

# Mining Management Plan Exploration Activities

Northern Territory of Australia – *Mining Management Act*

## Section 1 – Project Details

<b>Project Name</b> Provide new or existing project name	Singleton Phosphate
<b>Authorisation Number</b> Insert existing authorisation number, where applicable	
<b>Operator Name</b> Use ASIC-ABR registered name (if a company), or name of the applicant	Verdant Minerals Ltd
<b>Location and Access Details</b> Include brief description of the location, access details, and distance to nearest town or community	<p>The Singleton Phosphate Project consists of EL 30613. It is located on the Bonney Well 1:250,000 sheets and Wauchope 1:100,000 map sheets, roughly equidistant between Tennant Creek and Barrow Creek. The centroid of the EL is 16 km northeast of the township of Wycliffe Well on the Stuart Highway.</p> <p>Access is via the Stuart Highway and established tracks on Singleton Station.</p>
<b>Target Commodity Details</b> Include target commodities (i.e. gold, copper etc)	Phosphate
<b>Mining Activities</b> Summarise the mining activities (exploration) to be the subject of the proposed Authorisation or Variation	<p>Up to 14 shallow RC drill holes (4 inch diameter) to a maximum depth of 40m to test for phosphate rock..</p> <p>We will use a 4wd short wheel base rig which needs no new tracks cleared and no drill pads or sumps.</p> <p>Drill cuttings and collars will be rehabilitated on the same day as drilling.</p>
<b>Proposed Schedule</b> Include start and finish dates of ground disturbing work	2-3 days drilling during October 2019

## Mining Interest and Land Ownership

<b>Title Number</b>	<b>Title Holder</b>	<b>Expiry Date</b>	<b>Property Name or Land Holder</b>
EL30613	Territory Phosphate	14/6/2021	Singleton Station

## Organisational Structure

<b>Position Title</b>	<b>Name</b>
Managing Director	<b>Chris Tziolis</b>
Exploration Manager	<b>Nigel Doyle</b>
Chief Geologist	<b>John Dunster</b>
Environmental Manager	<b>Nigel Doyle</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)
<b>Step 1:</b> Are there any threatened flora and fauna species or habitats of significance that may occur in the proposed work area?	Yes	It is likely a threatened species will show up in most reports. Therefore, the Operator must undertake a likelihood analysis, which looks at the likelihood of the species or its habitat occurring at or near the site. If the analysis results in a high likelihood, then a “Significant Impact Assessment” should be undertaken, which may require consultation with the DENR – Flora and Fauna Division. The DENR may recommend a Biodiversity Management Plan – this must be developed and attached to the MMP.	All drilling will be within 50m of existing tracks and fence lines. No new tracks are to be constructed therefore potential habitat destruction is extremely unlikely during the 2 days field work
<b>Step 2:</b> Are there any known declared weeds within the proposed work area?	Yes	Under the <i>Weeds Management Act</i> declared weeds are required to be eliminated or controlled by the owner and occupier of land. Seek advice from DENR – Weeds Management to ensure management measures are appropriate for the level of activity proposed and attach a Weed Management Plan (if required).	We will have a water trailer with us to conduct weed wash downs both before entering and before leaving the property. VRM Weed washdown checklist is attached.
<b>Step 3:</b> Will you be using water from bores or other sources for the operation?	No	<i>Note the Government is proposing to amend the exemption of water licencing under the Water Act for mining activities, including exploration. This section will be updated in light of any changes in the future.</i>	We may request some water from the homestead for weed wash downs only

## 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	Refer to the NTEPA Environmental Factors and Objectives Guideline.
<b>Step 5:</b> Are there Aboriginal sacred sites in the Project area?	No	There are some outside the tenement area, but none within the tenement.
<b>Step 6:</b> Are there archaeological and heritage sites in the Project area?	No	Heritage and archaeology sites are protected in the NT. NT Heritage Branch of the Department of Natural Resources and Environment (DENR) administers the <i>Heritage Act</i> . Seek advice in relation to protection of heritage and archaeological sites.

### 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 clearly identify amendments made.

Section	Amendment

Delete or add rows as required

## Section 4 – Activities Proposed

Mining Interests (i.e. titles)	EL30613
Number and type of proposed drill holes	14
Maximum depth of proposed holes (m)	40m
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
Is drilling likely to encounter groundwater? (Y, N, unsure)	Yes but we are targeting phosphate above the water table
Number of costeans (Length: m x Width: m x Depth: m)	0
Number of bulk sample pits	0
Total bulk sample (tonnes) (Length: m x Width: m x Depth: m)	0
Bulk sample pits approved under <i>Mineral Titles Act</i> ? (Y or N)	n/a
Length of line/track clearing (km: x Width: m)	0
Camp area to be cleared (ha)	0
Camp Infrastructure (i.e. demountable, tents)	0
Previous disturbance yet to be remediated on title (ha) if known	0
Other	
Total area disturbed proposed (ha)	600 square metres

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

Mining Interests (i.e. titles)	EL	EL	EL	EL
Number/type of holes drilled				
Maximum depth of holes drilled (m)				
Number of holes remediated (i.e. plugged/capped)				
Number and size of drill pads cleared (Length: m x Width: m)				
Total area of drill pads cleared (ha)				
Total area of drill pads remediated (ha)				
Was groundwater encountered? (Y or N)				
Length of line/track cleared (Length: km x Width: m)				
Length of line/track remediated (Length: km x Width: m)				
Number of costeans excavated (L: m x W: m x D: m)				
Number of costeans remediated				
Total bulk sample pits excavated (Length: x Width: x Depth: m)				
Total bulk sample pits remediated				
Camp area/s cleared (ha)				
Camp area/s remediated (ha)				
Total area disturbed (ha)				
Total area remediated (ha)				

## Section 6 – Environmental Management

By checking these 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 remediation 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> .

Justification and alternative management measures:



## Section 7 – Remediation and Closure

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

7.1	<input checked="" type="checkbox"/>	Drill holes 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 samples/spoil returned down drill holes, buried in sumps, or removed from site
7.3	<input checked="" type="checkbox"/>	All drill hole and access markers including flagging tape, wooden markers and star pickets will be removed from site
7.4	<input checked="" type="checkbox"/>	Re-contouring of cut and fill drill pads will be consistent with the surrounding terrain
7.5	<input checked="" type="checkbox"/>	Ripping/scarifying of drill pads, and compacted areas along the contour (on sloping ground) and cross-ripping (zig-zag) along tracks
7.6	<input checked="" type="checkbox"/>	Tracks will be remediated, including pushing in all windrows
7.7	<input checked="" type="checkbox"/>	Appropriate erosion and sediment controls will be installed where erosion is evident or likely to occur
7.8	<input checked="" type="checkbox"/>	All tracks will be remediated unless otherwise agreed in writing by the land holder or appropriate third party
7.9	<input checked="" type="checkbox"/>	Access through watercourses will be removed and banks restored
7.10	<input checked="" type="checkbox"/>	No erosion is occurring in disturbed areas, on tracks and in remediated areas
7.11	<input checked="" type="checkbox"/>	All excavations backfilled within 6 months of completion of drilling
7.12	<input checked="" type="checkbox"/>	All water bores decommissioned unless otherwise agreed in writing by the land holder or appropriate third party. The bore must comply with the Minimum Construction Requirements for Water Bores in Australia and may require permits or licenses under the <i>Water Act</i>
7.13	<input checked="" type="checkbox"/>	All rubbish and infrastructure will be removed from site
7.14	<input checked="" type="checkbox"/>	Replacement of topsoil and vegetation
7.15	<input checked="" type="checkbox"/>	Contaminated soils (e.g. hydrocarbon or hazardous chemicals) will be remediated or removed from site
7.16	<input checked="" type="checkbox"/>	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>X</b>	Security Calculation Spreadsheet
8.2	<b>X</b>	Nomination of Operator Form
8.3	<b>X</b>	Spreadsheet with coordinates of proposed drill holes or polygons of target areas
8.4	<b>N/A</b>	Google Earth KML/shape files/track logs of proposed tracks and camp sites
8.5	<b>X</b>	<p>A map of the work area(s) showing:</p> <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. remediated areas</li> <li>5. camp sites</li> <li>6. sacred/heritage sites</li> <li>7. environmental constraints</li> </ol>
8.6	<b>N/A</b>	Remediation Register (for existing Authorisations)
8.7	<b>N/A</b>	Photographs of remediation work
8.8	<b>N/A</b>	Radiation Management Plan (if applicable)