



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

NAME OF APPLICANT: VENA VAX (PTY) LTD

REFERENCE NUMBER: NC 30/5/1/1/2/11047 PR

ENVIRONMENTAL MANAGEMENT PLAN

**SUBMITTED
IN TERMS OF SECTION 39 AND OF REGULATION
52 OF THE MINERAL AND PETROLEUM
RESOURCES DEVELOPMENT ACT, 2002,
(ACT NO. 28 OF 2002) (the Act)**

FARMS: VAN ROOI'S VLEI 443 GJ

**Commodities: Tungsten ore, Tin ore, Molybdenum ore and
Fluorspar**

STANDARD DIRECTIVE

Applicants for prospecting rights or mining permits, are herewith, in terms of the provisions of Section 29 (a) and in terms of section 39 (5) of the Mineral and Petroleum Resources Development Act, directed to submit an Environmental Management Plan strictly in accordance with the subject headings herein, and to compile the content according to all the sub items to the said subject headings referred to in the guideline published on the Departments website, within 60 days of notification by the Regional Manager of the acceptance of such application. This document comprises the standard format provided by the Department in terms of Regulation 52 (2), and the standard environmental management plan which was in use prior to the year 2011, will no longer be accepted.

IDENTIFICATION OF THE APPLICATION IN RESPECT OF WHICH THE ENVIRONMENTAL MANAGEMENT PLAN IS SUBMITTED.

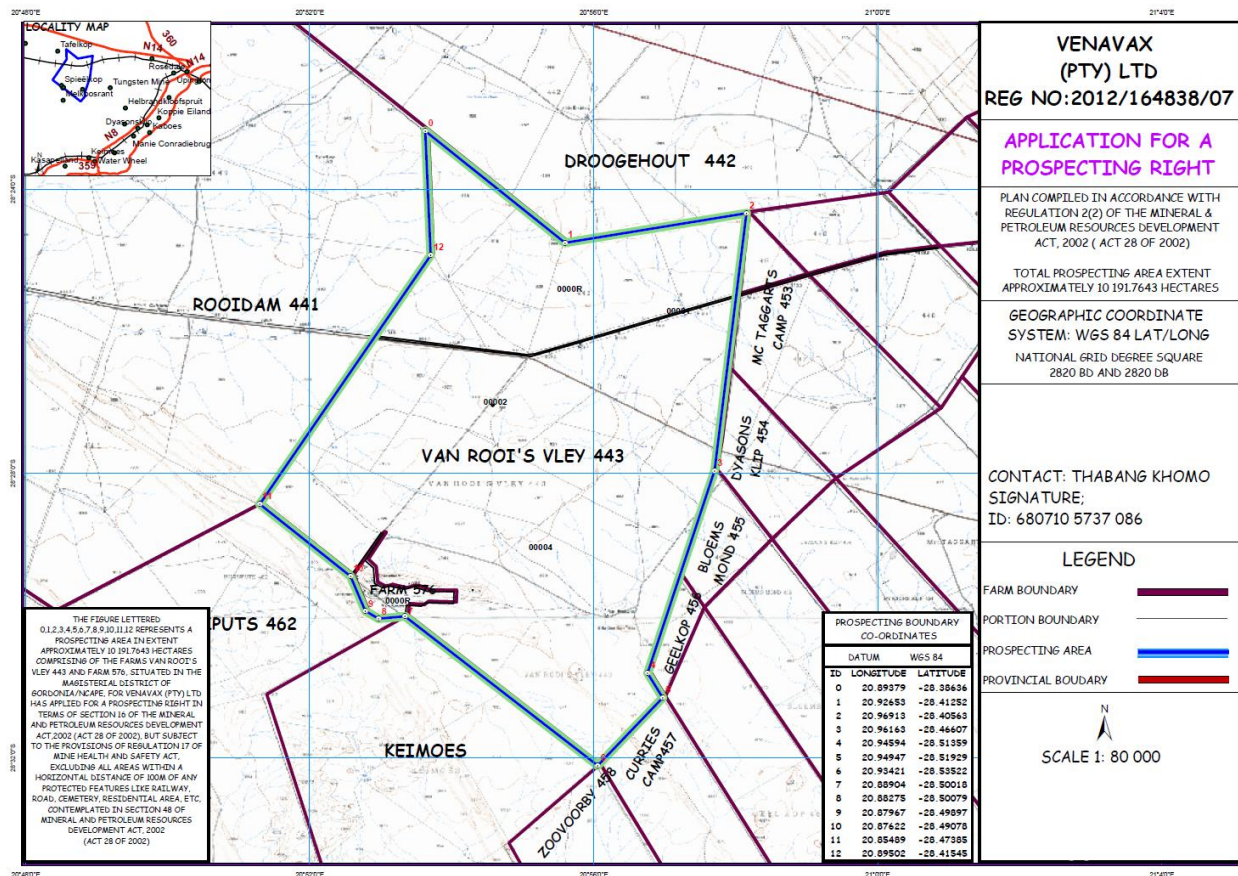
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INTRODUCTION

Venavax (Pty) Ltd has applied for a prospecting right for Tungsten ore, Tin ore, Molybdenum ore and Fluorspar for a 5 year period on the farm Rooidam 443 GJ. The prospecting area is about 30 KM west of Upington, in the Northern Cape Province of South Africa.

See attached Regulation 2.2 Sketch Plan.



1 REGULATION 52 (2): Description of the environment likely to be affected by the proposed prospecting or mining operation

1.1 The environment on site relative to the environment in the surrounding area.

1.1.1. Current Land Use and surface features of the proposed prospecting area.

The farms are currently being used mainly for livestock farming and residential purposes the landowners. There is mostly cattle and sheep farming with sporadic goats and vegetable patches. Farmers are reliant on underground water sources.

No drilling is planned closer to main roads. The area can be accessed via local gravel road from the main road N10 or the N14

There are several small farm drinking pints for the animals that have been erected and water collection points for the communities living on the farm. No drilling is planned closer than 100m from the farm dams.

There are also houses belonging to the communities, scarcely populated. Prospecting will be done at least 100m away from the houses.

1.1.2. Soils and Topography of the prospecting area

Topography

The prospecting site slopes gently to the northern side of the application area.

The area rises in the north at an elevation of approximately 1020 metres above sea level and falls gradually to the south to an elevation of 1150 metres above sea level.

Soils

Mapping delineated mainly AR2 Class which is soils which is red and yellow soils with high base status high in calcisols, cambisols, luvisols and soils dominated by calcium carbonate as powdery lime concretions.

1.1.3. Summary of The Proposed Prospecting Area Study

1.1.3.1. Vegetation, Fauna and Flora

The land is not cultivated and most of the natural vegetation is still intact.

Minor rodents and mammals are present but not viewed as endangered. Small mammals known to occur in the area include hedgehog, rabbits, polecat, meerkat and the ubiquitous rats and mice. Given the habitat, it is likely that birds such as korhaans, larks, and longclaws, species of *Euplectes* (bishops and widows), weavers, starlings and sparrows should occur.

We will move boreholes to areas of minimal removal of vegetation and direct impact to animals.

We will also use existing roads for access into prospecting areas as the land is flat. For all geological work, we will walk on foot in accessible areas to minimise damage to natural growing vegetation.

1.1.3.2. Geohydrological Study

Climate

The monthly distribution of average daily maximum temperatures (centre chart below) shows that the average midday temperatures for Upington range from 119.8°C in June to 33°C in January. The region is the coldest during July when the mercury drops to 0°C on average during the night.

Rainfall

Upington normally receives about 94mm of rain per year, with most rainfall occurring mainly during autumn. It receives the lowest rainfall (0mm) in June and the highest (29mm) in March. The winter months are generally dry.

Wind

The driest months occur in July and August and the windiest month occurs in October. The strongest winds are generally from the south and west all year round. Some dust can be generated in highly exposed areas but is limited to reasonable levels in this area.

Data collected from;

http://www.saexplorer.co.za/south-africa/climate/upington_climate.asp

Surface Water

These features will be evaded and no drilling is planned closer than 100m from any water feature.

Wetlands

No drilling is planned more than 100m from surface runoff streams and river.

Recommended measures to prohibit contamination of water resources

In order to prohibit the contamination of water resources, it is recommended that the prospect drilling is undertaken no closer than 100m from any water ways or wetlands areas identified on the prospecting right.

1.1.3.3. National Heritage Study and Archaeological Study

Consultation is ongoing. A completed study will be forwarded to the department once available.

1.1.4. Environmental description and land use of the surrounding areaLand Use of the Surrounding Environment

The areas within the 500m of the prospecting area can be described as open veldt and some cultivated lands presently used mainly for subsistence farming of cattle, sheep, goats and crop farming.

The following table summary describes the areas:

1.2 The specific environmental features on the site applied for which may require protection, remediation, management or avoidance.

Topography and Drainage

The applicant intends to prevent impacts on the valleys, and the associated ecological corridors which represent, by avoiding prospecting activities below the 160 contour line. The topography is described as mountainous and majority of infrastructures required for prospecting have an impact on topography in that the infrastructures will be visible from distance. Proper prospecting plan, which also addresses expansion, waste management and disposal and rehabilitation, must be compiled to ensure optimal use of resources. The rehabilitation plan and concurrent rehabilitation need to be done.

Consultation with interested and affected parties is ongoing.

Soil

Measurements will be taken, audited monthly to ensure adherence to the prospecting development plans. Soil samples must be taken and analysed to ensure that the topsoil is fertilized to enable sustainable re-vegetation, auditing of the rehabilitation and closure documentation. The post closure and topographical features will comply with the closure agreement from interested and affected parties and the state.

Rivers

Wetlands

There are no wetlands within the application area. With water during rainy season, any pollution of land can lead to pollution of wetlands through surface runoffs and rivers. These features require protection at all times.

Closure /Management

After prospecting the area will be rehabilitated to pre-exploration or better. Drill holes will be sealed with environmentally friendly material after prospecting activities where necessary. Rehabilitation will be conducted according to proper standards, to avoid damage to environment.

1.3 Map showing the spatial locality of all environmental, cultural/heritage and current land use features identified on site.

1.4 Confirmation that the description of the environment has been compiled with the participation of the community, the landowner and interested and affected parties

Some of the land owners agreed that the original vegetation in most parts farm remain intact and that the main land use on the farms is livestock farming and residential use.

2 REGULATION 52 (2) (b): Assessment of the potential impacts of the proposed prospecting or mining operation on the environment, socio- economic conditions and cultural heritage.

2.1 Description of the proposed prospecting or mining operation.

2.1.1 The main prospecting activities (e.g. access roads, topsoil storage sites and any other basic prospecting design features)

The prospecting methods are limited to the following prospecting methods:

(i) DESCRIPTION OF PLANNED NON INVASIVE ACTIVITIES:

(These activities do not disturb the land where prospecting will take place)

Desktop studies will need to be undertaken to determine the Stratigraphic, structural and tectonic setting of the project area that forms the basis of the deposit. Exploration history of the project needs to be described on the work completed by whom, when, techniques used and descriptions of the interpretations and estimates over time.

Mineralogy, geochemistry and metallurgy of the samples will have to be determined in the respective laboratories. Resource estimation and block modeling will be completed by the geostatistician, whilst geological interpretation and exploration data analysis will be completed by the geologist. Resource classification will be determined by the mining engineer.

(ii) DESCRIPTION OF PLANNED INVASIVE ACTIVITIES:

(These activities do disturb the land where prospecting will take place and rehabilitation measures will be implemented)

The invasive prospecting will commence with the geological mapping of the area in question. Drilling and sampling will commence with a planned approach of delineating the deposit by drilling in the furthest points of the licensed area and continuing with infill drilling as required.

Sixty (60) geological core boreholes (TNW Diamond Drilling) will be drilled.

The depth of all planned boreholes is 250m (15000m for 60 boreholes) and will be drilled to intersect all the underlying geological strata and marker horizons. Borehole cores will be logged, samples taken from the seams and dispatched for analyses.

All drill sites will be rehabilitated by replacing the unused cores in the boreholes and replacing the softs from at least 2m below ground level.

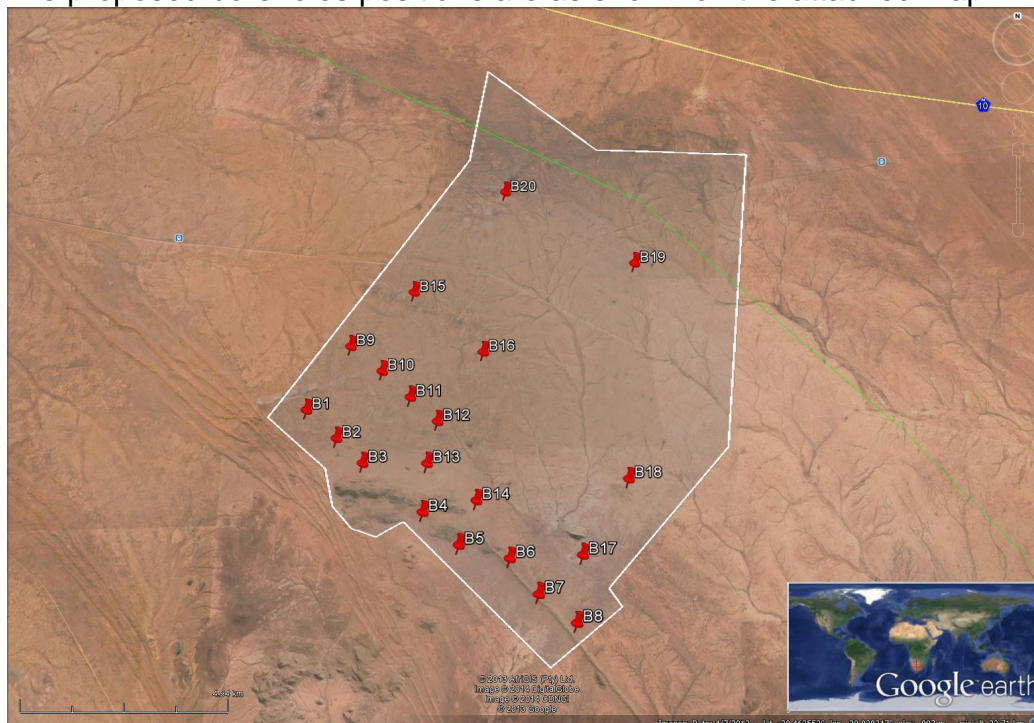
(III) OTHER PROSPECTING METHODS

- A) Excavations:
No excavations will be made.
- B) Trenching:
No trenches will be dug.
- C) Pitting:
No Pits will be dug
- D) Bulk Sampling and Testing:
No bulk sampling will be undertaken

2.1.2 Plan of the main activities with dimensions

Surface Plan Depicting the planned location of Planned Geological Core Boreholes

The proposed boreholes positions are as shown on the attached map:



2.1.3 Description of construction, operational, and decommissioning phases.

2.1.3.1 The Construction Phase

The geological drilling entails the following arrangements to be finalised with the surface owner:

1. Access arrangements to be finalised with the surface owners
2. Arrangements for a camping site where the contractor can erect a temporary drilling camp that can host at least 5 drilling operators and a tractor driver.
3. No roads need to be constructed to gain access to the drilling sites unless otherwise agreed in advance.
4. Pegging of borehole drilling positions at least 100m from waterways and wetland areas

2.1.3.2 The Operational Phase

The operational phase of drilling Geological core boreholes is scheduled over a period of about 3 - 6 Months on an annual basis.

The drilling of Geological core boreholes entails the digging of water circulation sumps of approximately 1mx1m and 0.5m deep next to every drilling position. The geological core is packed in 10m rows on PVC Sheeting.

Once the borehole is complete, every borehole is rehabilitated once the Geologist logged and sampled the resource intersections.

Rehabilitation of every drill site includes the following actions:

- a) Replacing unused core in the borehole
- b) Replacing the soil in every hole from at least 2m below surface in order to allow ploughing in the land after drilling was completed.
- c) Ensure the removal of undue oil from the drilling machine when borehole was completed.

2.1.3.3 Decommissioning and Closure Phase

The decommissioning phase is taken to begin once all required Geological core drilling was completed. A period of one week is allowed to conduct the activities of the decommissioning phase and closure phase. The activities are scheduled in the order as described below:

- Removal of all unwanted material from site
- Cleaning of the drill camp area.
- Disestablishment of drilling equipment from the site.

2.1.3.4 Post Closure Monitoring

The area will be inspected after drilling was completed by a Geologist and Environmentalist to ensure that:

- a) All Geological borehole sites is properly rehabilitated and left in an acceptable state
- b) Ensure the removal of undue oil from the drilling machine when the boreholes were drilled.
- c) Camp site is well cleaned and left in an acceptable status.

2.1.4 Listed activities (in terms of the NEMA EIA regulations)

No listed activities in terms of NEMA EIA regulations will be undertaken considering the design features of the planned prospecting operation:

- No access roads will be constructed and the width of the roads will not exceed 8m
- No diesel tanks with a capacity of more than 80 000 litres will be used on site
No diesel tank will be constructed. The drilling contractor when needed will transport Diesel to site in 150 litre drums.

2.2 Identification of potential impacts

(Refer to the guideline)

2.2.1 Potential impacts per activity and listed activities.

Environmental impacts due to the planned drilling of Geological core boreholes

The proposed borehole map will be provided to the department once the geological mapping has been done to identify areas of great potential for testing by drilling.

The typical impact of this prospecting method on the environments widely mitigated in industry and consists of the following impacts which are to be mitigated as indicated in the below:

Air quality – Dust generation

The supporting equipment for the drilling machine often produces dust. Dust is a nuisance to residents staying down dip of the prevailing wind direction of a prospecting operation.

The industry generally mitigates this aspect by limiting the speed of supporting equipment. The drilling contractor will ensure that the manager on site monitor this aspect on a daily basis.

We will spray water to keep dust level down.

We will use light vehicles for operational purposes.

We will also drill and operate as far as practically possible away from residences and roads close to communities.

Noise from the drilling operation

The planned drilling operation is relatively small that limits the amount of equipment on the site. Only two geological core drill and support equipment will be used as sufficient time is allowed to drill a limited amount of boreholes. No drilling at night and on Sundays is allowed. The contractor will only be allowed to use well maintained equipment and the site foreman will monitor the noise levels.

The prescribed maximum noise levels on the prospecting area boundary must not exceed the prescribed noise levels of 55db in day time (06:00 -19:00)

Surface water protection

The Geologist will be responsible to ensure that no boreholes are drilled in positions where contamination of water resources can occur. No boreholes will be sited within 100m of a recognised surface water source and wetland area. Surface water protection will thus be achieved by evasion.

Rehabilitation of surface disturbance created by the drilling of Geological core boreholes

Rehabilitation of Geological core boreholes is conducted by closing drilled boreholes and drill sumps after the core was retrieved to prove the presence of economical viable resource layers in the prospecting area.

These impacts are neutralised by ensuring that the drilling contractor allows for rehabilitation costs and must be conducted by the drilling contractor before he disestablish site.

2.2.2 Potential cumulative impacts.

No potential cumulative impacts will emanate from the proposed prospecting activities considering the following planned mitigation actions:

- No boreholes will be located closer than 100m from waterways and wetlands.
- The rehabilitation of all geological core boreholes will result in no negative effects on the present land use in the area prospected.

2.2.3 Potential impact on heritage resources

The study of the prospecting area has not highlighted any buildings older than 100 years in or around the prospecting area. No graves exist in or around the prospecting area that will be affected by the prospecting activities. The area does not highlight any area of national heritage or archaeology value that will be affected by the proposed prospecting activities.

2.2.4 Potential impacts on communities, individuals or competing land uses in close proximity.

(If no such impacts are identified this must be specifically stated together with a clear explanation why this is not the case.)

Prospecting will not have any direct impacts on communities, individuals or competing land uses in close proximity of the prospecting area.

2.2.5 Confirmation that the list of potential impacts has been compiled with the participation of the landowner and interested and affected parties,

Details were requested about the way forward and potential benefits and these were discussed but greater detail was due pending the outcome of the prospecting right application. (See attached consultation report)

2.2.6 Confirmation of specialist report appended.

(Refer to guideline)

Specialist investigations will be conducted during phase one and such reports will be submitted to the Department of Mineral Resources once available.

3 REGULATION 52 (2) (c): Summary of the assessment of the significance of the potential impacts and the proposed mitigation measures to minimise adverse impacts.

3.1 Assessment of the significance of the potential impacts

3.1.1 Criteria of assigning significance to potential impacts

This section lists the potential environmental impacts for every prospecting activity conducted in every prospecting phase described in the previous section.

The environmental impact for an activity is assessed by considering the duration, extent, nature, probability, and significance of each impact on the baseline environment such as air quality, noise, soil, fauna, flora and surface water which was described in the baseline description of the environment and which also include the other specialists findings and recommendations

The ranking system used to determine the significance of the impacts resulting from the prospecting operation has been developed, taking cognisance of the requirements of Regulation 50 of the MPRDA which stipulates that the EIA must include “an assessment of the nature, extent, duration, probability, and significance of the identified environmental impacts”.

For the purpose of this report, the significance ranking of prospecting related impacts will thus be determined through the evaluation of the following criteria and before taking into account mitigation measures that will be discussed as part of the EMP:

Extent of impact:

The extent is classified as local, neighbour or region also referred to as small, medium, or large.

Local – Impact only on the prospecting operation.

Neighbour – Will also impact on other parties around the prospecting area and requires monitoring.

Region – Impact on area and requires monitoring

Duration of the impact:

Short Term - An impact that is relative short will thus be temporary in nature and not have a cumulative effect.

Medium Term - An impact that is medium in duration is likely to have a cumulative effect that may or may not require long term monitoring.

Long Term - An impact that is long term in nature and also likely to have a cumulative effect that may require long term monitoring.

Intensity of Impact:

The intensity is an indicator of the nature of an impact. It thus can be low, moderate, or high

Low – Impact affect the environment in such a way that natural, cultural and/or social functions and processes are not affected.

Medium – Impacts affect the environment in such a way that natural, cultural and/or social functions and processes are to some extent influenced.

High – Impacts affect the environment in such a way that natural, cultural and/or social functions and processes will temporarily or permanently be influenced.

Probability of impact:

All impacts are definite if they are quantifiable and there is no doubt that they will occur regardless of preventative measures.

Probable impacts are those that are expected but may or may not occur.

Significance of Impact:

Low Significance – The impact is not likely to be sustainable in nature and may not be important.

Medium Significance – The impacts is moderate and may not be important.

High Significance – The impacts is important and must be addressed.

3.1.2 Potential impact of each main activity in each phase, and corresponding significance assessment

Environmental Impact Assessment of Construction Phase Prospecting Activities

Work program

Description	Element	Impact	Extent	Duration	Intensity	Probability	Significance
2.1.3.1	Establishment of temporary drill camp site	Dust Generation	Localised	Short	Low	Definite	Low
		Noise Generation	Localised	Short	Low	Definite	Low

Environmental Impact Assessment of Operational Phase Prospecting Activities

Work program

Description	Element	Impact	Extent	Duration	Intensity	Probability	Significance
2.1.3.2.1	Transport of water and material to drill holes	Dust Generation	Localised	Short	Low	Definite	Medium
		Noise Generation	Localised	Short	Low	Definite	Medium
2.1.3.2.3	Drilling machine leaking oil	Contamination	Localised	Medium	Low	probable	High
2.1.3.2.3	Geological borehole and drill site rehabilitation	Environmental Degradation	localise	Medium	High	Definite	High

Environmental Impact Assessment of Decommissioning Phase Prospecting Activities

Work program

Description	Element	Impact	Extent	Duration	Intensity	Probability	Significance
2.1.3.3	Dis-establishment of temporary drill camp site	Dust Generation	Localised	Short	Low	Definite	Low
		Noise Generation	Localised	Short	Low	Definite	Low

Environmental Impact Assessment of Closure Phase Prospecting Activities

Work program

Description	Element	Impact	Extent	Duration	Intensity	Probability	Significance
2.1.3.4	Post Closure Monitoring Checks	Rehabilitation	Localised	medium	High	Definite	High
		Contamination	Localised	medium	Low	Probable	High

3.1.3 Assessment of potential cumulative impacts.

The potential cumulative impacts for the prospecting area are limited to invasive actions in the prospecting area.

Invasive actions will leave a negative cumulative impact on the environment should the proposed evading and rehabilitation actions not be executed during the proposed prospecting activities.

Considering the proposed rectification actions, no potential cumulative impacts are foreseen on the environment and the area will be returned to Pre-prospecting status.

3.1. Assessment of the significance of the potential impacts

3.1.1. List of actions, activities, or processes that have sufficiently significant impacts to require mitigation.

List of Environmental Mitigation Measures and Environmental Management actions during the construction Phase

Cross ref 2.1.3.1. Establishment of temporary drill camp site

Duration: +- 2 days

Impact	Goals/Objectives	Mitigation Measures	Management
Dust generation	Manage dust release	Limit speed of vehicles	Inspect conditions
Noise generation	Manage noise release	Use maintained equipment	Inspect equipment

Cross ref 2.1.3.2.1 Transport water and material to drill sites

Duration: +- 24 Month

Impact	Goals/Objectives	Mitigation Measures	Management
Dust generation	Manage dust release	Limit speed of vehicles	Inspect conditions
Noise generation	Manage noise release	Use maintained equipment	Inspect equipment
		Limit drilling to daytime	Contractor to ensure

Cross ref 2.1.3.2.2 Drilling machine leaking oil

Duration: +- 24 Month

Impact	Goals/Objectives	Mitigation Measures	Management
Contamination	Manage contamination	Use maintained equipment	Inspect equipment
		Remove oil spills when occur	Contractor to ensure

Cross ref 2.1.3.2.3 Rehabilitate Geological borehole and drill sites

Duration: +- 3 Days

Impact	Goals/Objectives	Mitigation Measures	Management
Disturbance	Rehabilitation	Replace core in hole, replace softs	Inspect rehabilitation
		Replace softs in sumps	Inspect rehabilitation

List of Environmental Mitigation Measures and Environmental Management actions during the decommissioning/Closure Phase

Cross ref 2.1.3.1. Dis-establishment of temporary drill camp site

Duration: +- 3 days

Impact	Goals/Objectives	Mitigation Measures	Management
Dust generation	Manage dust release	Limit speed of vehicles	Inspect conditions
Noise generation	Manage noise release	Use maintained equipment	Inspect equipment

Cross ref 2.1.3.4. Post closure monitoring checks

Duration: +- 3 days

Impact	Goals/Objectives	Mitigation Measures	Management
Rehabilitation	Rehabilitation	Contract with contractor	Geologist to ensure

3.1.2. Concomitant list of appropriate technical or management options.

Above mitigation measures are widely used in the industry and no other technical or additional management options is required.

3.1.3. Review of the Significance of the identified impacts after bringing the proposed mitigation measures into consideration.

The following bold typed significance changes will be affected by executing the proposed mitigation measures. The environment will thus realistically be restored to an acceptable status, similar to that existed before prospecting commenced.

Environmental Impact Assessment of Construction Phase Prospecting Activities

Work program

Description	Element	Impact	Extent	Duration	Intensity	Probability	Significance
2.1.3.1	Establishment of temporary drill camp site	Dust Generation	Localised	Short	Low	Definite	Low
		Low Noise Impact	Localised	Short	Low	Definite	Low

Environmental Impact Assessment of Operational Phase Prospecting Activities

Work program

Description	Element	Impact	Extent	Duration	Intensity	Probability	Significance
2.1.3.2.1	Transport of water and material to drill holes	Dust Generation	Localised	Short	Low	Definite	Low
		Low noise impact	Localised	Short	Low	Definite	Low
2.1.3.2.3	Drilling machine inspected not leaking	No contamination	Localised	Medium	Low	Definite	Low
2.1.3.2.3	Rehabilitated Geological boreholes	Maintained Environment	localise	Medium	High	Definite	Low

Environmental Impact Assessment of Decommissioning Phase Prospecting Activities

Work program

Description	Element	Impact	Extent	Duration	Intensity	Probability	Significance
2.1.3.3	Dis-establishment of temporary drill camp site	Dust Generation	Localised	Short	Low	Definite	Low
		Low noise impact	Localised	Short	Low	Definite	Low

Environmental Impact Assessment of Closure Phase Prospecting Activities

Work program

Description	Element	Impact	Extent	Duration	Intensity	Probability	Significance
2.1.3.4	Post Closure Monitoring Checks	Rehabilitation	Localised	Short	High	Definite	Low
		No Contamination	Localised	Short	Low	Probable	Low

REGULATION 52 (2) (d): Financial provision. The applicant is required to-

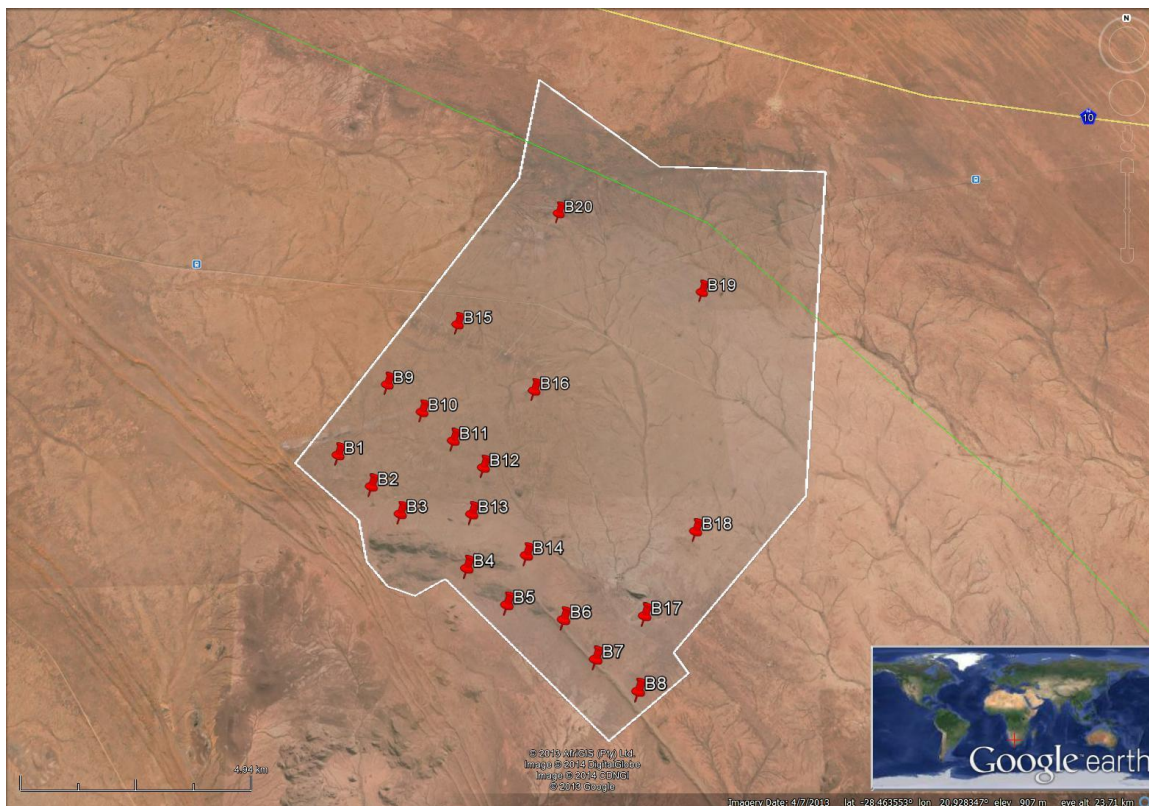
4.1 Plans for quantum calculation purposes.

(Show the location and aerial extent of the aforesaid main mining actions, activities, or processes, for each of the construction operational and closure phases of the operation).

The activities conducted during the Decommissioning/Closure phase and Post Closure phase requiring rehabilitation financial provision are:

1. The management of environmental impacts and provision of funds for general rehabilitation that may include costs to repair roads is required.
2. Rehabilitation of seventeen geological boreholes

Closure Phase Plan/Borehole plan



Proposed boreholes from initial drilling phase. Infill boreholes will likely be within the current grid and likely to be in the south

4.2. Alignment of rehabilitation with the closure objectives

(Describe and ensure that the rehabilitation plan is compatible with the closure objectives determined in accordance with the baseline study as prescribed).

The mitigation actions are compatible with the closure objectives for the prospecting area which will return the area to the original environmental status before prospecting commenced.

4.3. Quantum calculations.

(Provide a calculation of the quantum of the financial provision required to manage and rehabilitate the environment, in accordance with the guideline prescribed in terms of regulation 54 (1) in respect of each of the phases referred to).

CALCULATION OF THE QUANTUM

Applicant:

VENAVAX (PTY) LTD REG

Location:

GORDONIA DISTRICT

Date:

Jan-14

No.	Description	Unit	A	B	C	D	E=A*B*C*D
			Quantity	Master Rate	Multiplication factor	Weighting factor 1	Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	9.67	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	134.76	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	198.59	1	1	0
3	Rehabilitation of access roads	m2	45.00	24.11	1	1	1084.95
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	234.06	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	127.67	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	269.52	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	141285	1	1	0
7	Sealing of shafts adits and inclines	m3	0	72.34	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0.05	94189.7	1	1	4709.4835
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	117312	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	340728	1	1	0
9	Rehabilitation of subsided areas	ha	0	78869.7	1	1	0
10	General surface rehabilitation	ha	0.075	74614.1	1	1	5596.05825
11	River diversions	ha	0	74614.1	1	1	0
12	Fencing	m	0	85.11	1	1	0
13	Water management	ha	0	28370.4	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0	9929.63	1	1	0
15 (A)	Specialist study	Sum	0			1	20000
15 (B)	Specialist study	Sum				1	0
Sub Total 1							44637.27927

1	Preliminary and General	5356.473512	weighting factor 2	5356.473512
			1	
2	Contingencies	4463.727927		4463.727927
Subtotal 2				54457.48
VAT (14%)				7624.05
Grand Total				62082

4.4. Undertaking to provide financial provision

(Indicate that the required amount will be provided should the right be granted).

An amount of R62 082.00 will be provided for the rehabilitation of boreholes

5. REGULATION 52 (2) (e): Planned monitoring and performance assessment of the environmental management plan.

5.2. List of identified impacts requiring monitoring programmes.

The following impacts require monitoring and rectification when Geological core drilling is undertaken.

- The dust emanating from access road must be visually inspected to determine if additional mitigation measures are required.
- The noise emanating from the equipment used must be evaluated by the drilling foreman and rectified if necessary
- Monitor oil leaks and rectify.

5.3. Functional requirements for monitoring programmes.

The drilling foreman will be informed of the required monitoring and rectification actions. The drill contract will include cost to rehabilitate all boreholes. He will also ensure that invasive impacts are also rehabilitated. Management are to ensure that annual Environmental performance assessment are undertaken and reported to DMR.

5.4. Roles and responsibilities for the execution of monitoring programmes.

Daily and weekly monitoring by the Drilling foreman is required to ensure that effective implementation of environmental mitigation actions when geological core drilling is undertaken

5.5. Committed time frames for monitoring and reporting.

Timing	Management Activity
Daily	<p>The dust emanating from access roads must be visually inspected to determine if additional measures are required</p> <p>The noise emanating from the equipment used must be evaluated by the drilling foreman and rectified if necessary</p> <p>Monitor oil leaks and rectify</p>
Weekly	<p>Conduct Rehabilitation of geological core drilling sites once geologist completed sampling of chrome layers</p>
Annually	<p>Conduct the environmental performance assessment as required in terms of the MPRDA.</p>

PLANNED YEARLY EMP MONITORING ASSESSMENTS AND REPORTING OF RESULTS

The environmental Performance Assessment of the EMP will be conducted and submitted to the DMR yearly by a suitably qualified person.

An independent review of the Environmental Performance Assessment to the EMP will be conducted every two (2) years. An external, independent third party will perform this independent review.

Scope of assessment

The main objective of an Environmental Performance Assessment of the EMP is to determine whether the prospecting has complied with its environmental policies and objectives.

The scope of the Environmental Performance Assessment of the EMP will be to determine conformance to the environmental policy of the company and the approved EMP for the proposed prospecting.

The scope also includes the extent of compliance with the Environmental Performance Assessment of the EMP, Legislation, and to review the results of

previous audit, as well as to identify areas of potential improvement for the EMP for the proposed prospecting.

The areas to be audited are those which have been affected by prospecting activities, as well as those that have not yet been affected by prospecting activities, but still require management.

As part of the Environmental Performance Assessment of the EMP, a risk assessment must be undertaken to assist management in compliance with legislation, financial planning, site-specific decision-making, precautionary or remedial actions.

6. REGULATION 52 (2) (f): Closure and environmental objectives.

6.1. Rehabilitation plan

(Show the areas and aerial extent of the main prospecting activities, including the anticipated prospected area at the time of closure).

The activities conducted during the Decommissioning/Closure phase and Post Closure Phase requiring rehabilitation financial provisions are:

Rehabilitation Plan

Closure Objectives	Plan
Seal all prospecting boreholes	At the completion of the operation all 10 proposed boreholes shall be filled in from the total depth to the surface with unused cores and replacing the softs from at least 2m below ground level, in such manner that no excess is deposited on the surface which may interfere with any land use activities.
	If a hole is left open temporarily for any reason (i.e. landowner requesting the borehole to be open for water supply purposes) a suitable casing cap or bridge will be placed over the top of the hole for the period involved.
Achieve health and safety standards	All hazardous and unnatural materials will be removed from the site on completion of the prospecting activities.
	To ensure excellent health is achieved on workers, the workers will be supplied with protective equipment during the operation.
Removal of waste generated during operation	Clean up making sure that there are no waste materials such as plastics, papers, wire, nails, etc that remains on completion of the operation and disposed in a registered disposal site with

	respect to the quality to the quality of the waste
Recreate the original fauna habitat and flora environment	Plant seeds will be kept when removing the vegetation and the area where vegetation has been disturbed will be reseeded.
	The soil will be removed during the construction and will be clustered in terms of their quality and on completion the soil will be placed according to the clustering.
Avoid social impacts on completion of the prospecting activities	The construction & maintenance activities will be of such a nature as not to disturb the livelihood of adjacent property owners and the public infrastructures and on completion of the project the all social disturbing material will be removed.
Obtain the original landscape form	Once heavy machinery has cleared the, the disturbed areas will be leveled and cleared of any foreign material manually.

6.2. Closure objectives and their extent of alignment to the pre-mining environment.

Closure Objectives:

Seal all prospecting boreholes

Achieve health and safety standards

Avoid social impacts on completion of the prospecting activities

Remove all waste generated

Obtain the original landscape form

Recreate the original fauna habitat and flora environment

End Use Objectives:

The mitigation actions are compatible with the closure objectives for the prospecting area which will return the area to the original environmental status before prospecting commenced.

6.3. Confirmation of consultation

(Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and interested and affected parties).

The environmental Objectives forms part of the Basic Information Document provided to the land owners. (Please see attached consultation report)

We hereby confirm that the environmental objectives with relation to prospecting have been communicated to the landowners we met. They offered to assist us in protecting sensitive areas on the farms.

7. REGULATION 52 (2) (g): Record of the public participation and the results thereof.

7.1. Identification of interested and affected parties.

(Provide the information referred to in the guideline)

According to title deeds:

Farm List



Date Requested 2013/11/13 15:33
 Deeds Office VRYBURG
 Registration Division GORDONIA RD
 Farm Name -
 Farm Number 443
 Remaining Extent NOT SELECTED

PORTION LIST				
Portion	Owner	Title Deed	Registration Date	Purchase Price (R)
0	BLUE DOT PROPERTIES 567 PTY LTD	T2463/2002	2002/08/29	R2219963.00
1	TRANSNET LTD	T8612/1918	1918/04/27	R0.00
2	TELKOM S A LTD	T1414/1991	1991/05/11	R0.00
3	*** NO LONGER EXISTS - SEE ENDORSEMENTS ***		-	
4	REPUBLIC OF SOUTH AFRICA	T1013/1995	1995/05/04	R0.00

All of the above farms are situated in the Magisterial District of Gordonia in the Northern Cape Province

7.2. The details of the engagement process.

7.2.1. Description of the information provided to the community, landowners, and interested and affected parties.

The Acceptance Letter from Department of Mineral Resources
 Map of Area Applied For
 Basic Information Document (BID) containing a description of the proposed prospecting activities
 A Questionnaire/ Reply forms with a set of questions allowing for scrutiny and feedback. A brief description of the project was explained to the owners.

An advert was placed on the Kuruman Bulletin, inviting comments from interested and affected parties.

See annexure of the consultation report

7.2.2. List of which parties indentified in 7.1 above that were in fact consulted, and which were not consulted.

The farms were visited on the week of 18 – 22nd November 2013.

Please see attached consultation report for supporting documentation.

- An advert was placed on Kuruman Bulletin on 21 November 2013, inviting interested and affected parties to comment on the application.
- Mrs Benyane from the rural development and land reform was consulted by email, telephone and registered post.

7.2.3. List of views raised by consulted parties regarding the existing cultural, socio-economic or biophysical environment.

None

7.2.4. List of views raised by consulted parties on how their existing cultural, socio-economic or biophysical environment potentially will be impacted on by the proposed prospecting or mining operation.

See attached consultation report

7.2.5. Other concerns raised by the aforesaid parties.

Poor communication and honesty.

Clarity was requested on the way forward.

See consultation reports for other comments

7.2.6. Confirmation that minutes and records of the consultations are appended.

See attached consultation report

7.2.7. Information regarding objections received.

Provisional objection by Blue Dot Properties has been withdrawn pending Venavax including a buffer zone on the application area so that it does not affect adjacent solar plant project.

7.3. The manner in which the issues raised were addressed.

Telephonically

One on one

Environmental Management Plan considerations.

A land access agreement will have to be agreed by the company and land owner before prospecting commences.

8. SECTION 39 (3) (c) of the Act: Environmental awareness plan.

8.1. Employee communication process

Environmental awareness of employees working in the proposed prospecting area is compulsory in ensuring that no undue harm is done to the environment.

This EIA and EMP must be made available to all employees and a copy must be provided to the drilling contractor.

Environmental awareness training by the drilling contractor to his employees before site establishment

The Environmental awareness induction course will include the following topics:

- Map of the prospecting area and environmental features requiring protection as well as the positions of planned Geological core boreholes
- Dust generation related impacts (particularly health and safety related) and mitigation by the limiting of equipment speed on site to less than 30km/hour

- Noise generation from vehicle, equipment, and their maintenance. Limited drilling only during daytime. No Sunday drilling will be allowed.
- Potential for water pollution and the related impacts. Avoidance of waterways the placing of geological core on plastic sheeting to minimise contamination and rehabilitation of drill sites as soon as possible.
- Practical arrangements regarding the clean-up of major and minor hydrocarbon spills.
- Waste minimisation and management.
- Management and monitoring of environmental impacts and mitigation measures.
- Responsible persons

8.2. Description of solutions to risks

Environmental risks must be dealt with in order to avoid pollution or degradation of the environment.

The mitigation measures indicated in the following list are the solutions to address risk associated with the invasive activities of the prospecting programs.

8.3. Environmental awareness training.

(Describe the general environmental awareness training and training on dealing with emergency situations and remediation measures for such emergencies).

An environmental specialist will conduct the required environmental training programmes dealing with emergency situations and scenarios likely to occur. A monitoring/ audit report will be compiled and submitted to the Applicant together with any non-conformances and Corrective Action Instructions after each audit has been conducted.

9. SECTION 39 (4) (a) (iii) of the Act: Capacity to rehabilitate and manage negative impacts on the environment.

COST AND CAPACITY TO MITIGATE AND MANAGE NEGATIVE ENVIRONMENTAL IMPACTS

Tabulation of all prospecting activities, their impacts, management and associated costs for every phase of the prospecting activity.

List of Environmental Mitigation Measures and Environmental Management actions during the construction Phase

Cross ref 2.1.3.1. Establishment of temporary drill camp site

Duration: +- 2 days

Impact	Goals/Objectives	Mitigation Measures	Management	Cost
Dust generation	Manage dust release	Limit speed of vehicles	Inspect conditions	Operating
Noise generation	Manage noise release	Use maintained equipment	Inspect equipment	Operating

Cross ref 2.1.3.2.1 Transport water and material to drill sites

Duration: +-24 Months

Impact	Goals/Objectives	Mitigation Measures	Management	Cost
Dust generation	Manage dust release	Limit speed of vehicles	Inspect conditions	Operating
Noise generation	Manage noise release	Use maintained equipment	Inspect equipment	Operating
Environment	Execution costs	Environmental management	Geologist to ensure	20 000

Cross ref 2.1.3.2.2 Drilling machine leaking oil

Duration: +-24 Months

Impact	Goals/Objectives	Mitigation Measures	Management	Cost
Contamination	Manage contamination	Use maintained equipment	Inspect equipment	Operating
		Remove oil spills when occur	Geologist to ensure	Operating

Cross ref 2.1.3.2.3 Rehabilitate Geological borehole and drill sites

Duration: +- 3 Days

Impact	Goals/Objectives	Mitigation Measures	Management	Cost
Disturbance	Rehabilitation	Replace core in hole, replace softs	Inspect rehabilitation	420082

List of Environmental Mitigation Measures and Environmental Management actions during the decommissioning/Closure Phase

Cross ref 2.1.3.1. Dis-establishment of temporary drill camp site

Duration: +- 3 days

Impact	Goals/Objectives	Mitigation Measures	Management	Cost
Dust generation	Manage dust release	Limit speed of vehicles	Inspect conditions	Operating
Noise generation	Manage noise release	Use maintained equipment	Inspect equipment	Operating

Cross ref 2.1.3.4. Post closure monitoring checks

Duration: +- 3 days

Impact	Goals/Objectives	Mitigation Measures	Management	Cost
Rehabilitation	Rehabilitation	Post Closure Monitoring checks	Geologist to ensure	Operating

The total rehabilitation costs is R62, 082.00

9.1. The annual amount required to manage and rehabilitate the environment.

(Provide a detailed explanation as to how the amount was derived)

Management Budget is R20 000.00

Boreholes Rehabilitation Budget is R42 082.00

The total financial budget to manage and mitigate environmental impacts of this prospecting operation is R62 082.00 and is budgeted for as indicated below.

5 Years Prospecting Period

	Year 2 Phase 2	Year 3 Phase 3	Year 4	Total R
Construction Phase				
EMP Labour costs for 3 years	10 000.00	10 000.00		
Sub total	10 000.00	10 000.00		20 000.00
Operational Phase				
Drilling environmental management	5 000.00	6 000.00		
Rehabilitation costs 10 boreholes	15 000.00	16 082.00		
Sub total	20 000.00	22 082.00		42 082.00
Total Environmental costs				62 082.00

9.2. Confirmation that the stated amount correctly reflected in the Prospecting Work Programme as required.

I Solomon M. Lephoto states that the amount stated correctly reflect in the Prospecting Work Programme.

10. REGULATION 52 (2) (h): Undertaking to execute the environmental management plan.

Herewith I, the person whose name and identity number is stated below, confirm that I am the person authorised to act as representative of the applicant in terms of the resolution submitted with the application, and confirm that the above report comprises EIA and EMP compiled in accordance with the guideline on the Departments official website and the directive in terms of sections 29 and 39 (5) in that regard, and the applicant undertakes to execute the Environmental management plan as proposed.

Full Names and Surname	Solomon M. Lephoto
Identity Number	840923 5464 083

-END-