailed Design Report on 24 August 2020 and responded on 26 August 2020.	
57	The operator is authorised to construct, operate and maintain Cell 2 Stage 6 embankment lift in accordance with:		-		

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2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
57.a.ii	The detailed designs must be reviewed and endorsed by the ITRB provided to the Department prior to commencement of construction; and	4	Full Compliance	<p>MRM Independent Tailing Review Board Document Comment Tracking Register for McArthur River Mining Pty Ltd Cell 2 TSF Stage 6 Raise to RL 10061 Detailed Design Report Dated July 2019.</p> <p>Letter from Operator to the Department dated 2 September 2019 Re: McArthur River Mine – Endorsement of Detailed Design for Tailings Storage Facility Cell 2 Stage 6.</p> <p>MR2019 0275 screenshot showing detailed design report received September 2019.</p> <p>MRM TSF Cell 2 Stage 6 Lift - Detailed Design and ITRB Endorsement</p> <p>Evidence showed that the detailed designs were reviewed and endorsed by the ITRB and provided to the Department.</p>	The mine is placing tailings in stage 5 currently.
57.a.iii	iii.Should future review of the designs by independent experts require additional matters to be addressed, the operator together with the ITRB must provide and implement a written response that justifies the existing design or proposes an alternate design to the satisfaction of the Department.	N/A	Not Applicable		Future item.
57.b	at completion of the construction works the ICE must approve an “as constructed” construction report and updates to the TSF Operations, Maintenance and Surveillance Manual and TARPs. The construction report must detail all the works undertaken and include evidence of hold-point sign-offs, testing carried out (including but not limited to field tests, laboratory tests and statistical tests), acceptance criteria applied and compliance of the test results with the acceptance criteria. Where deviations to the plan have occurred, justification that demonstrates the design intent and performance of the structure has not been compromised must also be supplied to the Department prior to the deposition of tailings.	N/A	Not Applicable		Future item. Not constructed
<b>GEOCHEMICAL, GEOTECHNICAL AND HYDROGEOLOGICAL ASSESSMENTS AND INVESTIGATION DRILLING</b>					
59	Characterisation data from the drilling must be kept and available to the Minister on request and reported in the Operator’s Annual Operational Performance Report.	N/A	Not Applicable		No requests by the Department have been made.
60	All documentation relating to the geochemical assessment and alluvial investigation is to be made available to the Department on request.	N/A	Not Applicable		No requests by the Department have been made.
<b>ENVIRONMENTAL MONITORING</b>					
61	The Operator must collect and maintain the following to the satisfaction of the Minister:		-		
61.a	all environmental monitoring data which is contemplated in this document or the MMP or reasonably required for the proper implementation of this document or the MMP; and	N/A	Not Applicable		Department has not requested any data and receives the quarterly monitoring data only. Operator advises that they maintain an electronic record of all monitoring data indefinitely.
61.b	any other environmental monitoring records and data prepared or obtained by or in the possession of the Operator at any time in connection with the Mine (including for example, monitoring records or data submitted to the Commonwealth government).	N/A	Not Applicable		Department has not requested any data and receives the quarterly monitoring data only. Operator advises that they maintain an electronic record of all monitoring data indefinitely.

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2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
62	The Operator must ensure data contemplated by condition 58 is provided to a mining officer upon request and will not be destroyed without the written permission of the Minister.	N/A	Not Applicable		Department has not requested any data and receives the quarterly monitoring data only. Operator advises that they maintain an electronic record of all monitoring data indefinitely.
63	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 Minister within 30 days of its establishment.	N/A	Not Applicable		Department not aware of any additional surface water monitoring locations.
64	Before 1 November 2016, the Operator must install and from then on maintain continuous monitoring devices. In this regard:		-		
64.b	devices must at a minimum measure electrical conductivity, and may measure additional parameters such as pH; and		-		OFI: Confirm that only Electrical Conductivity monitoring is the intent of the condition or specify other parameters required e.g. pH, flow monitoring, etc.
65	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). In this regard:		-		
65.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 Operational Performance Report;	2	Part Compliance (moderate)	<p>Previous Authorisation conditions relevant during the audit period required bore construction activities to be reported. No Department evidence was available acknowledging bore construction activities. The Operator advised the IM that in 2019 the Operator advised the Department that they had constructed 26 groundwater bores in 2018 (reviewed email to Department dated 01Apr19). The OPR 2018-2019 Appendix Z did include the construction logs, although it was not required by the condition at the time and was not within 30 days of completion of construction.</p> <p>Note the June 2019 version (Condition 56), December 2018 version (Condition 52) and July 2018 version (Condition 50) of the Authorisation, that were relevant during the audit period, required submission of bore logs to the Minister within 30 days of completion. No evidence was provided by the Department of bore logs being submitted to the Minister within 30 days of completion. Bores are known to have been in construction in 2018 during the audit period and there was no evidence available from the Department of correspondence to the Operator about those bores.</p> <p>There was insufficient evidence for this condition in the audit period.</p>	<p>June 2019 version of the Authorisation that was relevant during the audit period included the below conditions:</p> <p>56.a construction logs must be provided to the Minister within 30 days of completion of construction;</p> <p>56.b bore location coordinates in GDA 94 format must be provided to the Minister within 30 days of completion of construction;</p> <p>No OFI for this part compliance as the most recent Authorisation condition was complied with.</p>
65.b	logs of maintenance activities must be kept available to the Minister upon request; and	N/A	Not Applicable		No request for maintenance activities has occurred from the Department.

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2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
65.c	logs of bore decommissioning activities must be kept and available to the Minister on request and reported in the Operator's Annual Operational Performance Report.	2	Part Compliance (moderate)	<p>Previous versions of this Authorisation, relevant during the audit period, required the decommissioning of bore activities to be prior notified to the Department and logs reported. No Department evidence was available acknowledging the notification of proposed decommissioning or provision of the logs within 30 days of the completion of decommissioning activities from the Department.</p> <p>An email/letter of submission of decommissioning logs to the Department was provided to the IM by the Operator dated 01Apr2019. This letter included decommissioning of one bore from November 2018 and one from 28Feb2019 so was not within 30 days of completion of decommissioning.</p> <p>The Operator provided a letter to the IM that was addressed to the Department dated 17Jul2019. This letter, which was emailed to the Department, advised the intention to decommission 25 groundwater bores.</p> <p>No Department request for bore decommissioning activities has been made since 15Aug2019 Authorisation conditions commenced.</p> <p>The location of the Decommissioned, Extended and Damaged Bores on the 2019 NOEF is included in EMR 2019-2020. Section 4.3.2 of EMR: "Thirty-five groundwater monitoring bores were decommissioned during the reporting period due to approved construction activities. Details of the decommissioned monitoring bores are included in 2019 Hydrogeological Drilling and Field Campaign report (MRM, 2020d)."</p> <p>There was insufficient evidence from the Department in relation to this condition.</p>	<p>June 2019 version of the Authorisation that was relevant during the audit period included the below conditions: 56.d. if bores are subject to mining activities that will destroy or damage the bore, the Operator must notify the Minister in writing of the proposed decommissioning, and then must ensure the bores are decommissioned before the commencement of the relevant mining activities; and 56.e. logs of decommissioning activities must be kept and provided to the Minister within 30 days of completion of decommissioning.</p> <p>Unable to locate section on decommissioned bores in OPR 2018-2019, although given this condition only included that requirement from August 2019, that is acceptable.</p> <p>No OFI as the most recent Authorisation condition was complied with.</p>
69	For the purposes of managing dust, to the satisfaction of the Minister:		-		
69.a	the Operator must employ dust mitigation and monitoring measures at the Mine and in the course of all mining activities which generate dust, to minimise dust emission and impact on the Receiving Environment;	4	Full Compliance		Department refers to OPR with respect to dust management.
69.b	If dust is entering the Receiving Environment resulting in or having the potential to cause environmental harm the Operator must undertake works or change its systems or practices to reduce dust to levels which no longer cause potential or actual environmental harm; and	4	Full Compliance	<p>Letter of response dated 30Jan2020 regarding MRM Operational Performance Reports submitted to the Department for 2016-2017; 2017-2018 and 2018-2019 titled MDOC2020 00078 Operational Performance Report Acceptance.</p> <p>Department refers to OPR with respect to dust management. OPR is reviewed by the Department with areas for improvement prior to next reporting period identified and advised to the Operator. Specifically review of the letter response from the Department to Operator about the 2016-2017; 2017-2018 and 2018-2019 OPRs had directions for Operator to undertake some actions.</p>	
69.c	Any dust suppressant must be suitable for the location where it is to be used.	4	Full Compliance		Department not aware of any dust suppressants being used.
<b>INDEPENDENT MONITORING ASSESSMENT CONDITIONS</b>					
73	The Department will engage an Independent Monitor to undertake the independent monitoring assessment.	4	Full Compliance	<p>Advisian appointed as the IM to review audit period 1 April 2018 to 30 April 2020. Notification of acceptance letter Department to Advisian dated 11 December 2019.</p>	



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2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
74	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.	4	Full Compliance	IM was advised by the Department that this condition is acknowledged.	
75	The Independent Monitor will:		-		
75.a	monitor the environmental performance of the Mine by reviewing:		-		
75.a.i	environmental assessments and monitoring activities undertaken by the Operator; and	4	Full Compliance	The IM scope in 2020 is to audit and review environmental compliance performance of the mine against environmental regulatory approvals by reviewing environmental assessments and monitoring activities undertaken by the Operator.	
75.a.ii	environmental assessments and audits undertaken by the Department; and	3	Part Compliance (High)	Department has not specifically conducted environmental assessments or formal audits of the Mine.  Letter of response dated 30Jan2020 regarding MRM Operational Performance Reports submitted to the Department for 2016-2017; 2017-2018 and 2018-2019 titled MDOC2020 00078 Operational Performance Report Acceptance.	The Department undertakes a number of regulatory activities but they are not specifically environmental assessments or formal audits. Site inspections and OPR review by Department have occurred.  OFI: Determine what, if any, environmental assessments and audits of the Operator shall be undertaken by the Department.
75.b	report to the Operator and the Department any urgent issues requiring investigation and reporting.	N/A	Not Applicable		Note: no urgent issues have been identified by the IM as part of Tasks 1 to 6 to date.
77	The Department will engage an Independent Monitor in accordance with its procurement processes.	4	Full Compliance	Probity Report (Merit Chartered Accountants) dated 22/11/2019 titled M2019 0076~0035 Final Probity Report - DPIR Independent Monitoring.  IM received Purchase Order for IM services from NT Government. Tender process was undertaken in compliance with NTG procurement guidelines. Independent probity advisor (Merit Chartered Accountants) provided a report indicating compliance. The Probity Report scope was "This engagement focused on whether the probity and accountability of this process was consistent with the relevant requirements of the Northern Territory Government policies, the Tender Assessment Plan and Probity Plan, and practice guidelines for ensuring ethical behaviour and fair dealing in this assessment process." Related to the process to select a successful tenderer the reports states there was no indication that the process "has been undertaken other than with due probity as per the Tender Assessment Plan and Probity Plan."	
78	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 have the necessary expertise, relevant experience and the necessary resources.	N/A	Not Applicable		As this condition states "may" rather than "must", it is considered not applicable as it is optional.
79	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:	4	Full Compliance		The IM was verbally advised by the Department that the operator was involved in the development of the scope of works and the tender assessment panel.
79.a	the conditions of tendering; and	4	Full Compliance	Part of tender documentation issued which Operator was involved with the development of the Request for Tender (RFT).	
79.b	the scope of services; and	4	Full Compliance	Advised that the Operator was involved in developing the scope of work.	
79.c	the assessment criteria; and	4	Full Compliance	Advised that the Operator part of tender assessment panel.	
79.d	the conditions of contract.	4	Full Compliance	Part of tender documentation issued which Operator was involved with the development of the RFT.	

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2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
80	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.	4	Full Compliance	Operator were involved throughout the process and had input during development therefore no requirements for request for changes.	
81	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.	3	Part Compliance (High)	Sighted copy of Department letter to stakeholders (dated 12 December 2020) on appointment of IM. This letter provided Department contact details for any clarifications regarding the IM.  The Department provided the Future Tender Opportunity notice of intention to call for tenders online requisition document obtained from Procurement Services details expected release date of 01/02/2019. website address: <a href="https://tendersonline.nt.gov.au/Tender/List/#!/FutureOpportunities">https://tendersonline.nt.gov.au/Tender/List/#!/FutureOpportunities</a> . It clearly identified "Darwin - Consultancy - McArthur River Mine - Independent Monitor Services for a Period of 36 Months" and provided contact details that could have been used for any comment (note: while IM reviewed the notice, we were unable to view it from the website during the audit period because access is only available for a limited timeframe).	No OFI as the time for community submission prior to advertising the tender has passed.
82	The terms of engagement of the Independent Monitor may include the following:		-		As this condition states "may" rather than "must", all sub- conditions are considered not applicable as they are optional.
82.a	a period of engagement between three and five years;	N/A	Not Applicable	Section reference 3.3 of the Conditions of Contract - Consultant Services Period Contract version 5.3 dated 01Jun2019.	
82.b	a statement acknowledging that the Operator is responsible for the costs of the Independent Monitor;	N/A	Not Applicable	Email dated 30Jan2020 from the Operator to the Department subject: Confirmation of the Independent Monitor.	Department provided evidence that the Operator were advised who the IM was. There is no reference in Conditions of Contract - Consultant Services Period Contract version 5.3 dated 01Jun2019 related to payment by the Operator.
82.c	a warranty by the Independent Monitor that it will:		-		
82.c.i	act independently of the Department, the Operator, the Minister and any other person; and	N/A	Not Applicable		Unable to locate in RFT (no reference to word warranty or independently) other than the name IM. No reference in Conditions of Contract - Consultant Services Period Contract version 5.3 dated 01Jun2019.
82.c.ii	act honestly, reasonably and with the degree of professional care, knowledge, experience, skill and diligence which may reasonably be expected; and	N/A	Not Applicable		This is covered in RFT Section 10a for professional advice and skill and 10c for reasonable care in Conditions of Contract - Consultant Services Period Contract version 5.3 dated 01Jun2019.
82.c.iii	act within the time prescribed under these conditions, the terms of engagement, or where no time is prescribed, within a reasonable time; and	N/A	Not Applicable		Unable to locate in RFT or Conditions of Contract - Consultant Services Period Contract version 5.3 dated 01Jun2019.
82.c.iv	immediately notify the Department in writing upon becoming aware of the existence or possibility of a conflict of interest;	N/A	Not Applicable		RFT Section 17 of the Conditions of Contract - Consultant Services Period Contract version 5.3 dated 01Jun2019.
83	If the Independent Monitor requires an indemnity, the Operator must enter into a binding agreement providing a reciprocal indemnity to the Department.	N/A	Not Applicable		None requested by IM.
84	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.	4	Full Compliance	Letter dated 30 January 2020 with subject "Appointment of Advisian Pty Ltd as MRM Independent Monitor". Operator acknowledgement of correspondence dated 30 January 2020	
85	The Operator and the Department must not interfere or attempt to influence the Independent Monitor in its assessment of environmental performance under these conditions.	4	Full Compliance	IM has observed no interference or attempt to interfere with the performance of its IM role.	
86	The Operator and the Department must each:		-		

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2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
86.a	cooperate with the Independent Monitor; and	4	Full Compliance	Very high level of cooperation from the Department in assisting the IM.	
86.b	provide all necessary information and documents within their possession, custody or control to the Independent Monitor; and	4	Full Compliance	All requests for information have been responded to promptly to provide the relevant documentation requested.	
86.c	procure for the Independent Monitor access to such premises owned, leased, or licensed by it as may be reasonably necessary,	4	Full Compliance	IM workshops and meeting conducted at Department's Darwin office in March and November 2020.	
86.d	to enable the Independent Monitor to undertake its assessment of environmental performance under these conditions.	4	Full Compliance	The Department has facilitated and assisted the IM to undertake its assessment of environmental compliance performance.	
87	The Independent Monitor must engage with the Operator, the Department and the Community in undertaking the independent monitoring assessment.	4	Full Compliance	The Department included in the scope of works of the IM that the IM is required to engage with the Operator, the Department and the Community in undertaking its assessment.	
88	If the Independent Monitor identifies an issue it considers requires urgent investigation and reporting:		-		
88.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	N/A	Not Applicable		No issues requiring urgent investigation and reporting identified to date.
88.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	N/A	Not Applicable		No issues requiring urgent investigation and reporting identified to date.
88.c	the Department may, where appropriate, advise the Operator and the Independent Monitor of action the Department proposes to take; and	N/A	Not Applicable		No issues requiring urgent investigation and reporting identified to date.
88.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	N/A	Not Applicable		No issues requiring urgent investigation and reporting identified to date.
88.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	N/A	Not Applicable		No issues requiring urgent investigation and reporting identified to date.
88.f	the Operator and the Department must facilitate the Independent Monitor's investigation and report.	N/A	Not Applicable		No issues requiring urgent investigation and reporting identified to date.
89	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.	4	Full Compliance	The IM activities have been scheduled to support the established regulatory activities (e.g. EMR 31 August) and mindful of the wet season constraints.	
90	The Independent Monitor must prepare and provide a report:		-		OBS: Department entitled the report: "Annual Environmental Performance Audit Report".
90.a	Annually to the Minister to assist with the review of the Mining Management Plan; and	N/A	Not Applicable		MMPs are no longer required annually. They are required when there is a significant change to mining operations. The IM has reviewed the AMP, which is a component of the MMP but a specific review of the MMP is not currently in the scope tasks 1 to 13.
90.b	on request by the Minister.	N/A	Not Applicable		Future item. No request made by the Minister to date.
91	The Minister must provide a report received from the Independent Monitor to the Operator and the Department within 14 days of receiving the report.	N/A	Not Applicable		Future item.
93	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.	4	Full Compliance	Department advised they will upload the reports on their website. Previous reports have been uploaded and are still available from the website.	

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2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
94	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.	N/A	Not Applicable		Future item. Previous comments are available on the Department's website.
95	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 75 b which are the responsibility of the Department.	N/A	Not Applicable		Nothing has been triggered under condition 75b.
96	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.	4	Full Compliance	Emails providing invoices to Operator for reimbursement of costs for IM Services under contracts D12-0274 and D19-0053 dated 23/12/2019 and 01/05/2020 respectively.	Invoices have been issued and paid.
98	If the Operator disputes a notice provided by the Department under condition 96:		-		No disputes have occurred in the audit period.
98.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		-		
98.c	the Chief Executive of the Operator and the Chief Executive of the Department must meet within 5 working days to resolve the dispute.	N/A	Not Applicable		No disputes have occurred in the audit period.
99	If there is a dispute (other than a dispute mentioned in condition 98) 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 5 working days to resolve the Dispute.	N/A	Not Applicable		No disputes have occurred in the audit period.
100	If the Chief Executive of the Operator, the Chief Executive of the Department and the Independent Monitor are unable to resolve a Dispute within 10 working days of meeting in accordance with condition 99, the Operator and the Department may agree to the appointment of an independent party to assist in the resolution of the Dispute.	N/A	Not Applicable		No disputes have occurred in the audit period.
101	If, within 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.	N/A	Not Applicable		No disputes have occurred in the audit period.
102	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.	N/A	Not Applicable		No disputes have occurred in the audit period.
103	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.	N/A	Not Applicable		No disputes have occurred in the audit period.
104	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.	N/A	Not Applicable		No disputes have occurred in the audit period.
105	The Operator and the Department must:		-		No disputes have occurred in the audit period.

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2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
105.a	Bear their own costs of resolving the Dispute under this condition; and	N/A	Not Applicable		No disputes have occurred in the audit period.
105.b	Bear equally the costs of any independent party engaged.	N/A	Not Applicable		No disputes have occurred in the audit period.
<b>OVERBURDEN MANAGEMENT PROJECT</b>					
107	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, in accordance with clause 14A of the Environmental Assessment Administrative Procedures 1984.	N/A	Not Applicable		No correspondence on proposed alterations has been received by the Department.
108	Within 18 months of authorisation[1] of the Overburden Management Project, the Operator must submit a plan to the Department for review, that:	N/A	Not Applicable		Future item.
108.a	Enables measurement of total loads of lead and zinc and is consistent with requirements of Condition 117;	N/A	Not Applicable		Future item.
108.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 38.c), taking into account seasonal variations in rainfall, and subject to future annual load calculations;	N/A	Not Applicable		Note: Operator has provided early information on lead and zinc loads for the reporting period in the OPR (2018-2019).
108.c	includes recommendations and outcomes arising from audits of loads by the Independent Monitor; and	N/A	Not Applicable		Future item.
108.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 Adaptive Management Plan (Condition 131).	N/A	Not Applicable		Future item.
sub 108	Unless otherwise agreed in writing by the Department. The plan, once approved by the Department must be implemented.	N/A	Not Applicable		Future item.
109	Within 18 months of authorisation of the Overburden Management Project, the Operator must submit a plan to the Department for review, that shall include:	N/A	Not Applicable		Future item. Operator has commenced work via engaging a specialist to develop SSTVs.
109.a	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 117; and	N/A	Not Applicable		Future item. Operator has commenced work via engaging a specialist to develop SSTVs
109.b	a commitment that creeks on the mine site to show long-term improving trends in water quality within 20 years after cessation of mining.	N/A	Not Applicable		Future item. Operator has commenced work via engaging a specialist to develop SSTVs
sub 109	The plan, once approved by the Department must be implemented. The relevant findings from the plan must be incorporated into the Adaptive Management Plan (AMP).	N/A	Not Applicable		Future item. Operator has commenced work via engaging a specialist to develop SSTVs
110	Within 18 months of authorisation of the Overburden Management Project, the Operator must calculate contaminant loads and contaminant concentrations entering creeks and the McArthur River using system modelling. The modelling must use suitable site-specific data collected as part of Condition 117 and be subject to review by the relevant independent panel at three year intervals. Specific assumptions to be tested include but are not limited to:	N/A	Not Applicable		Future item.
110.a	groundwater flow paths; and	N/A	Not Applicable		The Operator has requested approval to install additional groundwater bores to assist with revising the modelling.

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2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
110.b	attenuation of metals from mine-derived wastes	N/A	Not Applicable		Future item.
sub 110	The Operator must provide a written response to the Department, if an independent technical panels, required under Condition 113, review of the models and modelling outputs, and the data collection programs that informed the model development include recommendations and/or improvements. All relevant outputs must be used to inform and update the Adaptive management Plan.	N/A	Not Applicable		Future item.
111	From the date of this approval, an independent environmental audit of the Quality Assurance (QA) and Quality Control (QC) procedures and waste rock identification and handling performance must be undertaken at intervals of every three years. The results of the audit are to be provided to the Department within 6 weeks and to the relevant independent panel. 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.	N/A	Not Applicable		Future item. Due August 2022.
113	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 in accordance with the relevant NT EPA recommendation.	N/A	Not Applicable		Future item. Terms of reference being developed and will then be issued to Minister to seek endorsement, planned for early 2021.
114	Within 12 months 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:	N/A	Not Applicable		Future item. Department not aware of any early works undertaken.
114.a	controls seepage to the Barney Creek diversion channel and the McArthur River	N/A	Not Applicable		Future item. Department not aware of any early works undertaken.
114.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;	N/A	Not Applicable		Future item. Department not aware of any early works undertaken.
114.c	facilitates achieving requirements of Conditions 108 and 109.	N/A	Not Applicable		Future item. Department not aware of any early works undertaken.
sub 114	The Operator must write to the Department responding to any comments received from the NOEF independent panel on the report. The report, once approved by the Department must be implemented by the nominated timeframes.	N/A	Not Applicable		Future item. Department not aware of any early works undertaken.
115	Within 24 months 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:	N/A	Not Applicable		Future item. Early commencement of trial currently being undertaken by Operator to test suitability of different permanent liner cover systems.
115.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; and	N/A	Not Applicable		Future item. Early commencement of trial currently being undertaken by Operator to test suitability of different permanent liner cover systems.
115.b	include implementation of trials on rehabilitated stages of the NOEF	N/A	Not Applicable		Future item. Early commencement of trial currently being undertaken by Operator to test suitability of different permanent liner cover systems.



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2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
sub 115	<p>All relevant performance parameters must be monitored, including but not limited to:</p> <ul style="list-style-type: none"> <li>slope stability during extreme events</li> <li>cover performance as a result of heat effects</li> <li>tolerance of the geosynthetic liner to expected differential settlement</li> <li>veracity of cover longevity predictions</li> <li>likely long-term maintenance requirements.</li> </ul> <p>Reporting of trial results and monitoring outcomes shall be provided within three years from the plans submission, and 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.</p> <p>The plan, once approved by the Department must be implemented. The relevant outcomes of trials and monitoring must be used to inform the Adaptive Management Plan and closure planning for the mine.</p>	N/A	Not Applicable		Future item. Early commencement of trial currently being undertaken by Operator to test suitability of different permanent liner cover systems.
116	The Operator must submit a strategy to the Department within five years of authorisation of the Overburden Management Project that details the long-term disposal management of tailings within/ into the mine pit void, submerged under a suitable depth of pit water. The plan must:	N/A	Not Applicable		Future item.
116.a	include strategies on the tailings reprocessing and assessment of residual chemical contaminants that may likely impact on meeting the requirements of Condition 108; and	N/A	Not Applicable		Future item.
116.b	be reviewed by the relevant independent panel.	N/A	Not Applicable		Future item.
116	<p>The strategy, once approved by the Department must be used to develop a plan, 5 years prior to cessation of mining, for approval by the Department. Any requirement to vary the approved disposal strategy or plan must be:</p> <ul style="list-style-type: none"> <li>a.Applied for in writing to the Minister;</li> <li>b.Based on leading practice and site conditions I context;</li> <li>c.Supported by the relevant independent panel; and</li> <li>d.Notified to the NT EPA in accordance with Condition 107.</li> </ul>	N/A	Not Applicable		Future item.
117	Within 12 months of authorisation of the Overburden Management Project, the Operator must review and synthesise all available and relevant information to submit a revised water monitoring program/ 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. The plan must be able to allow assessment of compliance to Condition 108 and include sufficient detail to inform/develop/update the Adaptive Management Plan. The program/ plan, at a minimum must:	N/A	Not Applicable		Future item.
117.a	quantify loads of lead and zinc entering the McArthur River each year;	N/A	Not Applicable		Future item.
117.b	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 as low as is reasonably practicable;	N/A	Not Applicable		Future item.
117.c	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.	N/A	Not Applicable		Future item.



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2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
sub 117	The revised program/plan must:		-		
sub 117.a	be prepared in consultation with the NT EPA;	N/A	Not Applicable		Future item.
sub 117.b	be prepared in consultation with the relevant independent panel.	N/A	Not Applicable		Future item.
sub 117	The plan, once approved by the Department must be implemented. Any variation and/or updates to the program/ plan (e.g.to maintain the currency of the monitoring network), must be undertaken in consultation with the relevant independent panel.	N/A	Not Applicable		Future item.
sub 117	The results of the program must be reported annually to the Department and audited by the Independent Monitor every three years. The results of the program together with any audits/review findings must be published on the Operator's website.	N/A	Not Applicable		Future item.
118	Within 18 months 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. The results of this program must be integrated with other relevant programs monitoring programs and management plans. The plan, once approved by the Department must be implemented.	N/A	Not Applicable		Future item. Ecotoxicological program has commenced early.
119	Within 18 months of authorisation of the Overburden Management Project, the Operator must submit an aquatic ecosystem monitoring program to the Department for review, that provides improved understanding of aquatic ecosystems in the McArthur River from changing water flows, levels and quality, including available dry season habitat. The program must:	N/A	Not Applicable		Future item.
119.a	assess impacts of the mine on water levels in refuge pools/waterholes, upstream and downstream of the mine, including in the McArthur River diversion channel;	N/A	Not Applicable		Future item.
119.b	assess impacts of the mine on water quality in refuge pools/waterholes in the dry season; and	N/A	Not Applicable		Future item.
119.c	assess impacts of the mine on the health of aquatic biota in the McArthur River using non-lethal sampling methods.	N/A	Not Applicable		Future item.
sub 119	The program must be designed to be integrated with requirements of the Adaptive Management Plan (Condition 131 and Condition 132). The program, once approved by the Department must be implemented.	N/A	Not Applicable		Future item.
120	At all times, the Operator must conduct works consistent with the Northern Territory Aboriginal Sacred Sites Act and valid Aboriginal Areas Protection Authority certificate (AAPA). 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.	4	Full Compliance	Email dated 29Oct2020 with the subject MRM   NOEF and Open Pit.  As part of the CWCharlie amendment for basal foundations. Advised AAPA certificate was requested and provided.  Email from Operator to the Department dated 29Oct2020 stated that the NOEF maximum height complies with the AAPA Certificate C2004/084 and that the open pit dimensions are contained within the authorised subject land specified within AAPA Certificate C2004/082.	
121	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 Minister for Resources, the Operator and the Minister for Tourism and Culture must be undertaken prior to seeking endorsement of the design.	N/A	Not Applicable		MRM4 area is demarcated by fence, signage and 50m buffer zone. Future item.

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2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
122	Within six months of authorisation of the Overburden Management Project, the Operator must provide a report to the Minister, and AAPA or the Minister for Tourism and Culture (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 maybe affected by the Overburden Management Project.	N/A	Not Applicable		Future item. Operator did provide a traditional custodian engagement plan early 2020 consistent with this condition, which the Department forwarded to the Minister providing advice to liaise with the other Ministers.
123	The Operator must develop or revise and submit an existing air quality plan within 12 months of this Authorisation to the Department for review, that monitors sulphur dioxide emissions at an appropriate location between the NOEF and sensitive receptors determined in consultation with NT EPA.	N/A	Not Applicable		Future item. Early submission of the air quality management plan submitted as part of the MMP amendment January 2020.
sub 123	The monitoring plan must include 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. Evidence of consultation with the NT EPA must be provided at the time of the plan submission. The plan, once approved by the Department must be implemented. The results of the plan for each reporting frequency made available on the Operator's website and incorporated/updated/revise, where relevant, with the Adaptive Management Plan. Initial monitoring results to be reported within 6 months of the plan being accepted by the Department.	N/A	Not Applicable		Future item. Early submission of the air quality management plan submitted as part of the MMP amendment January 2020.
124	Within 24 months 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:	N/A	Not Applicable		Future item.
124.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;	N/A	Not Applicable		Future item.
124.b	include demonstrated evidence of consultation with NT EPA, on advice of the Chief Health Officer;	N/A	Not Applicable		Future item.
124.c	detail public reporting of the monitoring results, including at appropriate locations in the Borroloola region; and	N/A	Not Applicable		Future item.
124.d	include provisions for implementation and maintenance of signage at waterways at the MRM site in accordance with the requirements of Condition 68 until the risk of contamination from consumption of this aquatic fauna is negligible.	N/A	Not Applicable		Future item.
125	The plan, once approved by the Department must be implemented Within 24 months of authorisation of the Overburden Management Project, the Operator must submit a plan to the Department for review, that outlines monitoring program for management of Largetooth Sawfish. The plan must:	N/A	Not Applicable		Future item.
125.a	include a sampling strategy for Largetooth Sawfish that is non-lethal;	N/A	Not Applicable		Future item.
125.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; and	N/A	Not Applicable		Future item.
125.c	include trigger levels for investigation and implementation of management measures.	N/A	Not Applicable		Future item.
sub 125	The plan, once approved by the Department must be implemented.	N/A	Not Applicable		Future item.

Authorisation Compliance Workbook - Department

2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
126	Within six months following the establishment of the required panels and groups, the Operator must in consultation with the relevant Independent Panels, Community Reference Group, custodians and traditional owners, develop environmental objectives for a Care and Maintenance Plan, and submit this to the Department for review.	N/A	Not Applicable		Pending independent panel formation.
sub 126	The environmental objectives must be used to develop a Care and Maintenance Plan in consultation with the Department within five years of authorisation of the Overburden Management Project.	N/A	Not Applicable		Future item.
127	The Operator must facilitate an independent third-party assessment of the security for rehabilitation of authorised activities in the approved MMP as defined in Condition 1.1, to the satisfaction of the Department, and every 3 years thereafter if the security has been re-calculated or adjusted. The Operator must commission a qualified person within 3 months of the authorisation of the Overburden Management Project, whose appointment is to be accepted by the Minister. The first assessment of the security should occur within 6 months of acceptance of the qualified person by the Minister.	4	Full Compliance	Email dated 10Jul2020 with the subject McArthur River Mine Security - Independent Third-Party Assessment.  Operator commissioned a third party audit. Evidence was provided in the form of an email between Operator and the Department that the Department accepted the qualified person (company).	
128	For every approved MMP and MMP amendment, the Operator must provide a revised copy of the approved document that removes commercially sensitive information and is suitable for publication on the Department's website, or provide written approval to make the complete documents publicly accessible.	4	Full Compliance	Operator provided January 2019 document and Department has elected not to publish that. Operator has provided January 2020 MMP which is planned be made available once approved by the Minister.	
129	The Operator must assist, as required, the Department to establish and operate a Community Reference Group in accordance with the relevant NT EPA recommendation.	N/A	Not Applicable		Future item. Propose to have CRG next year post MMP approval.
131	Within 18 months of authorisation of the Overburden Management Project, the Operator must submit an Adaptive Management Plan to the Department, which includes the following key elements:	4	Full Compliance	AMP has been submitted early to the Department by Operator in March 2020. IM reviewed compliance of the AMP against the Authorisation requirements and submitted the report to Department and Operator in June 2020.	
131.a	clear, measurable environmental objectives for all significant environmental risks and potential impacts;	4	Full Compliance	Refer to condition 131 evidence.	
131.b	measurable performance indicators to show that objectives are on target to be met;	4	Full Compliance	Refer to condition 131 evidence.	
131.c	pre-determined triggers to warn of potential for performance indicators to be exceeded, as informed by monitoring;	4	Full Compliance	Refer to condition 131 evidence.	
131.d	realistic and achievable contingency interventions to maintain performance indicators if triggers are consistently exceeded;	4	Full Compliance	Refer to condition 131 evidence.	
131.e	clearly defined management measures/actions that are capable of being implemented in a timely way to meet performance indicators and environmental objectives;	4	Full Compliance	Refer to condition 131 evidence.	
131.f	monitoring in accordance with relevant Recommendations in this Report to determine whether management measures are effective and to inform the need for adjustments to management measures or need for alternatives;	4	Full Compliance	Refer to condition 131 evidence.	
131.g	a continual feedback system to inform appropriate actions to be initiated when triggered and environmental objectives are always being met;	4	Full Compliance	Refer to condition 131 evidence.	
131.h	continual development of new management actions as required based on knowledge gained from experience at the site and elsewhere across industry.	4	Full Compliance	Refer to condition 131 evidence.	

Authorisation Compliance Workbook - Department

2019 VoA Condition No.	Condition/Requirement	Score	Compliance Level	Evidence	Comments
sub 131	The AMP must be reviewed by the Independent Monitor or an appropriately qualified, independent third party, and updated with requirements of the Community Reference Group (CRG) (once established under Condition 129), with all review findings and CRG input requirements to be provided to the Department for approval.	N/A	Not Applicable		Future item. Pending establishment of the CRG.
132	Unless agreed otherwise in writing by the Department, the Adaptive Management Plan must:	4	Full Compliance	AMP has been submitted early to the Department by Operator in March 2020. IM reviewed compliance of the AMP against the Authorisation requirements and submitted the report to the Department and Operator in June 2020.	
132.a	clearly set out the required management objectives and performance indicators;	4	Full Compliance	Refer to condition 132 evidence.	
132.b	provide clarity on the triggers for changes to management actions, and responsibility and evidentiary basis for decision-making;	4	Full Compliance	Refer to condition 132 evidence.	
132.c	establish the timeframe for initiation of certain actions if triggers are exceeded, including decisions to discontinue an activity and clarify responsibility and	4	Full Compliance	Refer to condition 132 evidence.	
132.d	establish a process for adjusting triggers that includes the regulator;	4	Full Compliance	Refer to condition 132 evidence.	
132.e	establish transparent monitoring, reporting and review requirements;	4	Full Compliance	Refer to condition 132 evidence.	
132.f	establish processes to achieve transparency and stakeholder engagement in Adaptive Management Plan design and implementation that includes NT EPA, DEE and Community Reference Group; and	4	Full Compliance	Refer to condition 132 evidence.	
132.g	set out the mechanism for periodic review by Independent Monitor, which must not exceed a frequency of every three years.	4	Full Compliance	Refer to condition 132 evidence.	
sub 132	Any amendments to the AMP must be provided to the Department for re-approval.	N/A	Not Applicable		Future item. No amendments have been submitted to the Department.
133	The Operator must provide written notice to the Minister and to the NT EPA (under clause 14A of the Environmental Assessment Administrative Procedures 1984) where trends indicate performance indicators and environmental objectives will not or are unlikely to be met by implementing the Adaptive Management Plan.	N/A	Not Applicable		Future item. Initial AMP issued 31Jan2020. Department has not received any updated AMP reporting trends.



## **Appendix E**

**NT EPA Recommendations Compliance  
Workbook – Department**

NT EPA Recommendations Compliance Workbook - Department

NT EPA Recommendation No.	NT EPA Recommendation	Score	Compliance Level	Evidence	Comments
1	The Proponent shall ensure that the McArthur River Mine Overburden Management Project is implemented in accordance with all environmental commitments and safeguards:	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 106.	<p>Note: "Confirmed condition in Authorisation 0059 dated 15Aug2019 - 106" text in the evidence column is referring to whether the EPA Recommendation was adopted into an Authorisation condition and provides the corresponding condition number. This approach is used throughout the NT EPA Recommendations Compliance Workbook - Department in the evidence column.</p> <p>In January 2020, as required under Section 41 of the MMA, the Operator submitted for assessment an amended Mining Management Plan (MMP) for the OMP works addressing commitments made in the EIS, the NT EPA recommendations and EPBC Act approval conditions. The department completed assessment of the 2020 MMP. Authorisation 0059 issued under section 38 of the MMA on 13Nov2020 approved the 2020 MMP proposing the OMP related activities.</p> <p>The commitments and safeguards made in relation to the OMP by Operator and the NT EPA in their recommendations were first incorporated as conditions where relevant in Authorisation 0059 issued 15Aug2019 and retained in subsequent variations.</p> <p>Future action: Compliance monitoring will be ongoing. Examples include continuation of health of MacArthur River monitoring, specifically bio-uptake of metals in flora and fauna and NOEF monitoring including infra red to determine the heat (west stage with high convective oxidation). To be submitted in EMR annually.</p>
i	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)	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 106. 2020 MMP	In January 2020, as required under Section 41 of the MMA, the Operator submitted for assessment an amended Mining Management Plan (MMP) for the OMP works addressing commitments made in the EIS, the NT EPA recommendations and EPBC Act approval conditions.
ii	recommended in this Assessment Report 86. The Northern Territory Environment Protection Authority considers that all safeguards and mitigation measures outlined in the Environmental Impact Statement are binding commitments made by the Proponent. Where there is an inconsistency between the commitments made by the Proponent and these recommendations, the recommendations will take precedence.	N/A	Not Applicable		<p>No action for the Department.</p> <p>TSF EPROD, CW Charlie basal construction (NT EPA recommended a 0.5m CCL), bridging MMP was approved consistent with NT EPA recommendations before they were officially a requirement/commenced.</p>
2	The Proponent shall provide written notice to the Northern Territory Environment Protection Authority and the responsible Minister 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, in accordance with clause 14A of the Environmental Assessment Administrative Procedures.	N/A	Not Applicable	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 107. Situation has not arisen. Would be considered on a case by case basis.	The 2020 MMP has been assessed by the Department and conforms to the NT EPA recommendation.
3	The Proponent shall ensure that the commitments and safeguards listed in the EIS for the McArthur River Mine Overburden Management Project and recommended in this Assessment Report 86 are implemented in a manner and to the extent that ensures the health of the McArthur River is protected along its whole length at all times from mine related impacts. This is the overarching environmental outcome that is required to be achieved in respect of the Proposal and all future stages of the mine.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 108. Note: The overarching environmental outcome is not specifically stated in the Authorisation however, the Authorisation contains requirements that contribute to achieving the outcome.	<p>Future action: Compliance monitoring will be ongoing. Yearly EMR report informed by expert consultants engaged by Operator. Experts review and assess the data. EMR comments on how Operator intends to action recommendations. Report on WDL requirements. Report on number of exceedances and during the audit period they were predominantly due to non-mine related events. Department reviews previous EMRs to determine if issues have been addressed and if recommendations have been actioned. Department notifies operator via letter of acceptance (or otherwise) of EMR.</p>

NT EPA Recommendations Compliance Workbook - Department

NT EPA Recommendation No.	NT EPA Recommendation	Score	Compliance Level	Evidence	Comments
	To ensure the protection of the McArthur River from mine related impacts, the Proponent shall ensure that the annual loads of lead and zinc discharged to the McArthur River in future years (July to June) do not exceed the loads discharged in 2017-2018, taking into account seasonal variations in rainfall, and subject to future annual load calculations.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 108. EMR section 4.1.3. 2019/20 Mine Derived Analyte Loads Assessment 24Aug2020.	The IM has reviewed the Adaptive Management Plan (AMP) and advised it is appropriate for the current stage of the Project. The Department will oversee implementation by the Operator of the AMP, in accordance with NT EPA Recommendation 28, which allows for management measures and interventions to be adapted if necessary to achieve this overarching environmental outcome. Related to NT EPA Recommendation 27 which refers to a review nine months following approval.  Future action: Condition recognises that the AMP will change over time and provides an approval requirement Compliance monitoring will be ongoing. Operator submitted loads criteria for 2017-2018 on 08May2020 in response to condition 38 of the Authorisation. Subsequent OPR and EMRs report against that value.
	The Proponent shall implement a monitoring program, developed in accordance with Recommendation 13, within six months of authorisation of the Proposal, to the satisfaction of the relevant regulator. The monitoring program shall quantify the annual loads of lead and zinc entering the main channel of the McArthur River and be used to assess whether or not the load limits specified herein have been met. A load summation shall be provided to the Independent Monitor for auditing at three yearly intervals.	N/A	Not Applicable	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 108.  Operator requirement.	Expect in 2022 IM period.  Timeframe for the requirement to prepare a plan for monitoring is stated as 18 months in the Authorisation rather than 6 months as stated in the NT EPA Recommendations.
	The Proponent shall implement an Adaptive Management Plan, to be developed in accordance with Recommendation 28, to allow for management measures and interventions to be adapted if necessary to achieve this overarching environmental outcome.	N/A	Not Applicable	Operator requirement.	The IM has reviewed the Adaptive Management Plan (AMP) version 31Jan2020 and provided comments. AMP is a future requirement after approval of 2020 MMP, which had not occurred in the audit period but subsequently occurred on 13Nov2020.  The Department will oversee implementation by the Operator of the AMP, in accordance with NT EPA Recommendation 28, which allows for management measures and interventions to be adapted if necessary to achieve this overarching environmental outcome. Department reviewed outside of the audit period but substantive review by IM.
4	The Proponent shall implement all stages of the Proposal to meet the NT EPA's overarching environmental outcome provided for in Recommendation 3 to the satisfaction of the relevant regulator. In doing so, the Proponent shall ensure:	N/A	Not Applicable	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 109.	Refer to NT EPA Recommendation 13.  Currently the Operator are to meet existing programs until the Ecotoxicological program is completed and then have SSTVs to meet.  For future action: Compliance monitoring will be ongoing.
4.i	water quality in the McArthur River meets site-specific trigger values determined in accordance with ANZECC (2000) guidelines at appropriate monitoring locations determined in accordance with Recommendation 13	N/A	Not Applicable	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 109.	Due 30Nov2020 (as per WDL-11 requirements)
4.ii	creeks on the mine site show long-term improving trends in water quality within 20 years after cessation of mining.	N/A	Not Applicable		Future item as 20 years after cessation of mining. There is historic data and the Department has the quarterly data that would allow for comparison. Mine closure panel to consider 20 year trend.



NT EPA Recommendations Compliance Workbook - Department

NT EPA Recommendation No.	NT EPA Recommendation	Score	Compliance Level	Evidence	Comments
5	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to calculate contaminant loads and contaminant concentrations entering creeks and the McArthur River using models that have been regularly reviewed and recalibrated.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 110.	<p>The Department and Operator to establish independent panels of experts to meet review commitments, beginning with development of Terms of Reference for consultation with stakeholders.</p> <p>Future action: Compliance monitoring will be ongoing.</p> <p>Also see completion dates against NT EPA recommendations 8, 11 and 23. Models and modelling output to be reviewed every three years by the panels.</p> <p>Focus on lead and zinc surface water and groundwater. 2020 MMP included water balance that was viewed by Department. Surface water calibrated as part of submission (used as input to TARP so undertaken prior to each wet season).</p>
5.i	groundwater flow paths	4	Full Compliance	Hydrogeological investigations.	Advised by the Department that the Operator are approved for additional hydrogeological investigations as part of calculating contaminant loads and contaminant concentrations entering creeks and the McArthur River. The Operator will drill a number of additional bore holes to increase site data and increase certainty around calibration of the model.
5.ii	attenuation of metals from mine-derived wastes.	N/A	Not Applicable	Future requirement with potentially extensive work required.	NT EPA recommended further work around modelling of attenuated studies. EPBC condition has further requirements.
	Updated modelling shall use suitable site-specific data collected in the monitoring program. Models and modelling outputs, and the data collection programs to inform model updates, shall be reviewed at three year intervals by relevant independent panels appointed in accordance with Recommendations 8, 11 and 23, and the outputs used to inform the Adaptive Management Plan, to be developed in accordance with Recommendation 28.	N/A	Not Applicable	Future requirement. Confirmed condition in Authorisation 0059 dated 15Aug2019 - 110.	Independent panel responsibility to review models and modelling outputs, and the data collection programs that informed the model development in future. Once accepted or otherwise, information to be incorporated into AMP.
6	Approvals and decisions in relation to the Proposal shall include conditions that require an audit to be conducted of the Proponent's Quality Assurance / Quality Control procedures and waste rock identification and handling performance every three years and reported to the relevant independent panel and the relevant regulator.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 111.	<p>Future. Triggered by 13Nov2020 Authorisation.</p> <p>For approval of any OMP-related activities, Operator to prepare and submit an amended MMP under Section 41 of the MMA detailing the QA/QC system implemented for waste rock management. The Department to complete assessment of the MMP, ensuring the proposed QA/QC system for waste rock management meets the requirements of Section 36(5) of the MMA and issue an appropriately conditioned Variation of Authorisation under section 38 of the MMA.</p> <p>Engineering Review of Northern Overburden Emplacement Facility (NOEF) Independent Certifying Engineer (ICE) Review of Central West Charlie Design Report dated 20Aug2019 states "The design is consistent with the latest approvals that include the OMP EIS NOEF concepts."</p> <p>For future action: Audit required every three years from issuing of Authorisation 0059 on 13Nov2020. Compliance monitoring will be ongoing.</p>
7	The basal layer of the NOEF foundation shall be constructed with a compacted clay layer of at least 0.5 m thickness to limit seepage to groundwater during construction of the NOEF.	4	Full Compliance	<p>Confirmed condition in Authorisation 0059 dated 15Aug2019 - 22ai and 112.</p> <p>CWC ICE Review Letter 20.08.19 EMR 2019-2020.</p> <p>Basal layer of CW Charlie constructed during the audit period. Construction report reviewed by ICE used to verify 0.5m CCL.</p>	<p>For approval of any OMP-related activities, Operator to prepare and submit an amended Mining Management Plan (MMP) under Section 41 of the MMA that details the construction details of the NOEF. The Department has completed the assessment of the MMP and the proposed NOEF construction and development satisfies regulatory requirements.</p> <p>Conditions included in Authorisation 0059 effective from Authorisation issued on 15Aug2019 specific to the construction of the NOEF. Note: Department advised that relevant conditions have been in all Authorisations since 12Oct2018.</p>

NT EPA Recommendations Compliance Workbook - Department

NT EPA Recommendation No.	NT EPA Recommendation	Score	Compliance Level	Evidence	Comments
8	Approvals and decisions in relation to the proposal will include conditions requiring the Proponent to provide funding to establish and operate a panel of independent experts to:	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 113.  Note: the subparts of this NT EPA recommendation are not stated in the condition but it does state "in accordance with the relevant NT EPA recommendation".	Not active in audit period (triggered 13Nov2020 by the 2020 MMP approval).  Planning for panel establishment underway. Developing a framework for the establishment of the independent expert panels for consultation with relevant government agencies. Terms of Reference to be provided to the Minister for approval by May 2021.  OBS: Improve the Authorisation condition 113 wording of "in accordance with the relevant NT EPA recommendation" by referencing the relevant NT EPA Recommendations, namely NT EPA Recommendations 8,11 and 23.
8.i	review every three years the outcomes of the Proponent's management program for the NOEF, including the stability, surface condition, internal temperature, reactions and seepage quantity and characteristics of the NOEF to ensure the overarching environmental outcome can be met	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 113.	
8.ii	review NOEF runoff and seepage monitoring results, and in particular trends in the contaminant concentrations in groundwater, and loads entering creeks and the McArthur River	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 113.	
8.iii	review the cover trial results, construction quality records, critical controls, stability assessments, cover performance and performance of progressive rehabilitation of the NOEF.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 113.	
	The panel shall provide a report every three years to the relevant regulator and the Independent Monitor and the report made available to the Proponent, government agencies, the Community Reference Group and the public. The panel is to be formed:	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 113.	
8.iv	with an independent chair, appointed by the responsible Minister in consultation with the Minister for Environment and Natural Resources	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 113.	
8.v	on the advice of the Department of Environment and Natural Resources, the Department of Primary Industry and Resources, and the Proponent.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 113.	
	Terms of Reference for the panel shall set out the terms for roles and responsibilities, membership, timeframe for commencement and scope, reporting obligations and transparency and accountability. The Terms of Reference shall be finalised by the responsible Minister, in consultation with the Minister for Environment and Natural Resources acting on advice from the NT EPA, within three months of authorisation of the Proposal.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 113.	
	The structure of the panel and its Terms of Reference shall be reviewed by the Responsible Minister, in consultation with the Minister for Environment and Natural Resources every six years from the date the Terms of Reference are finalised.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 113.	
9	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to implement a groundwater interception and recovery system for the NOEF. The system is to be designed to:	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 114.  Operator's requirement is a future requirement.	Also Refer to NT EPA Recommendations 3, 4 and 13 above.  Approval 13Nov2020 Operator to undertake investigation to inform the design.  NOEF panel timeline due 13Nov2023.
	control seepage to Barney Creek diversion and the McArthur River over the life of the NOEF to as low as reasonably practicable	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 114.	
	achieve a recovering trend in the Barney Creek diversion and the old McArthur River channel water quality within 20 years of cessation of mining.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 114.	
	The system design and performance shall be reviewed by the independent panel, appointed in accordance with Recommendation 8, and approved by the relevant regulator/s.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 114.	No independent panel established yet for the NOEF. (future requirement).  Note: NT EPA Recommendation suggests within 12 months of OMP approval.

NT EPA Recommendations Compliance Workbook - Department

NT EPA Recommendation No.	NT EPA Recommendation	Score	Compliance Level	Evidence	Comments
10	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to undertake constructability tests for geosynthetic liner cover options, including a geosynthetic liner /compacted clay layer combination, and monitor the options on rehabilitated stages of the NOEF to determine all relevant performance parameters including:	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 115.	Included in 2019 bridging MMP.  Addressed in the 2020 MMP, which appropriately details the proposed trials and works to be implemented to develop a NOEF cover system.  For future action: Reporting of trial results and monitoring outcomes are to be: 1. provided every three years to the relevant independent panel and the Community Reference Group for review, and 2.audited by the IM 3.incorporated into review of Adaptive Management Plan. Compliance monitoring will be ongoing.
	slope stability during extreme events	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 115.	
	cover performance as a result of heat effects	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 115.	
	tolerance of the geosynthetic liner to expected differential settlement	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 115.	
	veracity of cover longevity predictions	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 115.	
	likely long-term maintenance requirements.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 115.	
	Reporting of trial results and monitoring outcomes shall be provided every three years to the relevant independent panel and the Community Reference Group for review, and shall be audited by the Independent Monitor. Outcomes of trials and monitoring shall be used to inform the Adaptive Management Plan, to be developed in accordance with Recommendation 28, and the Closure Plan for the mine.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 115.	
11	Approvals and decisions in relation to the proposal will include conditions requiring the Proponent to provide funding to establish and operate a panel of independent experts to:	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 113.  Note: the subparts of this NT EPA Recommendation aren't stated in the condition but it does state "in accordance with the relevant NT EPA Recommendation".	As for NT EPA Recommendation 8. Planning for independent expert panel establishment underway. Developing a framework for the establishment of the independent expert panels for consultation with relevant government agencies. Terms of Reference to be provided to the Minister for approval by May 2021. ITRB may provide some members for TSF.  OBS: Improve the Authorisation condition 113 wording of "in accordance with the relevant NT EPA recommendation" by referencing the relevant NT EPA Recommendations, namely NT EPA Recommendations 8,11 and 23.
11.i	review every three years the outcomes of the Proponent's management program for the TSF including the berm stability, risk of overtopping, seepage and other aspects of the TSF that could impact on site water quality and the McArthur River, including the risk of catastrophic failure of any component of the TSF, to ensure that the overarching environmental outcome can be met	4	Full Compliance	Refer NT EPA Recommendation 11.	
11.ii	review TSF seepage monitoring results and the appropriateness of the monitoring program.	4	Full Compliance	Refer NT EPA Recommendation 11.	
	The panel shall provide a report every three years to the relevant regulator and the Independent Monitor and is made available to the Proponent, government agencies, the Community Reference Group and the public. The panel shall be formed:	4	Full Compliance	Refer NT EPA Recommendation 11.	
11.iii	With an independent chair, appointed by the responsible Minister in consultation with the Minister for Environment and Natural Resources.	N/A	Not Applicable		

NT EPA Recommendations Compliance Workbook - Department

NT EPA Recommendation No.	NT EPA Recommendation	Score	Compliance Level	Evidence	Comments
11.iv	on the advice of the Department of Environment and Natural Resources, the Department of Primary Industry and Resources, and the Proponent.	N/A	Not Applicable		
	Terms of Reference for the panel shall set out the terms for roles and responsibilities, membership, timeframe for commencement and scope, reporting obligations and transparency and accountability. The Terms of Reference shall be finalised by the responsible Minister, in consultation with the Minister for Environment and Natural Resources acting on advice from the NT EPA, within six months of authorisation of the Proposal.	N/A	Not Applicable		
	The structure of the panel and its Terms of Reference shall be reviewed by the Responsible Minister, in consultation with the Minister for Environment and Natural Resources every six years from the date the Terms of Reference are finalised.	N/A	Not Applicable		
12	As soon as practicable after cessation of mining, tailings and other contaminated earthen materials from the Tailings Storage Facility shall be deposited in the mine pit void using contemporary best-practice placement techniques, then protected with a water cover. Tailings shall preferably be reprocessed before in-pit disposal.	N/A	Not Applicable	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 116.	Future item (not required until cessation of mining). TSF life of mine plan included as condition 1 (L) ii 12 approved within the audit period.
	The intention of these measures is to protect the McArthur River water quality and aquatic ecosystems from surface or groundwater contamination consistent with the NT EPA's overarching environmental outcome in Recommendation 3. Any requirement to vary these measures will need approval from the relevant regulator and notification to the NT EPA in accordance with Recommendation 2. These measures should only be varied on the basis of further information to inform leading practice.	N/A	Not Applicable		Noted.
13	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to conduct a review and synthesis of all water monitoring programs (groundwater and surface water) and implement a revised program that is capable of identifying and quantifying impacts of mining activities and their trends on the environmental values and beneficial uses of the McArthur River to measure performance against the NT EPA's overarching environmental outcome in Recommendation 3. The revised water monitoring program shall:	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 117.	Future requirement. Included in early version of AMP. A revised water monitoring program is included in the 2020 MMP. It is appropriate for the current status of the project. IM required to review. Revised AMP due 13Nov2021.
13.i	quantify loads of lead and zinc entering the McArthur River each year	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 117.	
13.ii	quantify impacts to water quality and trends in groundwater and surface water at appropriate points including upstream and downstream of the mine to determine that objectives and targets are being met, including the effectiveness of source control to reduce loads as low as is reasonably practicable	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 117.	
13.iii	develop appropriate future trigger values for waterways on the mine site and the McArthur River in accordance with the ANZECC 2000 Guidelines. In the interim, the trigger values in the most current WDL shall be used.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 117.	
	The review and revision of the water monitoring program shall be conducted to the satisfaction of the relevant regulator/s and the NT EPA as part of the broader monitoring review provided for in Recommendation 27 and incorporated into the authorised Adaptive Management Plan.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 117.	

NT EPA Recommendations Compliance Workbook - Department

NT EPA Recommendation No.	NT EPA Recommendation	Score	Compliance Level	Evidence	Comments
	The results of the monitoring program are to be reported by the Proponent to the relevant regulator and audited by the Independent Monitor every three years. The monitoring report together with the Independent Monitor's audit report shall be made available to government agencies, the Community Reference Group and publicly on the Proponent's and relevant regulators' websites.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 117.	Note: Authorisation condition 117 only requires publishing on the Operator's website, not making the reports available in any other format or on the Department's website. The condition doesn't fully reflect the NT EPA Recommendation wording. However the Department intends to publish the Operator reporting on their website. Subsequent to the audit period, the AMP Review Report by the IM dated 15May2020 has been uploaded to the Department's website.
14	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to prepare and implement a research and investigation program designed to determine the chronic and acute impacts to biota of mine-derived contaminants using recognised and accepted ecotoxicological testing. The program shall be designed to integrate with the monitoring program to be developed in accordance with Recommendation 15. Results of the program shall be used to inform trigger criteria in the Adaptive Management Plan.	3	Part Compliance (High)	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 118. Future requirement within 18mths of the OMP approval.  Note: There is no mention of the Adaptive Management Plan in the Authorisation condition 118.	Operator has commissioned experts to undertake the required studies to satisfy this requirement (Ecotoxicological program). Mine Lakes Consulting commissioned. At the March 2020 site visit accompanied by the IM, Operator provided updates that demonstrated works completed and works remaining. Works associated with this are covered in the AMP; and the AMP is a condition of Authorisation 0059.  The program will be reviewed over time as part of ongoing oversight of the mine's performance the Department will seek evidence from Operator to ensure the plan developed meets the expectations of relevant regulators.  OFI: Update Authorisation condition 118 to clearly reference " ...the results of the Ecotoxicological program shall be used to inform trigger criteria in the AMP".
	The program shall be prepared and implemented to the satisfaction of the Department of Environment and Natural Resources, and the Australian Government Department of the Environment and Energy.	3	Part Compliance (High)	Confirmed part condition in Authorisation 0059 dated 15Aug2019 - 118.  Unable to find a reference to the Australian Government Department of the Environment and Energy.	OFI : Develop and document a process for including advice on the preparation and implementation of the Ecotoxicological program from other agencies e.g. DEPWS and Commonwealth Department of Agriculture, Water and the Environment.
15	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to implement an aquatic ecosystem monitoring program based on improved understanding of aquatic ecosystems in the McArthur River including flow requirements and available Dry season habitat. The program shall be designed to assess impacts from the mine on:	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 119.	Future requirement.  The Department has completed assessment of the 2020 MMP. Operator has in place a monitoring program that meets the requirements of the NT EPA. The Adaptive Management Plan will further inform the monitoring going forward.  Future action: Monitoring program/s are to be: 1.reported by Operator 2.audited by the IM every three years. The monitoring report and audit report to be made public. Compliance monitoring will be ongoing.  Note: The program will be reviewed over time as part of ongoing oversight of the Operator's performance. The Department will seek evidence from the Operator to ensure the plan developed meets the relevant regulator's expectations. IM's audit report shall be made available to government agencies and the community on DITT website.
15.i	water levels in refuge pools/waterholes, upstream and downstream of the mine, including in the McArthur River diversion channel	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 119.	
15.ii	water quality in refuge pools/waterholes in the Dry season	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 119.	
15.iii	the health of aquatic biota in the McArthur River using non-lethal sampling methods.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 119.	



NT EPA Recommendations Compliance Workbook - Department

NT EPA Recommendation No.	NT EPA Recommendation	Score	Compliance Level	Evidence	Comments
	The monitoring program shall be prepared and implemented to the satisfaction of the Department of Environment and Natural Resources, and the Australian Government Department of the Environment and Energy.	3	Part Compliance (High)	Confirmed part condition in Authorisation 0059 dated 15Aug2019 - 119. Future requirement within 18mths of the OMP approval. Unable to find a reference to the Australian Government Department of the Environment and Energy.	OFI : Develop and document a process for including advice on the preparation and implementation of the aquatic ecosystem monitoring program from other agencies e.g. DEPWS and Commonwealth Department of Agriculture, Water and the Environment.
	The monitoring program shall be designed to integrate with a revised monitoring program provided for in Recommendation 27 and incorporated into the Adaptive Management Plan, to be developed in accordance with Recommendation 28	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 119.	
	The results of the monitoring program are to be reported by the Proponent and audited by the Independent Monitor every three years. The monitoring report together with the Independent Monitor's audit report shall be made available to government agencies and the community on the Proponent's and relevant regulators' websites.	3	Part Compliance (High)	While part of these requirements may be broadly captured under the Adaptive Management Plan auditing condition they are not specifically stated in the Authorisation conditions.	OFI: Decide on which website key documents are made available. It will be more efficient to have a single master copy on a website document with links to it from other websites (e.g. multiple Departments, Agencies or Operator.)
16	Approvals or decisions in relation to the Proposal, shall include conditions that require the Proponent to conduct all works in accordance with a valid Certificate issued in accordance with the Northern Territory Aboriginal Sacred Sites Act.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 120. Condition in Authorisation 0059 dated 15Aug2019 - 5 (broad requirement to meet all legislation).	Authorisation conditioned such that Operator must provide evidence of a valid AAPA certificate, as appropriate for proposed work. There are current APA certificates for current mining footprint but additional certificates will need to be obtained for additional disturbance. NOEF APA certificate was viewed by Minister. Department not aware of any breaches.
17	Prior to any approvals for the Proposal, the Proponent and the responsible Minister shall consult with the Minister for Tourism and Culture on an alternative design of the NOEF that would preserve archaeological site MRM4. Any alternative design of the NOEF must achieve the same environmental outcomes as the currently proposed NOEF, taking into consideration the recommendations in this report.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 121.	Works proposed in the 2020 MMP do not disturb or impact on MRM4. There is no development in or proposed in that area of MRM4. The Department will initiate consultation with the Minister for Arts, Culture and Heritage (also see NT EPA Recommendation 18). Authorisation 0059 to require mining activities to avoid MRM4 whilst consultation occurs with the responsible NT agency DTFHC to finalise an agreed NOEF design.
18	Approvals or decisions in relation to the Proposal, shall include conditions that require the Proponent to demonstrate to the responsible Minister, and the AAPA or the Minister for Tourism and Culture (where relevant), that it has undertaken a thorough process to identify, inform and consult with the appropriate custodians and traditional owners with an interest in lands that would be or may be affected by the Proposal.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 122. Future item. Not triggered until MMP approved after audit period.	Works proposed in the 2020 MMP to extend above the 80m height for the Waste Rock emplacement facilities are subject to Operator obtaining valid AAPA certificates. The Authorisation includes condition/s requiring Operator to demonstrate evidence of consultation going forward. A Stakeholder Engagement Plan was provided to the Minister by Operator in February 2020.
19	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to monitor sulfur dioxide within 1 km downwind of the NOEF, to the satisfaction of the NT EPA and relevant regulator. The objective of this monitoring program should be to identify any increase in sulfur dioxide emissions from the NOEF and any potential air quality risk to human health outside the MRM leases for all stages of the Proposal.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 123. Note: the condition doesn't specify the location within 1km downwind of the NOEF but does require it at an appropriate location between NOEF and sensitive receptors determined in consultation with NT EPA.	Future item to update AQMP triggered within 12 months of Authorisation 15Aug2019 approval. Monitoring was undertaken at Devil's Spring and Borroloola during the audit period. Air quality matters detailed in the 2020 MMP have been assessed as appropriate. Note Operator has already implemented a revised Air Quality Management Plan based on consultant advice in response to historical sulfur dioxide emissions from NOEF. This plan is reviewed and improved upon, where required, as part of what to date has been called an Operational Performance Report (OPR) provided by the proponent each year. (In future, results of monitoring will be required to be reported annually in the Environmental Mining Report, which can be made publicly available.)
	The monitoring program shall be reviewed in accordance with Recommendation 27 and incorporated into the Adaptive Management Plan, to be developed in accordance with Recommendation 28.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 123.	
	The results of the monitoring program are to be reported by the Proponent to the relevant regulator and audited by the Independent Monitor every three years. The monitoring report together with the Independent Monitor's audit report shall be made available to government agencies, the Community Reference Group and publicly on the Proponent's and regulator's websites.	3	Part Compliance (High)	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 123 does require the results to be made available on the Operator's website. It does not require audit by the IM.	OFI: Update future Authorisation to include reference to the results of the air quality monitoring plan to be audited by the IM every three years or seek agreement in writing between the Department and NT EPA to accept an alternative arrangement.

NT EPA Recommendations Compliance Workbook - Department

NT EPA Recommendation No.	NT EPA Recommendation	Score	Compliance Level	Evidence	Comments
20	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to:		-	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 124. Condition in Authorisation 0059 dated 15Aug2019 - 68.	Future item triggered after 2020 MMP approval.
20.i	continue a monitoring program, to the satisfaction of the NT EPA on advice of the Chief Health Officer, to determine if aquatic fauna obtained from any reach of the McArthur River is safe to eat during all stages of the Proposal	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 124.	
20.ii	publicly report the results of monitoring, including at appropriate locations in the region	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 124.	Conditions included in Authorisation 0059 address this NT EPA Recommendation (124c), which require public reporting of the monitoring results, including at appropriate locations in the Boroloola region. The Department advised it will identify an appropriate medium for communicating the monitoring results. This may, for example, be achieved as part of addressing NT EPA Recommendation 25, i.e. publishing via the Department website and in hardcopy at various locations in the Boroloola community.  OBS: Although not required during the audit period, it may be of benefit to make publicly available the results of monitoring in relation to aquatic fauna obtained from the McArthur River, including at appropriate locations in the region, to communicate river health.
20.iii	maintain signage at waterways within the MRM site advising that fishing and harvesting of aquatic food species is prohibited, until the waterways recover and the risk of contamination from consumption of this aquatic fauna is negligible.	3	Part Compliance (High)	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 124 and refers to condition 68.  Note the wording of conditions 124 and 68 are not as specific related to advising that "fishing and harvesting of aquatic food species is prohibited", which is required in NT EPA Recommendation 20.iii.  Attachment 1 Letter to DME regarding warning signage (dated: 04Feb2015) to Chief Health Officer from Operator advising of the agreed wording to be used on signage. Warning Signage Register 2019 provided by Operator showed photos of the "no unauthorised entry" signage.	OFI: Obtain agreement with NT Department of Health that the alternative wording used on waterway signage ('prohibited access') at mining lease boundary is acceptable.
21	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to develop a non-lethal monitoring program for sawfish and from the results, define a specific (measurable and time-bound) threshold for a significant decline in sawfish movement (based on data) that would trigger investigation and implementation of management measures. This threshold is to be developed to the satisfaction of the Australian Government Department of the Environment and Energy and the Department of Environment and Natural Resources, within 12 months of authorisation of the Proposal.	3	Part Compliance (High)	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 119 requires non-lethal monitoring, setting performance indicators to abate a significant decline and trigger levels for investigation and implementation of management measures, within 24 months of the approval of the OMP.  Confirmed condition in Authorisation 0059 dated 15Aug2019 - 125.  Note: Authorisation 0059 dated 15Aug2019 - condition 125 does not meet the requirement for development of the submission within 12 months of authorisation of the Proposal. It also does not require the satisfaction of the Australian Government Department of the Environment and Energy. Condition 125 only required the submission of the plan within 24 months of the authorisation.	Operator has actioned earlier than required by implementing sawfish transponder monitoring.  No OFI has been prepared as the Department advised that no agreement is required by NT EPA as it is the role of the Department to ensure actions are not contrary to the NT EPA Recommendations and that their intent has been complied with.
22	Approvals and decisions in relation to the Proposal shall contain conditions that require environmental objectives to be established and achieved in case the mine site enters into care and maintenance. Environmental objectives should be reviewed by the relevant independent panel/s and approved by the relevant regulator/s after consultation with the Community Reference Group, custodians and traditional owners.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 126.	Future requirement. Triggered by 2020 MMP approval.  The Department is working to establish the Community Reference Group (NT EPA Recommendation 26), to facilitate consultation with custodians and traditional owners to inform the development of the care and maintenance plan and independent panel (NT EPA Recommendation 23). Consultation with the Community Reference Group, traditional custodians needs to be progressed.



NT EPA Recommendations Compliance Workbook - Department

NT EPA Recommendation No.	NT EPA Recommendation	Score	Compliance Level	Evidence	Comments
23	Approvals and decisions in relation to the proposal will include conditions requiring the Proponent to provide funding to establish and operate a panel of independent experts to:	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 113.  Note: the subparts of this NT EPA recommendation aren't stated in the condition but it does state "in accordance with the relevant NT EPA recommendation".	Future requirement. Triggered by 2020 MMP approval. Closure panel.  Planning for independent expert panel establishment underway. Developing a framework for the establishment of the independent expert panels for consultation with relevant government agencies. Terms of Reference to be provided to the Minister for approval by November 2021.  OBS: Improve the Authorisation condition 113 wording of "in accordance with the relevant NT EPA recommendation" by referencing the relevant NT EPA Recommendations, namely NT EPA Recommendations 8,11 and 23.
23.i	review and advise on the development of closure and care and maintenance strategies for mine site domains, and the Proponent's trajectory towards achieving agreed closure objectives	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 113.	
23.ii	review the risk of potential catastrophic failure of the mine levee wall and the McArthur River diversion channel in view of future closure objectives.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 113.	
	The panel shall be formed:		-		
23.iii	with an independent chair, appointed by the responsible Minister in consultation with the Minister for Environment and Natural Resources	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 113.	
23.iv	on the advice of the relevant regulator/s and the Proponent.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 113.	
	The panel shall conduct a rolling 3-5 year review of the mine closure plan to assess the trajectory of closure options for MRM site domains and provide a report to the relevant regulator and the Independent Monitor that is made available to the Proponent, government agencies, the Community Reference Group and the public.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 113.	
	Terms of Reference for the panel shall set out the terms for roles and responsibilities, membership, timeframe for commencement and scope, reporting obligations and transparency and accountability. The Terms of Reference shall be finalised by the responsible Minister, in consultation with the Minister for Environment and Natural Resources acting on advice from the NT EPA, within 12 months of authorisation of the Proposal.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 113.	
	The structure of the panel and its Terms of Reference shall be reviewed by the Responsible Minister, in consultation with the Minister for Environment and Natural Resources every six years from the date the Terms of Reference are finalised.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 113.	
24	An independent third-party assessment of the security that must be provided by the Proponent or Operator for rehabilitation of the Authorised activities at the McArthur River Mine site shall be conducted by a qualified person approved by the responsible Minister. The security amount shall be sufficient to secure the site in a manner that meets the NT EPA's overarching environmental outcome. The independently calculated amount and final amount of the security shall be published on the relevant regulator's website with any variation between the amounts explained.	3	Part Compliance (High)	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 127.  Note the condition does not mention the security needing to be sufficient to secure the site in a manner that meets the NT EPA's overarching environmental outcome and it does not require the publishing on a website of the independently calculated amount and final amount of the security with any variation between the amounts explained.  IM sighted the security held as at 19 February 2021 (outside the audit period) on the Department website. The variation between the independently calculated amount and final amount was not explained. The Department advised the IM that the difference is due to a 10% discount - a Northern Territory Government policy position in effect for a number of years.	Operator nominated a third party assessor which has been accepted by the Department. The third party review was completed as part of the 2020 MMP approval and is required every three years thereafter.  The Department advised the IM that Northern Territory Government has committed to make mine security amounts publicly available. Currently the information published is the security amounts for major mines in the NT, including McArthur River Mine, with the individual mine's security amount held listed on the Department website. No OFI prepared.

NT EPA Recommendations Compliance Workbook - Department

NT EPA Recommendation No.	NT EPA Recommendation	Score	Compliance Level	Evidence	Comments
	The security amount shall be reassessed every three years if an assessment of the security amount by the regulator has been undertaken during that time in accordance with the Authorisation for the McArthur River Mine.	N/A	Not Applicable	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 127.	Future item.
25	The Mining Management Plan (overview and environmental management section) and the Authorisation for the McArthur River Mine Overburden Management Project shall be made available to the public on the relevant regulator's website and in hard copy at an appropriate location in Borroloola (e.g. Borroloola Public Library).	N/A	Not Applicable	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 128 with the inclusion of the option for commercially sensitive information to have been removed.	<p>Future requirement. Triggered by 2020 MMP approval.</p> <p>Department advised the IM they provide a hard copy to Borroloola Library. The Department has in place a process to make public the approved MMP, the Authorisation and any other document supporting document as appropriate.</p> <p>Actioned: Regional Public Library in Borroloola confirmed as appropriate location for physical copy of public documents to made available. Mining Reports webpage established for upload of public documents.</p>
26	Approvals and decisions in relation to the Proposal shall include conditions that require a Community Reference Group to be established that has the following roles:	4	Full Compliance	<p>Confirmed condition in Authorisation 0059 dated 15Aug2019 - 129.</p> <p>Note: the subparts of this NT EPA recommendation aren't stated in the condition but it does state "in accordance with the relevant NT EPA recommendation".</p>	<p>Future requirement. Triggered by 2020 MMP approval.</p> <p>Planning for panel establishment underway. Draft Terms of Reference being developed. A proposed framework for the establishment of the CRG is to be presented to the Minister for consideration. Terms of Reference to be provided to the Minister for approval by November 2021. Opportunity for stakeholders to present nominations for Minister approval (members and chairperson).</p> <p>OBS: Improve the Authorisation condition 129 wording of "in accordance with the relevant NT EPA recommendation" by referencing the relevant NT EPA recommendation, namely NT EPA Recommendation 26.</p>
26.i	communicate the mine's performance to the local and broader NT community	4	Full Compliance	Refer NT EPA Recommendation 26.	
26.ii	advise on the most appropriate method for the Proponent to report information that is required to be made publicly available	4	Full Compliance	Refer NT EPA Recommendation 26.	
26.iii	provide a structured forum for review and discussion in setting environmental objectives for adaptive management, operation, care and maintenance, mine closure and the evaluation and costing of mine closure options	4	Full Compliance	Refer NT EPA Recommendation 26.	
26.iv	provide a forum for discussing economic and social post-mining impacts	4	Full Compliance	Refer NT EPA Recommendation 26.	
26.v	translate technical information into communication that is readily understood by the community, clear statements of outcomes to be achieved and progress in achieving them for both operational and closure matters.	4	Full Compliance	Refer NT EPA Recommendation 26.	
	The Group shall be chaired by an independent person appointed by government, who is held in high regard in civic life and has expertise in taking the community interests into account and experience in the position of chair.	4	Full Compliance	Refer NT EPA Recommendation 26.	
	The Group shall comprise members who represent the local community and broader Northern Territory community, as well as key stakeholders, particularly custodians and Traditional Owners.	4	Full Compliance	Refer NT EPA Recommendation 26.	
	A Terms of Reference for the Group shall be developed to the satisfaction of the NT EPA and agreed by the relevant regulator/s and the Department of the Chief Minister. Details regarding the establishment of the Community Reference Group, including roles and responsibilities, membership, timeframe for commencement and scope, reporting obligations and accountability should be decided within 12 months of all approvals being received for the Proposal.	4	Full Compliance	Refer NT EPA Recommendation 26.	

NT EPA Recommendations Compliance Workbook - Department

NT EPA Recommendation No.	NT EPA Recommendation	Score	Compliance Level	Evidence	Comments
	The structure of the Group and its Terms of Reference shall be reviewed every six years from the date the Terms of Reference are finalised.	4	Full Compliance	Refer NT EPA Recommendation 26.	
27	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to conduct a complete review and synthesis of all monitoring programs that assess impacts of mining activities on the environmental values and beneficial uses of the McArthur River, in accordance with the NT EPA's overarching environmental outcome in Recommendation 3. The revised monitoring program shall be reviewed by the independent panel/s and Independent Monitor within nine months of authorisation of the Proposal, and then approved by the relevant regulator/s.	3	Part Compliance (High)	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 130. (2020 condition 34)  The Authorisation 0059 dated 15Aug2019 - condition 130 does not meet the requirement for the review of the revised monitoring program by the Independent Panel/s and IM within 9 months of authorisation of the Proposal. Condition 130 requires the synthesis of all monitoring programs within 18 months of the authorisation.	Future requirement, within 18 months of the OMP approval.  Operator has provided a revised monitoring plan/s for surface water, groundwater, air quality and sediment as part of the 2020 MMP for assessment under the MMA. The IM has conducted a review of the overarching Adaptive Management Plan in June 2020.  Dust, water (surface water, groundwater and fluvial sediment), air quality, vegetation, terrestrial fauna, aquatic fauna, heritage and sacred sites management plans to be revised.  For Future action: The revised monitoring program shall be reviewed by the independent panel/s and IM by May 2022.  No OFI has been prepared as the Department advised that no agreement is required by NT EPA as it is the role of the Department to ensure actions are not contrary to the NT EPA Recommendations and that their intent has been complied with.
28	Approvals and decisions in relation to the Proposal shall include conditions that require the Proponent to prepare an Adaptive Management Plan that includes the following key elements:	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 131.	Future requirement. Triggered by 2020 MMP approval.  Review of the AMP complete and IM report provided to the Department 15May2020.  IM AMP report has been made available to the public on the Department website (after the audit period).  For Future action: Compliance monitoring will be ongoing. The AMP is a living document. AMP and the IM report will be provided to the Community Reference Group as part of its 1st inaugural meeting agenda papers.
28.i	clear, measurable environmental objectives for all significant environmental risks and potential impacts	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 131.	
28.ii	measurable performance indicators to show that objectives are on target to be met	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 131.	
28.iii	pre-determined triggers to warn of potential for performance indicators to be exceeded, as informed by monitoring	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 131.	
28.iv	pre-determined, realistic and achievable contingency interventions to maintain performance indicators if triggers are consistently exceeded	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 131.	
28.v	clearly defined management measures/actions that are capable of being implemented in a timely way to meet performance indicators and environmental objectives	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 131.	
28.vi	monitoring in accordance with relevant Recommendations in this Report to determine whether management measures are effective and to inform the need for adjustments to management measures or need for alternatives	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 131.	OBS: Reword part of condition 131 of the Authorisation to "Recommendations in the NT EPA Assessment Report 86" rather than "Recommendations in this Report" for clarity.
28.vii	a continual feedback system to ensure appropriate actions are initiated when triggered and environmental objectives are always being met	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 131.	
28.viii	continual development of new management actions as required based on knowledge gained from experience at the site and elsewhere across industry.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 131.	

NT EPA Recommendations Compliance Workbook - Department

NT EPA Recommendation No.	NT EPA Recommendation	Score	Compliance Level	Evidence	Comments
	All key elements should be auditable. Performance indicators, triggers and actions in the Adaptive Management Plan are aimed at ensuring the specified objectives are met.	4	Full Compliance	The AMP is required by condition 131 in Authorisation 0059 dated 15Aug2019 and is therefore auditable.	Although the requirement for audibility are not specifically stated in an Authorisation condition the elements required in the AMP are listed in the Authorisation.  AMP Table 1 summarises the key elements and references the section where these are addressed.
	Before approvals or decisions are given or made for the Proposal, the Adaptive Management Plan shall be reviewed by the Independent Monitor or an appropriately qualified, independent third party, and the review findings and plan provided to relevant regulator/s, the NT EPA, the Community Reference Group and be made available to the public.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 131.	Note: Operator prepared the AMP 31Jan2020. IM's AMP review report was completed 15May2020 and submitted to the Department prior to approval or decision on the proposal on 13Nov2020.
29	The Authorisation for the Proposal must provide for approval, implementation and review of the Adaptive Management Plan. To ensure clarity and enforceability, conditions of the Authorisation must:	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 132.	Future requirement. Triggered by 2020 MMP approval.  Conditions included in the Authorisation to provide for approval, implementation and review of the Adaptive Management Plan.  Compliance monitoring will be ongoing
29.i	clearly set out the required management objectives and performance indicators	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 132.	
29.ii	provide clarity on the triggers for changes to management actions, and responsibility and evidentiary basis for decision-making	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 132.	
29.iii	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	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 132.	
29.iv	establish a process for adjusting triggers that includes the regulator	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 132.	
29.v	establish transparent monitoring, reporting and review requirements	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 132.	
29.vi	establish processes to ensure transparency and stakeholder engagement in Adaptive Management Plan design and implementation	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 132.	
29.vii	set out the mechanism for periodic review and approval of amendments to the plan.	4	Full Compliance	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 132.g. set out a mechanism for periodic review by the IM not exceeding a frequency of every three years. Any amendments must be provided to the Department for re-approval.	
	The Adaptive Management Plan and its implementation must be reviewed by the Independent Monitor every three years, with the outcomes of the review made available to the relevant regulator/s, the NT EPA, the Community Reference Group and the public.	N/A	Not Applicable	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 131 - AMP review by IM and updated with requirements of the CRG. All review findings and CRG input requirements to be provided to the Department for approval.  Confirmed condition in Authorisation 0059 dated 15Aug2019 - 132.g. AMP review every three years.  No reference to the NT EPA in this condition sub-part.	There is no reference to the NT EPA in the condition, however, the Department advised they would provide AMP review findings to the NT EPA.  Confirmed condition in Authorisation 0059 dated 15Aug2019 - 132.f. Process to achieve transparency and stakeholder engagement in AMP design and implementation that includes NT EPA, DEE and CRG.  The Department advised the IM that they plan to upload the AMP review outcomes to the Department's website.
30	Where trends indicate that performance indicators and environmental objectives will not or are unlikely to be met by implementing the adaptive management plan, the NT EPA must be notified of any resultant changes to the Proposal required under clause 14A of the Environmental Assessment Administrative Procedures.	N/A	Not Applicable	Confirmed condition in Authorisation 0059 dated 15Aug2019 - 133.	Future requirement.  Conditions included in the Authorisation to reflect triggering of NT EPA Recommendation 30 in the event there is a departure from the OMP.  Note: Condition included in the Authorisation, as a second order line of compliance. The action is a requirement under NT legislation as the Environmental Assessment Act applies.