

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

Project Name Provide new or existing project name	Mount Peake Project
Authorisation Number Insert existing authorisation number, where applicable	0908-01
Operator Name Use ASIC-ABR registered name (if a company), or name of the applicant	Enigma Mining Limited (a wholly owned subsidiary of TNG Ltd).
Operator ABN and ACN numbers	ABN: 64 009 225 558 ACN: 009 225 558
Location and Access Details Include brief description of the location, access details, and distance to nearest town or community	Centred approximately 220 kilometres north northwest of Alice Springs via the Stuart Highway, and 63 kilometres west of Barrow Creek. Turn off is approximately 3 kilometres north of the turn off into Stirling Station on the Stuart Highway and then along well-maintained station tracks into the project area.
Target Commodity Details Include target mineral commodities	Vanadium, titanium, iron.
Mining Activities 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.	10 shallow piezometers to be drilled within EL31389. All holes initially drilled 1 inch internal diameter. This will be situated beside existing groundwater monitoring bores. 2 deeper (15m depth) piezometer holes will also be installed. All holes to have cemented collars as per Water Resource Dept regulations. Temporary soil observation pits (1.2 m wide 3m deep) to allow soil profile characterisation. All works performed on existing pads with no additional disturbance.

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Proposed Schedule Include start and finish dates of ground disturbing work	September to November 2022.
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Mining Interest and Land Ownership

List the mining interests (titles), the title holder name/s, the title expiry date and the Property name/Land holder (e.g. pastoralist or Aboriginal land trust) for each title.

Title Number	Title Holder	Expiry Date	Underlying Property Name or Land Holder
EL27069	Enigma Mining Limited	12/08/23	NT Portion 655, PPL1103 "Stirling Station" – Stirling Station Pty Ltd. Matthew McCarthy. NT Portion 362, PPL1057 "Anningie Station" – Davmax Pty Ltd. Steven Fogarty.
EL27070	Enigma Mining Limited	Surrendered 29/07/21*	NT Portion 655, PPL1103 "Stirling Station" – Stirling Station Pty Ltd. Matthew McCarthy.
EL27941	Enigma Mining Limited	19/10/22	NT Portion 655, PPL1103 "Stirling Station" – Stirling Station Pty Ltd. Matthew McCarthy.
EL29578	Enigma Mining Limited	7/08/22	NT Portion 655, PPL1103 "Stirling Station" – Stirling Station Pty Ltd. Matthew McCarthy. NT Portion 362, PPL1057 "Anningie Station" – Davmax Pty Ltd. Steven Fogarty.
EL31389	Enigma Mining Limited	20/05/23	NT Portion 655, PPL1103 "Stirling Station" – Stirling Station Pty Ltd. Matthew McCarthy.
EL31850	Enigma Mining Limited	16/10/24	NT Portion 655, PPL1103 "Stirling Station" – Stirling Station Pty Ltd. Matthew McCarthy.

Delete or add rows as required

Please note a Land Access Agreement (LAA) is required for disturbance proposed on Pastoral Properties on Exploration Licence (EL).

* A site visit will be completed during the proposed drilling programme to ensure tracks have rehabbed sufficiently and if so the licence will be removed from the Authorisation.

Organisational Structure

Position Title	Name
Managing Director	Paul Burton

Delete or add rows for various position titles as required

Section 2 – Operator Self-Assessment of the Environmental Risk

The purpose of this self-assessment is to ensure Operators complete a project risk assessment of potential environmental impacts and are aware of other legislative obligations from various Agencies. As a result of this self-assessment, further information may be required in the form of a management plan to enable full assessment of the MMP. If you have any queries please contact a Mining Officer prior to submitting the MMP. Useful resources to assist with this self-assessment are provided in the User Guide.

Environmental considerations

ASSESSMENT ASPECT	YES or NO	ACTIONS REQUIRED (if answered YES)	APPENDED INFORMATION (e.g. evidence of consultation with DEPWS and/or management plan where required).
Step 1: Are there any threatened flora and fauna species or habitats of significance that may occur in the proposed work area?	Y	The Operator must assess the likelihood of threatened species or their habitats occurring at or near the site. If the likelihood is high, then a “Significant Impact Assessment” must be undertaken and appended to this document.	Significant work has been completed in relation to threatened flora and fauna in relation to the Mount Peake Minesite EIS and the Mount Peake Mining Operations MMP. No significant risk to threatened flora and fauna has been identified in relation to the project as a whole and ongoing monitoring is scheduled. No significant impact is likely from the proposed drill programme.
Step 2: Are there any known declared weeds within the proposed work area?	Y	Seek advice from DEPWS – Weed Management Branch to determine if weeds are present on site and ensure management measures are appropriate for the level of activity proposed and attach a Weed Management Plan (if required).	No reported significant weed problems in the drilling area.
Step 3: Will you be using water from bores or other sources for the operation?	N	Water related matters on mineral titles are no longer exempt from the <i>Water Act 1992</i> . Please consult with DEPWS Water Resources and/or familiarise yourself with the <i>Water Act</i> to ensure compliance under this Act when undertaking exploration activities.	No additional water is required for the programme.

Environmental assessment and cultural considerations

ASSESSMENT ASPECT	YES or NO	MANAGEMENT REQUIREMENTS
<p>Step 4: Is your project likely to have a significant impact on the environment?</p>	N	Refer to the NTEPA Environmental Factors and Objectives Guideline.
<p>Step 5: Are there Aboriginal sacred sites in the Project area?</p>	Y	<p>Sacred Sites are protected under the NT <i>Aboriginal Sacred Sites Act 1989</i> and administered by the Aboriginal Areas Protection Authority (AAPA). It is recommended that advice be sought from AAPA in relation to sacred site protection.</p> <p><i>Drill sites have been planned to avoid known Sacred Sites as identified by AAPA and the CLC.</i></p>
<p>Step 6: Are there archaeological and heritage sites in the Project area?</p>	N	<p>Heritage and archaeology sites are protected in the NT. NT Department of Territory Families, Housing and Communities (DTFHC) administers the <i>Heritage Act 2011</i>.</p> <p>Seek advice in relation to protection of heritage and archaeological sites.</p>

Section 3 – Amendments

As per Section 41(3) of the *Mining Management Act*, an MMP reviewed and amended under Section 41(1)(a) is to have amendments made since the previous MMP submission clearly identified.

Section	Amendment
Section 1 – Mining Interest and Land Ownership	ABN/ACN added. Mining Activities updated. Tenement expiry dates updated. Note re EL27070 – visit site during proposed programme to confirm rehab complete. Organizational Structure Updated.
Section 2 – Operator Self-Assessment of Environmental Risk	All sections reviewed and updated as required.
Section 4 – Activities Proposed	Details of water bore drilling programme added.
Section 5 – Previous Disturbance	Table from previous MMP included and Disturbance Tracking spreadsheet filled in.
Section 6 – Environmental Management	Filled out as required.
Section 7 – Rehab and Closure	Filled out as required. Photo added on showing water bore completion and cementing.
Section 8 – Required Attachments	Filled out as required.

Delete or add rows as required

Section 4 – Activities Proposed for this MMP only

Provide relevant EL numbers

Mining Interests (i.e. titles)	EL 31389	EL	EL	EL
Number and type of proposed exploration drill holes	12 Peisometers			
Maximum depth of proposed holes (m)	10 at 5 m 2 at 15m			
Number and size of drill pads to be cleared (Length: m x Width: m)	Existing			
Total area of drill pads to be cleared (ha)	1.08ha existing			
Number of proposed water bores	(see above)			
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	N			
Number of costeans	8			
Volume to backfill costeans (Length: m x Width: m x Depth: m)	1.2 x 1.2 x 3			
Number of bulk sample pits	NA			
Volume to backfill bulk sample pits (Length: m x Width: m x Depth: m)	NA			
Bulk sample pits approved under <i>Mineral Titles Act</i> ? (Y or N). If Yes provide approval	NA			
Line/track clearing: (length m x width m)	All holes adjacent to existing station tracks, no extra track clearing required,			

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Mining Interests (i.e. titles)	EL 31389	EL	EL	EL
Area of proposed line/track clearing (ha)	NA			
Camp area to be cleared (ha)	Existing – no further clearing Middle Well 30x30m Browns Yard 40x40m Open ground locations are chosen for camp sites, therefore minimal clearing is			
Camp Infrastructure (i.e. demountable, tents) Please provide a complete list with measurements as required in the security calculation	Existing – no further clearing 2 camp sites. Middle Well (TNG staff, contractors). Browns Yards (Drilling team). Middle Well 3x tent/swag 2x marquee (cooking/shelter) Up to 40m ² . Browns Yard 4x tent/swag 3x marquee (cooking/shelter) Up to 55m ² .			
Other				
Total proposed area of disturbance (ha)	1.33ha (Existing from main drilling)			

Staging approach based on disturbance can be proposed and will be considered by the Department.

Section 5 – Previous Disturbance (for existing Authorisations only)

The 'Disturbance Tracking' spreadsheet must be completed and attached to the MMP submission to complete this section. The spreadsheet is available on the departmental web page where this template is located.

Mining Interests (i.e. titles)	EL29578	EL31850 (previously ELR29627)	EL27069	EL27070	EL27941	EL31389
Number/type of holes drilled	11	163	13	5	2	17
Maximum depth of holes drilled (m)	405m	183m	275m	314m	192m	84m
Number of holes remediated (i.e. plugged/capped)	11	135*	13	5	2	0*
Number and size of drill pads cleared (Length: m x Width: m)	11	162	4	4	2	12
Total area of drill pads cleared (ha)	0.33	0.54	0.12	0.12	0.06	0.36
Total area of drill pads remediated (ha)	0.33	0.54	0.12	0.12	0.06	0.36
Was groundwater encountered? (Y or N)						
Length of line/track cleared (Length km x Width: m)	8.3km	11.698km	1.5km	3.0km	7.3km	5.6km
Length of line/track remediated (Length: km x Width: m)						
Camp area/s cleared (ha)	0.18	-	-	0.09	-	0.18
Camp area/s remediated (ha)	0.18	-	-	0.09	-	0.18
Total area disturbed (ha)	4.73Ha	6.79Ha	0.4Ha	0.93Ha	1.9Ha	4.85Ha
Total area remediated (ha)	3.09Ha	1.1Ha	0.2Ha	0.5Ha	1Ha	2.05Ha
Previous disturbance yet to be remediated on title (ha) if known	1.64Ha	5.69Ha	0.2Ha	0.43Ha	0.9Ha	2.8Ha

* Holes not fully rehabilitated (ie. cut below ground, plugged and filled in) are used as water bore monitoring holes. These are however capped and remain safe for fauna in the area.

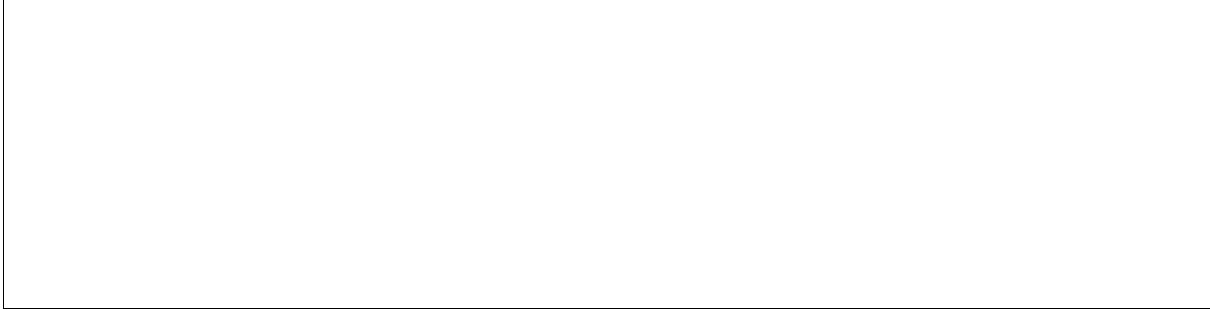
Section 6 – Environmental Management

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	<input checked="" type="checkbox"/>	Blade-up approach for clearing will be used (i.e. no windrows, leave root stock and topsoil)
6.2	<input checked="" type="checkbox"/>	Significant vegetation will be avoided during clearing (i.e. large trees, specimens providing habitat or food sources, riparian vegetation, and threatened species)
6.3	<input checked="" type="checkbox"/>	Vegetation clearing during, and immediately after rainfall events, will be avoided
6.4	<input checked="" type="checkbox"/>	Vegetation clearing will be kept to the minimum required to safely traverse vehicles and drill rigs along tracks and drill pads
6.5	<input checked="" type="checkbox"/>	Where blade-up techniques cannot be employed, topsoil and vegetation will be stockpiled appropriately for rehabilitation purposes
6.6	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	Sumps will be lined or tanks of appropriate size to contain water, sediment and drilling fluids encountered during drilling, will be used
6.8	<input checked="" type="checkbox"/>	Sumps, drill holes, and fuel stores will be located away from environmentally significant areas and water courses
6.9	<input checked="" type="checkbox"/>	Excavations (sumps, costeans and pits) will be appropriately ramped to allow fauna egress
6.10	<input checked="" type="checkbox"/>	Drill holes will be securely capped immediately after drilling
6.11	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	Hazardous substances (including hydrocarbons) will be stored and handled in accordance with relevant Australian Standards
6.14	<input checked="" type="checkbox"/>	Hydrocarbons will be stored in lined and bunded areas
6.15	<input checked="" type="checkbox"/>	Waste will be stored securely while on-site to minimise windblown rubbish and access by feral animals
6.16	<input checked="" type="checkbox"/>	Waste will be removed off-site and disposed of at an appropriate waste management facility
6.17	<input checked="" type="checkbox"/>	All environmental incidents will be reported to the Department in accordance with Section 29 of the <i>Mining Management Act</i> .
6.18	<input checked="" type="checkbox"/>	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.
6.19	<input checked="" type="checkbox"/>	Radioactive/NORM drill cuttings will be managed to avoid radiation related issues on site.
6.20	<input checked="" type="checkbox"/>	Dust management will be implemented on site.

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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	X	Drill samples/spoil will be returned down drill holes, buried in sumps, or removed from site.
7.4	X	All drill hole and access markers including flagging tape, wooden markers and star pickets will be removed from site.
7.5	X	Cut and fill drill pads will be re-contoured to be consistent with the surrounding terrain.
7.6	X	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	NA	Tracks will be rehabilitated, including pushing in all windrows, unless otherwise agreed in writing by the land holder or appropriate third party.
7.8	X	Appropriate erosion and sediment controls will be installed where erosion is evident or likely to occur.
7.10	X	Access through watercourses will be removed and banks restored.
7.11	X	All previously disturbed areas will be stable, with no evidence of active soil erosion.
7.12	X	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	X	All rubbish and infrastructure will be removed from site.
7.15	X	Topsoil will be replaced and vegetation re-established.
7.16	X	Contaminated soils (e.g. hydrocarbon or hazardous chemicals) will be rehabilitated or removed from site.
7.17	X	Monitoring will be undertaken following the wet season or a significant rainfall event.

Justification and alternative management measures:

7.1 All bores will be used for monitoring purposes. Collars will be surrounded by a concrete slab capped as per standard water bore requirements – see Plate 1.

7.2 Holes will be cased and used for ongoing monitoring.

7.13 All holes have been designed as water bores and will be retained for monitoring purposes.

Plate 1



Drillhole 16MPWB013

Section 8 – Required Attachments (Provided)

8.1	X	Initial Application for Authorisation or variation of Authorisation (only if details on the form have subsequently changed).
8.2	NA	Nomination of Operator Form, where required
8.3	X	Security Calculation Spreadsheet
8.4	X	Evidence of Land Access Agreement if operating on an Exploration Licence (EL) on Pastoral Lease (e.g. two-ways exchange of email)
8.5	X	Disturbance tracking spreadsheet (for existing Authorisations)
8.6	X	Spreadsheet with coordinates of proposed drill holes or polygons of target areas
8.7	X	<p>KML/shape files/track logs of proposed tracks, camp sites and proposed drill holes or polygons of target areas</p> <ul style="list-style-type: none"> • 2022_Proposed_Waterbores.shp • 2015_2016_Waterbores.shp • Existing_Tracks.shp (used in 2016 programme. All tracks for current programme are pre-existing). • Campsites.shp (Used during previous drilling and to be used again. Have been remediated. Existing clear locations chosen for minimal impact).
8.8	X	<p>Map(s) of the work area(s) showing:</p> <ol style="list-style-type: none"> 1. title boundaries and title numbers 2. current and proposed drill holes, or polygons of target areas 3. current and proposed tracks 4. rehabilitated areas 5. camp sites 6. heritage sites or significant environmental areas 7. environmental constraints
8.9	NA	Radiation Management Plan (if applicable)
8.10	NA	<p>Document(s) being appended in relation to Section 2 (if any):</p> <p>-</p> <p>-</p>