

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	Ammaroo Phosphate Project
Authorisation Number Insert existing authorisation number, where applicable	0609-4
Operator Name Use ASIC-ABR registered name (if a company), or name of the applicant	Verdant Minerals Pty Ltd
Operator ABN and ACN numbers	ABN 33 122 131 622 ACN 122 131 622
Location and Access Details Include brief description of the location, access details, and distance to nearest town or community	360 km northeast of Alice Springs via the Sandover Highway and Murray Downs Rd. The camp and project are approximately 20km northwest of the Ampilatwatja community.
Target Commodity Details Include target mineral commodities (i.e. gold, copper etc.)	Phosphate rock.
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.	Excavation of phosphate ore for metallurgical testing. Up to 22 tonnes of phosphate rock to be extracted from a costean measuring approximately 6m long x 3m wide x 5m deep on a site immediately adjacent to Murray Downs Road and an existing exploration access track. The location chosen is at the site of drill hole ARC176, drilled in 2011. The area of disturbance will be approximately 25m x 25m, much of which was cleared for the drilling program in 2011.
Proposed Schedule Include start and finish dates of ground disturbing work	July to December 2023.

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
EL 24726	Territory Phosphate	31/03/2024	Ammaroo Station
EL 25184	Territory Phosphate	18/04/2023	Ammaroo Station (renewal in process)
EL 31789	Territory Phosphate	14/08/2024	Ooratipra and Derry Downs
EL 31790	Territory Phosphate	14/08/2024	Elkedra Station
EL 31791	Territory Phosphate	14/07/2025	Ammaroo Station

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

Organisational Structure

Position Title	Name
Managing Director	Chris Tziolis
Chief Geologist	Susan Dippel
Environmental Manager	TBA

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).
<p>Step 1: Are there any threatened flora and fauna species or habitats of significance that may occur in the proposed work area?</p>	YES	<p><i>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.</i></p> <p>Please refer to the appended results from the NR Maps Biodiversity layers. Although there are Threatened and Significant Flora or Fauna recorded in the greater Region, there are none shown within ten kilometres the proposed work area.</p> <p>As the location of the proposed costean was previously cleared for drilling, we believe it is unlikely that Threatened or Significant Flora will be found in the cleared area. Should anything arise we are bound by the attached EPA Assessment Report 87 (attached) and our own Flora & Fauna protection policy (HSEC-POL_010, also attached)</p>	<p>Consulted EPBC Protected Matters Search Tool and appended it to this document.</p> <p>Consulted NR Maps Biodiversity layers – results appended to this document.</p> <p>Refer to NT EPA Assessment Report 87 (attached) and HSEC-POL-010 Flora & Fauna Policy (attached)</p>

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ASSESSMENT ASPECT	YES or NO	ACTIONS REQUIRED (if answered YES)	APPENDED INFORMATION <small>(e.g. evidence of consultation with DEPWS and/or management plan where required).</small>
<p>Step 2: Are there any known declared weeds within the proposed work area?</p>	YES	<p><i>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).</i></p> <p>The greater area is within Weed Management Zones for Athel pine, Bellyache bush, Brazilian pepper, Gamba grass and Mimosa, although no weeds are recorded within 20km of the proposed site (see attached). We are bound by both the EPA Assessment Report 87 and our Weed Management Policy (HSEC-POL-025), both of which are attached.</p>	<p>Within several Weed Management Zones. See attached NR Maps – Weeds. Refer to NT EPA Assessment Report 87 and HSEC-POL-025 Weed Management Policy</p>
<p>Step 3: Will you be using water from bores or other sources for the operation?</p>	YES	<p><i>Water related matters on mineral titles are no longer exempt from the Water Act 1992. Please consult with DEPWS Water Resources and/or familiarise yourself with the Water Act to ensure compliance under this Act when undertaking exploration activities.</i></p> <p>The attached email from the Water Resources Division received in 2022 in relation to an adjacent lease outlines the requirements which we abide by:</p> <ul style="list-style-type: none"> • Water will be obtained from one of the existing Verdant Minerals Ammaroo bores (either the Camp Bore or the North Bore). • No surface water will be taken. • Water usage will be below 5ML per year. 	<p>There are pre-existing pastoral registered bores on the project area and Ammaroo have two bores in the project area which will be used to source water.</p> <p>Refer to NT EPA Assessment Report 87</p> <p>Email from Water Resources dated 20220926.</p>

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>	<p>YES</p>	<p><i>Refer to the NTEPA Environmental Factors and Objectives Guideline.</i></p> <p>This MMP is for the disturbance of a small (up to 90m³) costean and the extraction of approximately 20 tonnes of phosphate ore for further metallurgical testing. The proposed site is immediately adjacent to Murray Downs Road and an existing exploration access track and may require minor vegetation clearing of approximately 25m x 25m at the site of a previously-cleared (2011) drill hole (ARC176).</p> <p>For all mining operations we are bound by the recommendation of NT EPA Assessment Report 87 (attached) before mining can proceed.</p>
<p>Step 5: Are there Aboriginal sacred sites in the Project area?</p>	<p>YES</p>	<p><i>Sacred Sites are protected under the NT Aboriginal Sacred Sites Act 1989 and administered by the Aboriginal Areas Protection Authority (AAPA). It is recommended that advice be sought from AAPA in relation to sacred site protection.</i></p> <p>Verdant have an Exploration Agreement with the Central Land Council (CLC) which details Sacred Site Management. Multiple Sacred Site Clearances and Community Consultation meetings have taken place since 2010 and an application for Sacred Site Clearance for this program has been lodged with the CLC. We have also done AAPA register searches over the area. Copies of the appropriate AAPA and CLC searches and clearance documentation is attached.</p>
<p>Step 6: Are there archaeological and heritage sites in the Project area?</p>	<p>NO</p>	<p><i>Heritage and archaeology sites are protected in the NT. NT Department of Territory Families, Housing and Communities (DTFHC) administers the Heritage Act 2011. Seek advice in relation to protection of heritage and archaeological sites.</i></p> <p>Refer to Step 5 above and HSEC-POL-015 Heritage & Cultural Significant Sites Policy.</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.

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Section	Amendment
	<p>On EL 24726 a small costean (6m x 3m x 5m) will be excavated on the site of drill hole ARC176, drilled in 2011. Clearing will be limited to a pad of approximately 25m x 25m (~0.06m²).</p> <p>Up to 20 tonnes of phosphate ore will be removed from the costean for further metallurgical testing off site.</p>

Delete or add rows as required

Section 4 – Activities Proposed for this MMP only

Mining Interests (i.e. titles)	EL24726	EL	EL	EL
Number and type of proposed exploration drill holes	0			
Maximum depth of proposed holes (m)	0			
Number and size of drill pads to be cleared (Length: m x Width: m)	0			
Total area of drill pads to be cleared (ha)	0			
Number of proposed water bores	0			
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	0			
Number of costeans	1			
Volume to backfill costeans (Length: 6m x Width: 3m x Depth: 5m)	~90m ³			
Number of bulk sample pits	1			
Volume to backfill bulk sample pits (Length: m x Width: m x Depth: m)	0			
Bulk sample pits approved under <i>Mineral Titles Act</i> ? (Y or N). If Yes provide approval	YES Extension of current approval attached			
Line/track clearing: (length m x width m)	0			

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Mining Interests (i.e. titles)	EL24726	EL	EL	EL
Area of proposed line/track clearing (ha)	0			
Camp area to be cleared (ha)	0			
Camp Infrastructure (i.e. demountable, tents) Please provide a complete list with measurements as required in the security calculation	0			
Other: minor surface clearance around costean for safety reasons (25m x 25m)	625m ²			
Total proposed area of disturbance (ha)	0.0625			

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.

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	X	Blade-up approach for clearing will be used (i.e. no windrows, leave root stock and topsoil)
6.2	X	Significant vegetation will be avoided during clearing (i.e. large trees, specimens providing habitat or food sources, riparian vegetation, and threatened species)
6.3	X	Vegetation clearing during, and immediately after rainfall events, will be avoided
6.4	X	Vegetation clearing will be kept to the minimum required to safely traverse vehicles and drill rigs along tracks and drill pads
6.5	X	Where blade-up techniques cannot be employed, topsoil and vegetation will be stockpiled appropriately for rehabilitation purposes
6.6	X	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	X	Sumps will be lined or tanks of appropriate size to contain water, sediment and drilling fluids encountered during drilling, will be used
6.8	X	Sumps, drill holes, and fuel stores will be located away from environmentally significant areas and water courses
6.9	X	Excavations (sumps, costeans and pits) will be appropriately ramped to allow fauna egress
6.10	X	Drill holes will be securely capped immediately after drilling
6.11	X	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	X	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	X	Hazardous substances (including hydrocarbons) will be stored and handled in accordance with relevant Australian Standards
6.14	X	Hydrocarbons will be stored in lined and bunded areas
6.15	X	Waste will be stored securely while on-site to minimise windblown rubbish and access by feral animals
6.16	X	Waste will be removed off-site and disposed of at an appropriate waste management facility
6.17	X	All environmental incidents will be reported to the Department in accordance with Section 29 of the <i>Mining Management Act</i> .
6.18	X	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	X	Radioactive/NORM drill cuttings will be managed to avoid radiation related issues on site.
6.20	X	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	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	Drill holes encountering multiple or confined aquifers will be grouted with concrete.
7.3	<input checked="" type="checkbox"/>	Drill samples/spoil will be returned down drill holes, buried in sumps, or removed from site.
7.4	<input checked="" type="checkbox"/>	All drill hole and access markers including flagging tape, wooden markers and star pickets will be removed from site.
7.5	<input checked="" type="checkbox"/>	Cut and fill drill pads will be re-contoured to be consistent with the surrounding terrain.
7.6	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	Tracks will be rehabilitated, including pushing in all windrows, unless otherwise agreed in writing by the land holder or appropriate third party.
7.8	<input checked="" type="checkbox"/>	Appropriate erosion and sediment controls will be installed where erosion is evident or likely to occur.
7.10	<input checked="" type="checkbox"/>	Access through watercourses will be removed and banks restored.
7.11	<input checked="" type="checkbox"/>	All previously disturbed areas will be stable, with no evidence of active soil erosion.
7.12*	<input type="checkbox"/>	All excavations will be backfilled within 6 months of their completion* (see below for clarification).
7.13	<input checked="" type="checkbox"/>	All water bores will be decommissioned unless otherwise agreed in writing by the land holder or appropriate third party.
7.14	<input checked="" type="checkbox"/>	All rubbish and infrastructure will be removed from site.
7.15*	<input checked="" type="checkbox"/>	Topsoil will be replaced and vegetation re-established* (see below for clarification).
7.16	<input checked="" type="checkbox"/>	Contaminated soils (e.g. hydrocarbon or hazardous chemicals) will be rehabilitated or removed from site.
7.17	<input checked="" type="checkbox"/>	Monitoring will be undertaken following the wet season or a significant rainfall event.

Justification and alternative management measures:

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*7.12. This costean is taken from what will be one of the proposed bulk sample pits that is part of a larger bulk sampling program across the Ammaroo Project site and subject to a separate MMP. The larger program is planned to be undertaken before the end of 2024. As such, the costean will be left open to facilitate access for the larger Pit D. The costean will include an escape ramp and will be fenced off at the conclusion of the current excavation.

*7.15. Full rehabilitation will take place either after the completion of the larger project or, should the larger project not go ahead, after the decision to not proceed has been taken.

Section 8 – Required Attachments

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	KML/shape files/track logs of proposed tracks, camp sites and proposed drill holes or polygons of target areas
8.8	X	Map(s) of the work area(s) showing: <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
8.10	NA	Radiation Management Plan (if applicable)
8.12	X	Document(s) being appended in relation to Section 2 (if any): <ul style="list-style-type: none"> - NT EPA Assessment Report 87 - HSEC-POL-010 Flora & Fauna Policy - HSEC-POL-015 Heritage & Cultural Significant Sites Policy - HSEC-POL-025 Weed Management Policy - Protected Matters – MNES layers - NR Maps – Threatened Fauna - NR Maps – Significant Fauna and Significant Flora - NR Maps – NT Weed Records