

# Mining Management Exploration Activities

## Northern Territory of Australia – Mining Management Act 2001

It is recommended that the Mining Management Plan (MMP) is completed in conjunction with the user guide available on the [Northern Territory Government website](#).

### Section 1 – Project Details

<b>Project Name</b> Provide new or existing project name	Northern Project Area
<b>Authorisation Number</b> Insert existing authorisation number, where applicable	0467-03
<b>Operator Name</b> Use ASIC-ABR registered name (if a company), or name of the applicant	Emmerson Resources Ltd
<b>Operator ABN and ACN numbers</b>	53 117 086 745/ 117 086 745
<b>Location and Access Details</b> Include brief description of the location, access details, and distance to nearest town or community	<p>The Northern Project Area (NPA) covers a number of tenements located to the north and north west of the Tennant Creek Township, between 20 and 43km in distance.</p> <p>The NPA is bisected by the Stuart Highway and access is gained from this major road with further access to other areas of the NPA via historic mine roads, existing 4WD and fence line tracks these will be utilised for access and therefore no new tracks will be required.</p>
<b>Target Commodity Details</b> Include target mineral commodities (i.e. gold, copper etc.)	Gold, Copper, Bismuth, battery and base metals.
<b>Mining Activities</b> Summarise the mining activities (exploration) to be the subject of the proposed Authorisation or Variation.  Drilling programs over a maximum of four years are supported and encouraged and can be staged. Please refer to the guidelines for further information.	Planned activities are for the drilling of 10 Exploration drill holes over the Hermitage target. There will be 7 Reverse Circulation (RC) holes and 3 Diamond holes (DDH).

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<b>Proposed Schedule</b> Include start and finish dates of ground disturbing work	Work is planned to commence late June 2023 and completed by December 2023.
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## Mining Interest and Land Ownership

Title Number	Title Holder	Expiry Date	Property Name or Land Holder
EL26594	Giants Reef Exploration	6/07/2020	Phillip Creek Station
EL28776	Giants Reef Exploration	15/11/2019	Phillip Creek Station
EL31832	Giants Reef Exploration	6/07/2020	Phillip Creek Station
EL31835	Giants Reef Exploration	13/09/2019	Phillip Creek Station
EL32213	Giants Reef Exploration	8/03/2026	Phillip Creek Station
ML30177	Santexco	14/04/2024	Phillip Creek Station
ML30870	TC8	9/07/2021	Phillip Creek Station
ML30893	Giants Reef Exploration	9/07/2020	Phillip Creek Station
ML30909	Giants Reef Exploration	2/08/2020	Phillip Creek Station
MLC705	Giants Reef Exploration	31/12/2023	Aboriginal Freehold Land
MLC91	TC8	31/12/2022	Aboriginal Freehold Land
MLC92	TC8	31/12/2022	Aboriginal Freehold Land
MLC93	TC8	31/12/2022	Aboriginal Freehold Land
MLC94	TC8	31/12/2022	Aboriginal Freehold Land
MLC95	TC8	31/12/2022	Aboriginal Freehold Land

Land Access Agreement (LAA) not required for this MMP amendment, as disturbance proposed is on a Mineral Lease.

## Organisational Structure

Position Title	Name
Managing Director	<b>Rob Bills</b>
Exploration Manager	<b>Ana Liza Cuison</b>

## Section 2 – Operator Self-Assessment of the Environmental Risk

### Environmental considerations

ASSESSMENT ASPECT	YES or NO	ACTIONS REQUIRED (if answered YES)	APPENDED INFORMATION (Evidence of consultation with DENR and/or management plan)
<p><b>Step 1:</b> Are there any threatened flora and fauna species or habitats of significance that may occur in the proposed work area?</p>	<p>Yes</p>	<p>An Environmental Desktop Study over the project area was conducted in 2017.</p> <p>Nine threatened fauna species have been identified as being likely to occur within the project area. The likelihood of these species being present in the project area range from low to high. Only the Grey Falcon was identified as having a high likelihood of occurring within the project area, with a NT Vulnerable status. As noted in the Environmental Desktop Study, exploration activities are not expected to impact on the Grey Falcon, as exploration is on a small area compared to the bioregional availability of that habitat type and the species is mobile and can be expected to utilise other habitats.</p> <p>The Brush-tailed Mulgara and/or Bilby have a moderate likelihood of occurring within the project area. As noted in the Environmental Desktop Study, it is also unlikely that these species would be impacted by exploration activities, due to the dispersed nature of the exploration and these species are rare and occur in very low densities.</p> <p>As noted in the Environmental Desktop Study, the six threatened species with a low likelihood of occurring in the project area require no specific risk mitigation measures.</p> <p>Nil threatened flora species were identified in the Environmental Desktop Study.</p>	<p>Appendix 4- Environmental Desktop Study</p>

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ASSESSMENT ASPECT	YES or NO	ACTIONS REQUIRED (if answered YES)	APPENDED INFORMATION <small>(Evidence of consultation with DENR and/or management plan)</small>
<b>Step 2:</b> Are there any known declared weeds within the proposed work area?	Yes	<p>Twelve species of weeds were identified through desktop assessment as potentially occurring within Emmerson's Tennant Creek project area. None of these weeds are classified Weed of National Significance (WONS).</p> <p>All employees and contractors will be required to familiarise with the weed management plan during a site induction and implement practical measures on site to prevent and manage weeds.</p> <p>Emmerson will implement the weed management measures, as listed in section 5.2 of Appendix 4.</p>	Appendix 4- Environmental Desktop Study
<b>Step 3:</b> Will you be using water from bores or other sources for the operation?	Yes.	<p>Water will be sourced from an old exploration Bore.</p> <p>The project area is within the Daly Roper Beetaloo Water Control District. There is currently an exemption for this district if water extraction is under 5ML/year. Water extraction will be less than 5ML/ year on this project. Communication attached.</p>	Water Resources Communication within Appendix 1

### Environmental assessment and cultural considerations

ASSESSMENT ASPECT	YES or NO	MANAGEMENT REQUIREMENTS
<b>Step 4:</b> Is your project likely to have a significant impact on the environment?	NO	Small exploration project, with no new track tracks.

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ASSESSMENT ASPECT	YES or NO	MANAGEMENT REQUIREMENTS
<p><b>Step 5:</b> Are there Aboriginal sacred sites in the Project area?</p>	Yes	<p>An Authority Certificate was obtained by the AAPA in March 2021. Copy attached in Appendix 2. There are sacred sites and restricted works areas within the project area. However, works will not occur within the restricted works areas or sacred sites.</p> <p>In addition to the AAPA Authority Certificate, Emmerson obtains CLC Sacred Site Clearance Certificates before disturbance exploration commences. Current certificate attached at Appendix 3. The CLC will obtain a copy of the new proposed works and will issue a clearance before the new proposed works commence.</p> <p>If any suspected sites are found, works in the area will cease and the AAPA and CLC will be notified.</p>
<p><b>Step 6:</b> Are there archaeological and heritage sites in the Project area?</p>	No	<p>A search of the Heritage Register was conducted in May 2023. Nil results for were found. Details located in Appendix 9.</p>

## Section 3 – Amendments

Section	Amendment
<b>General</b>	MMP transferred to updated template.
<b>Section 1 – Project Details</b>	Proposed scheduled updated.
<b>Section 2 – Operator Self-Assessment of the Environmental Risk</b>	Desktop study information updated. AAPA and CLC Clearance Certificate information updated. Heritage results added.
<b>Section 4 – Activities Proposed</b>	New proposed activities inserted.
<b>Appendix 1</b>	Water Resources communication added
<b>Appendix 2</b>	AAPA Appendix provided
<b>Appendix 3</b>	CLC Appendix provided
<b>Appendix 5</b>	Security Calculation updated
<b>Appendix 6</b>	Proposed works map provided
<b>Appendix 7</b>	Digital files provided
<b>Appendix 8</b>	Disturbance Tracking Spreadsheet updated
<b>Appendix 9</b>	Heritage Register results provided

## Section 4 – Activities Proposed for this MMP only

Mining Interests (i.e. titles)	ML30177
Number and type of proposed exploration drill holes	<p>7 RC holes 3 Diamond holes</p> <p>Emmerson requests that previously approved holes from 2021 approval be used as credits for these holes. Hole credit calculations in Appendix 8. Completed security calculation attached at Appendix 5, however nil additional security should be required.</p>
Maximum depth of proposed holes (m)	280m
Number and size of drill pads to be cleared (Length: m x Width: m)	10 pads at 20m X 30m
Total area of drill pads to be cleared (ha)	0.6 Ha
Sumps	9 Sumps within drill pad area HMP5 and HMP10 will share a sump
Number of proposed water bores	Nil
Is drilling likely to encounter groundwater in multiple or confined aquifers? (Y, N, unsure) If answering yes, please provide the number of exploration holes where this is likely to occur	Unsure – refer to Appendix 1 'Hydrology' information regarding ground water.
Number of costeans	Nil
Volume to backfill costeans (Length: m x Width: m x Depth: m)	Nil
Number of bulk sample pits	Nil
Volume to backfill bulk sample pits (Length: m x Width: m x Depth: m)	Nil

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Mining Interests (i.e. titles)	ML30177
Bulk sample pits approved under <i>Mineral Titles Act?</i> (Y or N). If Yes provide approval	N/A
Line/track clearing: (length m x width m)	Nil- existing tracks and sparse vegetation.
Area of proposed line/track clearing (ha)	Nil
Camp area to be cleared (ha)	Nil
Camp Infrastructure (i.e. demountable, tents) Please provide a complete list with measurements as required in the security calculation	Nil
Other	Nil
Total proposed area of disturbance (ha)	0.6 Ha

## Section 5 – Previous Disturbance (for existing Authorisations only)

The 'Disturbance Tracking' is attached at Appendix 8.



## Section 6 – Environmental Management

By checking these shaded boxes, you are agreeing to implement the following minimum environmental management standards on the project area. Where boxes have been left unchecked, justification is required.

6.1	✓	Blade-up approach for clearing will be used (i.e. no windrows, leave root stock and topsoil)
6.2	✓	Significant vegetation will be avoided during clearing (i.e. large trees, specimens providing habitat or food sources, riparian vegetation, and threatened species)
6.3	✓	Vegetation clearing during, and immediately after rainfall events, will be avoided
6.4	✓	Vegetation clearing will be kept to the minimum required to safely traverse vehicles and drill rigs along tracks and drill pads
6.5	✓	Where blade-up techniques cannot be employed, topsoil and vegetation will be stockpiled appropriately for rehabilitation purposes
6.6	✓	All employees and contractors will be trained and inducted in relation to the management of environmental risks in the work area, including weeds, waterways, threatened species, soil erosion, sacred sites and heritage areas
6.7	✓	Sumps will be lined or tanks of appropriate size to contain water, sediment and drilling fluids encountered during drilling, will be used
6.8	✓	Sumps, drill holes, and fuel stores will be located away from environmentally significant areas and water courses
6.9	✓	Excavations (sumps, costeans and pits) will be appropriately ramped to allow fauna egress
6.10	✓	Drill holes will be securely capped immediately after drilling
6.11	✓	Vehicle hygiene measures will be employed to prevent the introduction and spread of invasive species and pathogens when mobilising vehicles and equipment from one location to another
6.12	✓	Hydrocarbon spills will be minimised using liners and drip trays under machinery, and appropriately sized spill-kits available in the event of a spill
6.13	✓	Hazardous substances (including hydrocarbons) will be stored and handled in accordance with relevant Australian Standards
6.14	✓	Hydrocarbons will be stored in lined and bunded areas
6.15	✓	Waste will be stored securely while on-site to minimise windblown rubbish and access by feral animals
6.16	✓	Waste will be removed off-site and disposed of at an appropriate waste management facility
6.17	✓	All environmental incidents will be reported to the Department in accordance with Section 29 of the <i>Mining Management Act</i> .
6.18	✓	Acid and Metalliferous Drainage (AMD) and Potentially Acid Forming (PAF) material derived from drilling cuts will be managed to avoid AMD and PAF related issues on site.

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6.19	✓	Radioactive/NORM drill cuttings will be managed to avoid radiation related issues on site.
6.20	✓	Dust management will be implemented on site.

Justification and alternative management measures:

## Section 7 – Rehabilitation and Closure

By checking these shaded boxes, you are agreeing to implement the following minimum rehabilitation standards on the project area. Where boxes have been left unchecked, justification is required.

A refund of security related to completed rehabilitation on site requires the submission of a rehabilitation report including photographs, an updated security calculation and updated disturbance tracking spreadsheet to the Department.

7.1	✓	Drill holes will be plugged below ground level at a minimum depth of 0.4 metres and soil mounded to prevent subsidence, within 6 months of completion of drilling.
7.2	✓	Drill holes encountering multiple or confined aquifers will be grouted with concrete.
7.3	✓	Drill samples/spoil will be returned down drill holes, buried in sumps, or removed from site.
7.4	✓	All drill hole and access markers including flagging tape, wooden markers and star pickets will be removed from site.
7.5	✓	Cut and fill drill pads will be re-contoured to be consistent with the surrounding terrain.
7.6	✓	Drill pads and compacted areas along the contour (on sloping ground) will be ripped/scarified of and tracks will be cross-ripped (zig-zag).
7.7	✓	Tracks will be rehabilitated, including pushing in all windrows, unless otherwise agreed in writing by the land holder or appropriate third party.
7.8	✓	Appropriate erosion and sediment controls will be installed where erosion is evident or likely to occur.
7.10	✓	Access through watercourses will be removed and banks restored.
7.11	✓	All previously disturbed areas will be stable, with no evidence of active soil erosion.
7.12	✓	All excavations will be backfilled within 6 months of their completion.
7.13	✓	All water bores will be decommissioned unless otherwise agreed in writing by the land holder or appropriate third party.
7.14	✓	All rubbish and infrastructure will be removed from site.
7.15	✓	Topsoil will be replaced and vegetation re-established.
7.16	✓	Contaminated soils (e.g. hydrocarbon or hazardous chemicals) will be rehabilitated or removed from site.
7.17	✓	Monitoring will be undertaken following the wet season or a significant rainfall event.

Justification and alternative management measures:

## Section 8 – Required Attachments

8.1	<b>N/A</b>	Initial Application for Authorisation or variation of Authorisation (only if details on the form have subsequently changed).
8.2	<b>N/A</b>	Nomination of Operator Form, where required
8.3	✓	Security Calculation Spreadsheet
8.4	<b>N/A</b>	Evidence of Land Access Agreement if operating on an Exploration Licence (EL) on Pastoral Lease (e.g. two-ways exchange of email)
8.5	✓	Disturbance tracking spreadsheet (for existing Authorisations)
8.6	✓	Spreadsheet with coordinates of proposed drill holes or polygons of target areas
8.7	✓	KML/shape files/track logs of proposed tracks, camp sites and proposed drill holes or polygons of target areas
8.8	✓	Map(s) of the work area(s) showing: <ol style="list-style-type: none"> <li>1. title boundaries and title numbers</li> <li>2. current and proposed drill holes, or polygons of target areas</li> <li>3. current and proposed tracks</li> <li>4. rehabilitated areas</li> <li>5. camp sites</li> <li>6. heritage sites or significant environmental areas</li> <li>7. environmental constraints</li> </ol>
8.10	<b>N/A</b>	Radiation Management Plan (if applicable)
8.12	✓	Document(s) being appended in relation to Section 2 (if any): <ul style="list-style-type: none"> <li>- Appendix 1- Hydrology</li> <li>- Appendix 2- AAPA</li> <li>- Appendix 3- CLC Sacred Site Clearance Certificate</li> <li>- Appendix 4- Environmental Desktop Study</li> </ul>

# Mining Management Exploration Activities

Hermitage - Plan map showing 2023 proposed holes

