



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

**NAME OF APPLICANT:
SEDEX MINERALS (Pty) Ltd**

**PROSPECTING RIGHT APPLICATION:
NC30/5/1/1/2/11033PR**

ENVIRONMENTAL MANAGEMENT PLAN

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

District	Namaqualand Administrative District
Farm(s)	Grootriet 529 Portions 2, 3, 4 and Remainder
Mineral(s)	Limestone, Calcite, Dolomite, Sulphur (in Pyrite)

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.

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1 INTRODUCTION, SCOPE, PURPOSE AND USE OF DOCUMENT

This document aims to provide a simplified national standard for applicants for prospecting rights and mining permits to comply with the relevant legislation and environmental regulations as apply to their respective applications in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) (MPRDA). Applicants in this sector of the mining industry typically disturb smaller surface areas of land, whether drilling boreholes, small trenches, or mining on a small area, less than 1,5 hectares of land, under a mining permit as contemplated in Section 27 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)

1.1 SCOPE

This document is intended for use by applicants for mining permits and prospecting rights. Typically, operations in this sector of the mining industry:

- Use little or no chemicals to extract mineral from ore,
- Work on portions of land of 1,5 hectares in size or smaller,
- Disturb the topography of an area somewhat but have no significant impact on the geology

1.2 PURPOSE

This document aims to:

- Provide a national standard for the submission of Environmental Management Plans for the types of applications mentioned above.
- Ensure compliance with Regulation 52 of the MPRDA.
- Assist applicants by providing the information that the Department of Mineral Resources (DMR) requires in a simple language and in a structured, prescribed format, as contemplated in Regulation 52 (2) of the MPRDA.
- Assist regional offices of the DMR to obtain enough information about a proposed prospecting/ reconnaissance or mining permit operation to assess the possible environmental impacts from that operation and to determine corrective action even before such right is granted and the operation commences.

This document aims both to provide the DMR regional offices with enough information about applicants for mining permits and applicants with guidance on environmental management matters pertaining to the mitigation of environmental impacts arising from their operations. Given this dual focus and the generic nature of the document, it might not be sufficient for all types of operations under various circumstances.

The document may therefore be altered or added to as the particular circumstances of the application in question may require.

1.3 USE OF THE DOCUMENT:

This document is designed for use by non-professionals and newcomers to the environmental management industry and it incorporates a very simple Environmental Impact Assessment (EIA). The EIA is contained in Section C of this document and was designed specifically with the target sectors of the mining industry (described in A.2 above) in mind.

The aim is ultimately to (a) gather information from applicants themselves; (b) to assess the impact of the operation based on that information and then (c) to guide the applicant to mitigate environmental impacts to limit damage to the environment.

The next section of the document gathers demographic information about the applicant. Section C gathers the information that will be used in the Environmental Impact Assessment. The applicant must complete the relevant sections of this document, but the regional office of the DMR will do the scoring of these for the impact assessment rating in Section D.

Section F (the Environmental Management Plan) of the document is prescriptive and gives guidance to the miner or prospector on how to limit the damage of the operation on the environment. This part may be added to by the regional manager, who has the prerogative to decide whether this Environmental Management Plan will adequately address the environmental impacts expected from the operation or whether additional requirements for proper environmental management need to be set. Where these additional requirements are set, they will appear in Section G of this document. The Environmental Management Plan (Section F) of the document is legally binding once approved and, in the undertaking contained in Section H, the applicant effectively agrees to implement all the measures outlined in this Environmental Management Plan.

1.4 LEGISLATION/ REGULATIONS

The relevant sections of Mineral and Petroleum Resources Development Act and its supporting Regulations are *summarised below* for the information of applicants. The onus is on the applicant to familiarise him/herself with the provisions of the full version of the Mineral and Petroleum Resources Development Act and its Regulations.

Section of Act	Legislated Activity/ Instruction/ Responsibility or failure to comply	Penalty in terms of Section 99
5(4)	No person may prospect, mine, or undertake reconnaissance operations or any other activity without an approved EMP, right, permit or permission or without notifying land owner	R 100 000 or two years imprisonment or both
19	Holder of a Prospecting right must: lodge right with Mining Titles Office within 30 days; commence with prospecting within 120 days, comply with terms and conditions of prospecting right, continuously and actively conduct prospecting operations; comply with requirements of approved EMP, pay prospecting fees and royalties	R 100 000 or two years imprisonment or both
20(2)	Holder of prospecting right must obtain Minister's permission to remove any mineral or bulk samples	R 100 000 or two years imprisonment or both
26(3)	A person who intends to beneficiate any mineral mined in SA outside the borders of SA may only do so after notifying the Minister in writing and after consultation with the Minister.	R 500 000 for each day of contravention
28	Holder of a mining right or permit must keep records of operations and financial records AND must submit to the DG: monthly returns, annual financial report and a report detailing compliance with social & labour plan and charter	R 100 000 or two years imprisonment or both
29	Minister may direct owner of land or holder/applicant of permit/right to submit data or information	R 10 000
38(1)(c)	Holder of permission/permit/right MUST manage environmental impacts according to EMP and as ongoing part of the operations	R 500 000 or ten years imprisonment or both.
42(1)	Residue stockpiles must be managed in prescribed manner on a site demarcated in the EMP	A fine or imprisonment of up to six months or

Section of Act	Legislated Activity/ Instruction/ Responsibility or failure to comply	Penalty in terms of Section 99
		both
42(2)	No person may temporarily or permanently deposit residue on any other site than that demarcated and indicated in the EMP	A fine or imprisonment of up to six months or both
44	When any permit/right/permission lapses, the holder may not remove or demolish buildings, which may not be demolished in terms of any other law, which has been identified by the Minister or which is to be retained by agreement with the landowner.	Penalty that may be imposed by Magistrate's Court for similar offence
92	Authorised persons may enter mining sites and require holder of permit to produce documents/ reports/ or any material deemed necessary for inspection	Penalty as may be imposed for perjury
94	No person may obstruct or hinder an authorised person in the performance of their duties or powers under the Act.	Penalty as may be imposed for perjury
95	Holder of a permit/right may not subject employees to occupational detriment on account of employee disclosing evidence or information to authorised person (official)	Penalty as may be imposed for perjury
All sections	Inaccurate, incorrect or misleading information	A fine or imprisonment of up to six months or both
All sections	Failure to comply with any directive, notice, suspension, order, instruction, or condition issued	A fine or imprisonment of up to six months or both

1.5 OTHER RELEVANT LEGISLATION

Compliance with the provisions of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) and its Regulations does not necessarily guarantee that the applicant is in compliance with other Regulations and legislation. Other legislation that may be immediately applicable includes, but are not limited to:

- National Monuments Act, 1969 (Act 28 of 1969).
- National Parks Act, 1976 (Act 57 of 1976)
- Environmental Conservation Act, 1989 (Act 73 of 1989)
- National Environmental Management Act, 1998 (Act No. 107 of 1998)
- Atmospheric Pollution Prevention Act, 1965 (Act 45 of 1965)
- The National Water Act, 1998 (Act 36 of 1998)
- Mine Safety and Health Act, 1996 (Act 29 of 1996)
- The Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983).

1.6 WORD DEFINITIONS

In this document, unless otherwise indicated, the following words will have the meanings as indicated here:

Act (The Act) Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)

Borehole A hole drilled for the purposes of prospecting i.e. extracting a sample of soil or rock chips by pneumatic, reverse air circulation percussion drilling, or any other type of probe entering the surface of the soil.

CARA The Conservation of Agricultural Resources Act

EIA An Environmental Impact Assessment as contemplated in Section 38(1) (b) of the Act

EMP Act an Environmental Management Plan as contemplated in Section 39 of the Act

Fauna	All living biological creatures, usually capable of motion, including insects and predominantly of protein-based consistency.
Flora	All living plants, grasses, shrubs, trees, etc., usually incapable of easy natural motion and capable of photosynthesis.
Fence	A physical barrier in the form of posts and barbed wire and/or “Silex” or any other concrete construction, (“palisade”- type fencing included), constructed with the purpose of keeping humans and animals within or out of defined boundaries.
House	any residential dwelling of any type, style or description that is used as a residence by any human being
NDA	National Department of Agriculture
NWA	National Water Act, Act 36 of 1998
Pit	Any open excavation
“Porrel”	The term used for the sludge created at alluvial diamond diggings where the alluvial gravels are washed and the diamonds separated in a water-and-sand medium.
Topsoil	The layer of soil covering the earth which- <ul style="list-style-type: none"> (a) provides a suitable environment for the germination of seed; (b) allows the penetration of water; (c) is a source of micro-organisms, plant nutrients and in some cases seed; and (d) is not of a depth of more than 0,5 metres or such depth as the Minister may prescribe for a specific prospecting or exploration area or mining area.
Trench	A type of excavation usually made by digging in a line towards a mechanical excavator and not pivoting the boom – a large, U-shaped hole in the ground, with vertical sides and about 6 – 8 metres in length. Also a prospecting trench.
Vegetation	Any and all forms of plants, see also Fauna
DWAF	The Department of Water Affairs and Forestry – both national office and their various regional offices, which are divided across the country on the basis of water catchment areas.
MPRDA	the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)
EMPlan	An Environmental Management Plan as contemplated in Regulation 52 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) – this document.

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

ITEM	COMPANY CONTACT DETAILS	
Applicant name	Sedex Minerals (Pty) Ltd	
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Fax no:	021 446 6050	
E-mail address	cthomas@frontierrarearths.co.za	
Postal address	9th Floor, Metropolitan Bldg. 7 Coen Steytler Ave. Cape Town, 8001	PO Box 8399 Foreshore Cape Town 8012

ITEM	CONSULTANT CONTACT DETAILS (If applicable)	
Name	Site Plan Consulting	
Contact Person	Craig Donald	
Tel no	021 854 4260	
Fax no:	021 854 4321	
Cellular no	084 511 1520	
E-mail address	Craig@siteplan.co.za	
Postal address	PO Box 28, Strand, 7139	

ITEM	FURTHER DETAILS
Magisterial district	Namaqualand
Name of the property on which prospecting operations will be conducted	Grootriet 529 Portions 2, 3, 4 and Remainder

3 LOCALITY

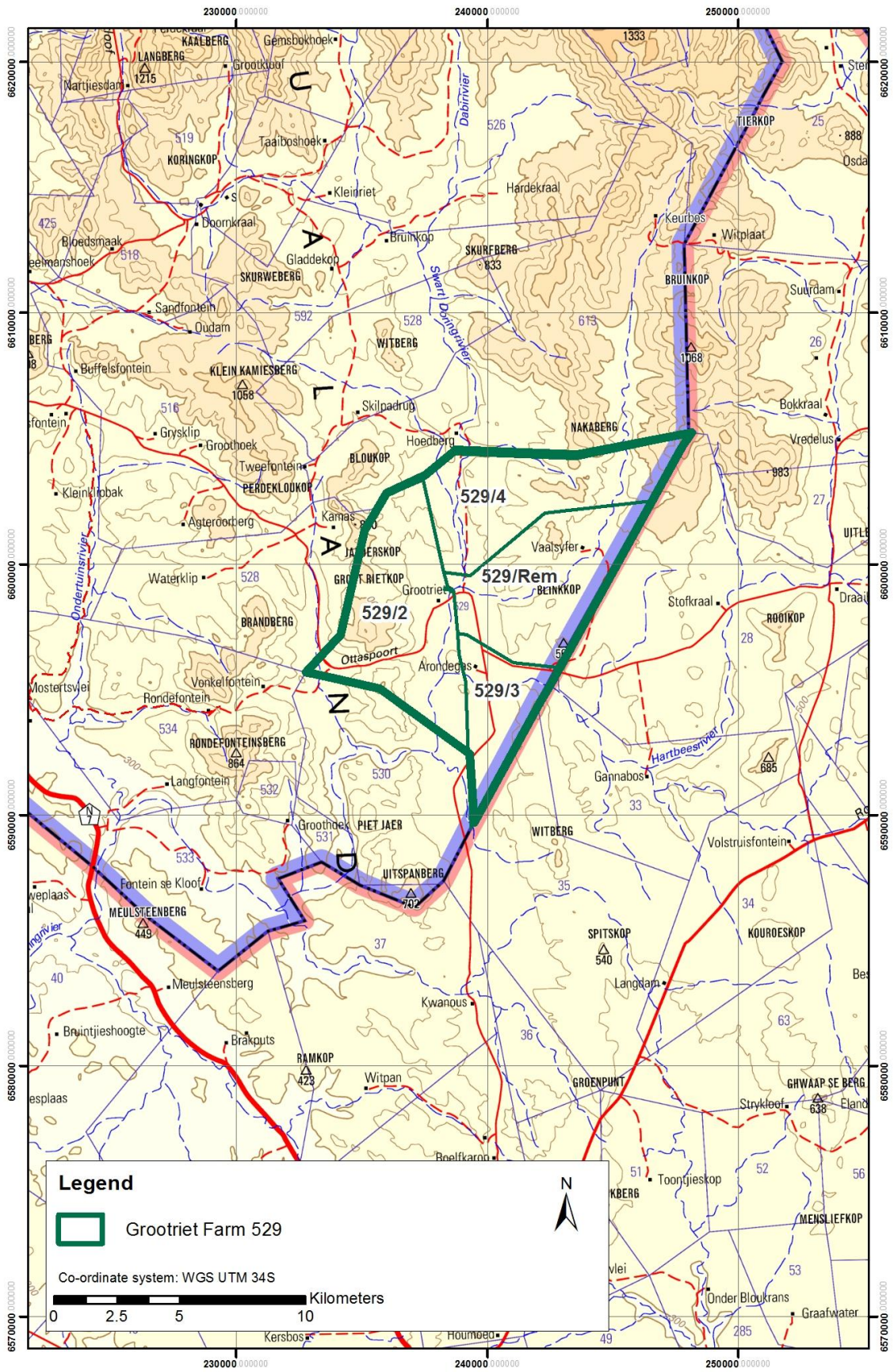


Figure 1: Locality Plan

4 BRIEF PROJECT DESCRIPTION

Refer Part 6 for further details.

This prospecting operation was preceded by information gathering period and the applicants may initiate the project with ground and airborne magnetic and radiometric surveys (as well as possibly having the area flown using LIDAR).

The invasive prospecting methods proposed to determine the nature of material in this prospect are as follows¹:

1. Phase 2: consists of grid based rock sampling, pitting and analysis.
2. Phase 3: consists of drilling of most promising areas on 100m x 100m grid using reverse circulation (RC) drilling to about 50m deep
3. Phase 4: consists of infill drilling on tighter grid in areas identified through earlier drilling to gain full understanding of the resource/reserve.

Both phases 3 and 4 will be subject to EMP amendment to reflect site specific conditions once the sites have been selected.

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

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

5.1.1 Geology

A geological map of the Grootriet farm is shown in Figure 2 below. Here the Vanrhynsdorp Group rocks outcrop in a north-south trending half graben where the western side is bounded by a fault and the eastern side lies unconformably on the Namaqualand Metamorphic Province basement gneiss.

The stratigraphy of the Vanrhynsdorp Group in this area consists of the basal unit of immature quartz arenites and conglomerates of the Flaminkberg Formation overlain by the Grootriet Formation consisting of the blue-black limestone. This in turn is overlain by the Hoedberg Formation greenish laminated carbonaceous shale. These are the important units for defining the limestone horizon as the upper hanging wall consists of shale while the lower foot wall consists of quartzite and conglomerates.

The Grootriet Formation crops out along a strike length of 10km (with a further 2.5km occurring in the Western Cape) and while it is not continually exposed along this length, as the underlying and overlying units are better exposed, it is suspected that the Grootriet Formation will also be continuous along the 12.5km strike length albeit covered by alluvium in places.

¹ Other phases not included here are non-invasive phases such as sample analysis, report compilation etc.

Martini (1987) compiled a handbook on the limestone and dolomite resources of South Africa and describes the Grootriet Formation on the Grootriet farm as a bed 10km long by 500m wide in outcrop, dipping to the west at 30° and partly covered by an alluvial blanket. He further notes that the limestone succession is about 150m thick and includes ~40% of intercalated shale. He collected a series of samples from the base (sample 1) across the stratigraphy to the top (sample 10). Martini (1987) noted the high quality of the limestone material and provided a conservative estimate of the resource of >30 million tonnes.

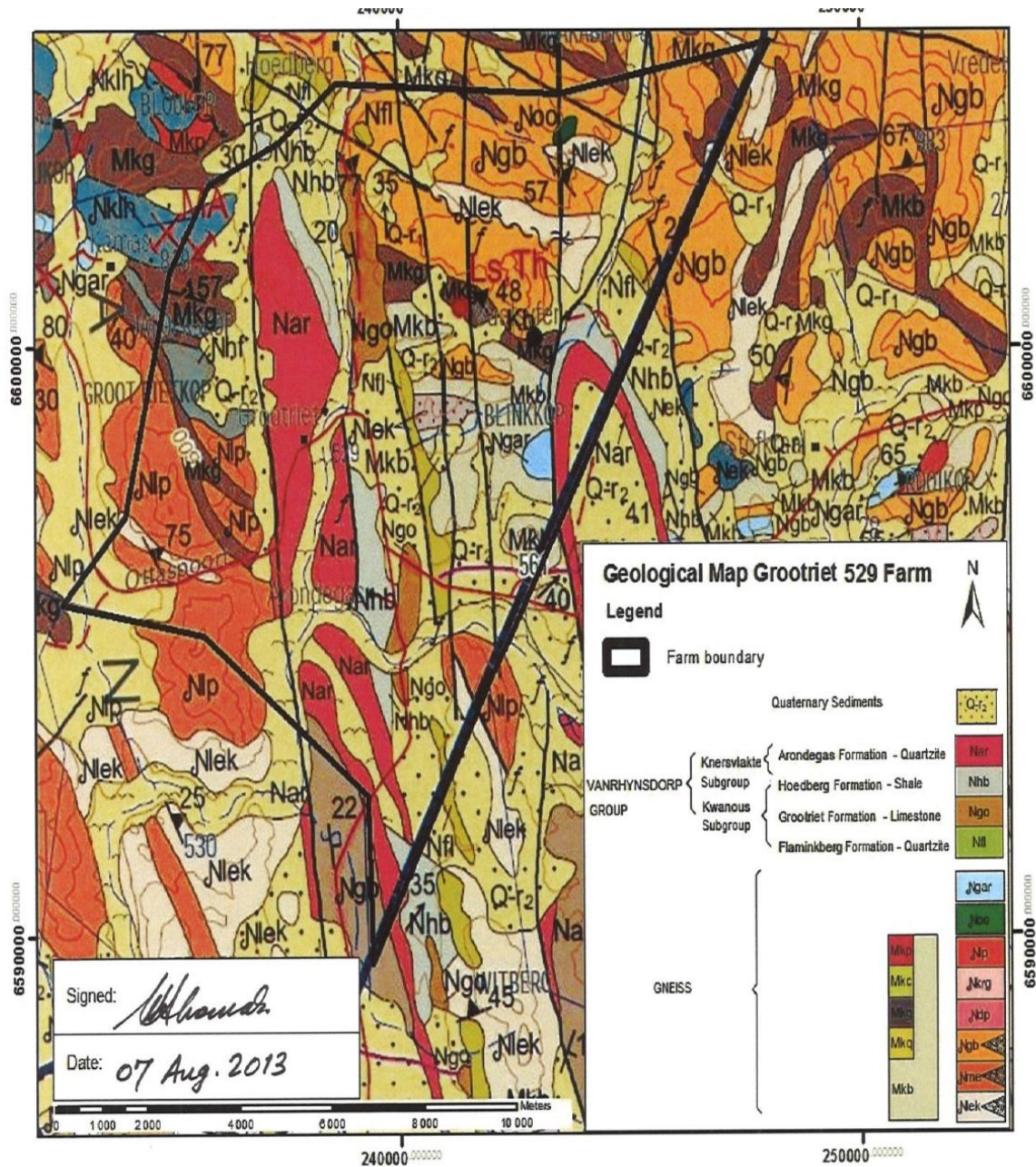


Figure 2: Geological Map showing target body (Ngo) near centre of prospect



Photo 1: Outcrop of target material at the southern "entrance" to the valley and target body

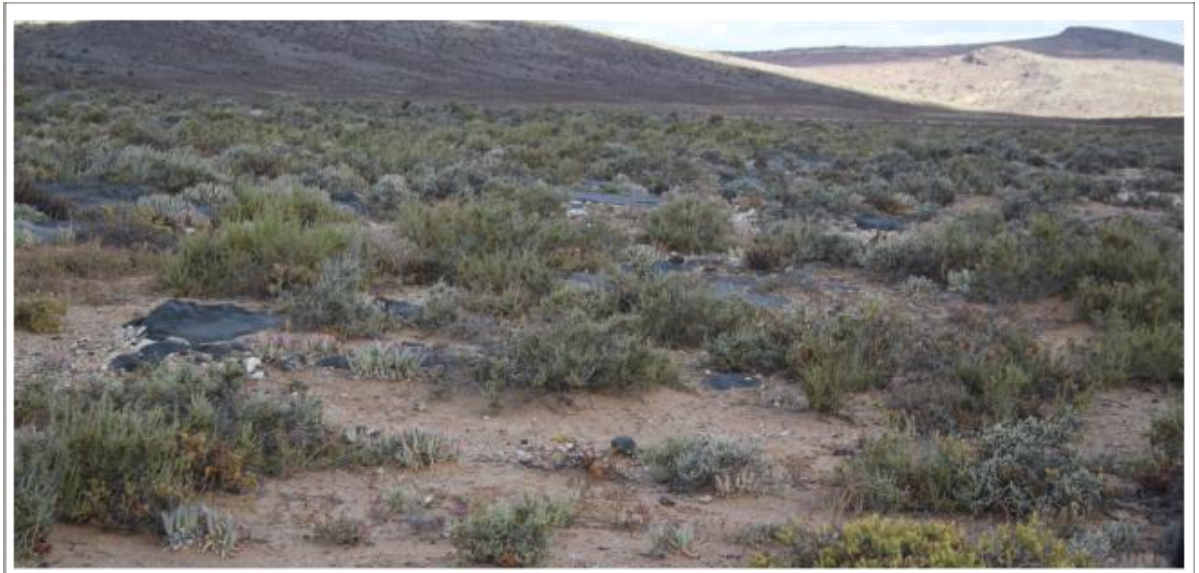


Photo 2: Dolomitic outcrop in the northern end of the valley

5.1.2 Topography

Rounded granite domes of the Namaqualand Upland dominate the general topography. However, the proposed target area is located in a broad north-south filled valley bounded to east and west by the Nama quartzite hills.



Photo 3: The broad flat filled valley between hills to east and west

5.1.3 Soil

Soil depth and composition is variable over the prospecting area as well as the currently identified north south target body. The variability is as follows:

- 1) As seen in photo 2, there are patches with very thin topsoil cover in areas of dolomitic outcrop
- 2) The majority of the site is covered by sandy soil (with topsoil no deeper than 15-20cm) – as seen in photo 3
- 3) As shown in photo below, there are some areas where (river) alluvium and other fill is evident. Note the very shallow topsoil horizon:



In the case where soil is available, then the upper 30cm horizon of soil where available must be treated as topsoil. In the case of this prospect, detailed study of the soil variability is not required (but would most certainly be required for any future Mining Right application).

5.1.4 Vegetation

There are two vegetation types in the prospecting area with only one vegetation type possibly being affected by the proposed prospecting (Namaqualand Blomveld).

Some statistics about these vegetation types are as follows:

Name	Original Area (ha)	Remaining Area (ha)	% Remaining	% Protected	Target %	Ecosystem Status	Protection Level
Namaqualand Klipkoppe Shrubland	1093611	1039202	95	5	28	Least Threatened	poorly protected
Namaqualand Blomveld	380919	357909	94	1	28	Least Threatened	hardly protect

The vegetation types are sourced from “*Mucina, L & Rutherford, M.C. (eds) The vegetation of South Africa Lesotho and Swaziland, Strelitzia 19. SANBI, Pretoria*”.

Refer Figure 3 & 4 below for Vegetation classification (Fig 3) and Fine Scale Mapping project (Figure 4) which project served to define the Critical Biodiversity Areas (CBA).

There is a Quiver tree (Kokerboom) forest on the central western slopes which delineate the western boundary of the target ore body. These trees are located on the slopes outside of the target area and will not be disturbed in any way.

Fortunately, the target ore body for prospecting does not intersect any CBA but does (in the south) intersect the Ecological Support Area (ESA). Any future mining would definitely require specialist botanist input and it is recommended that specialist botanist input be sought prior to any invasive prospecting (especially within the ESA) if such site is selected for further investigation.

5.1.5 Animal Life

It is expected that rodents (especially mice), reptiles, snakes (puffadder, cobra), various buck are found on site and a variety of birds and insects inhabit the area. It is however highly improbable that any impact in this regard will occur, given the exceptionally small footprint of the proposed activities.

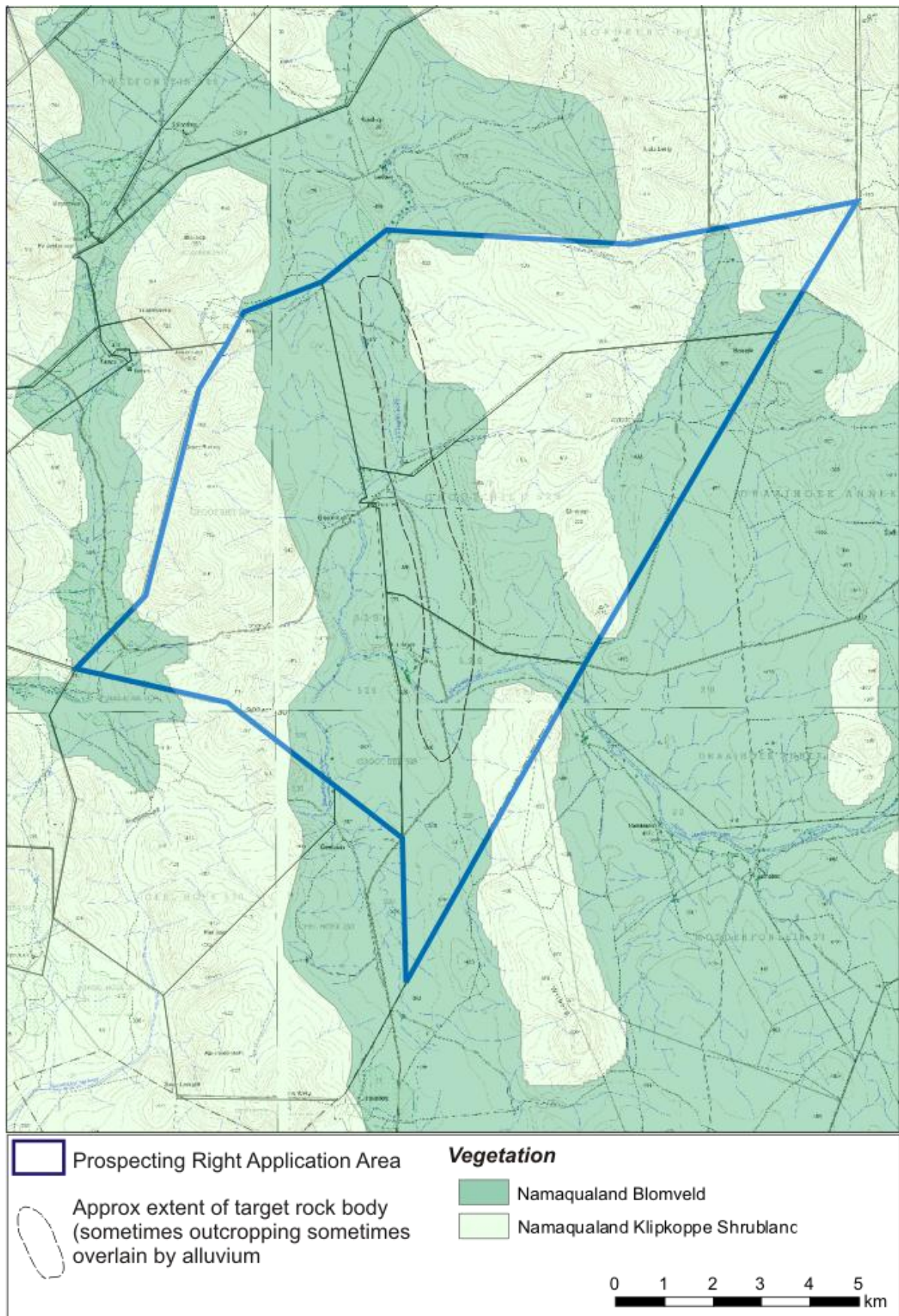


Figure 3: Vegetation Classification

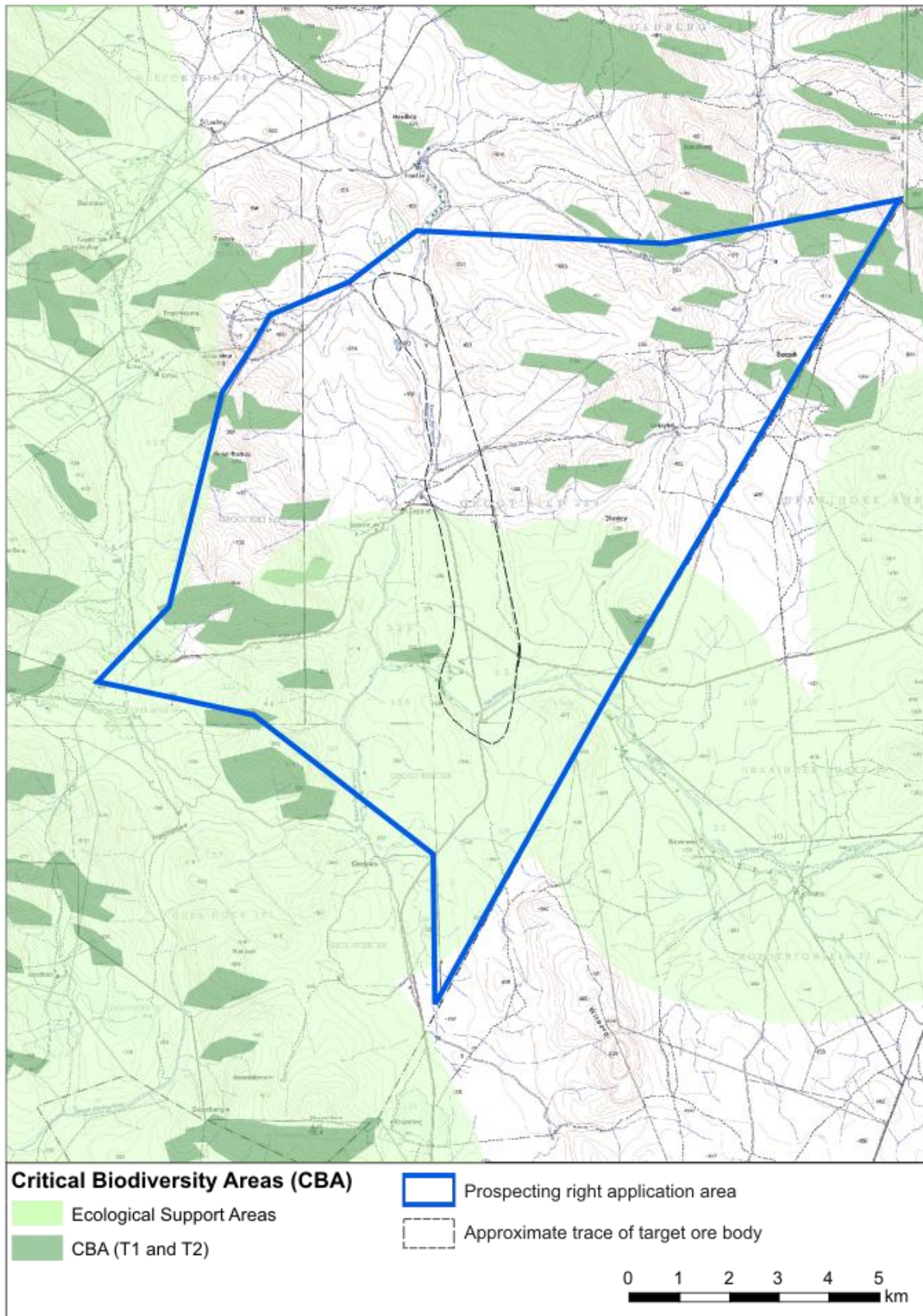
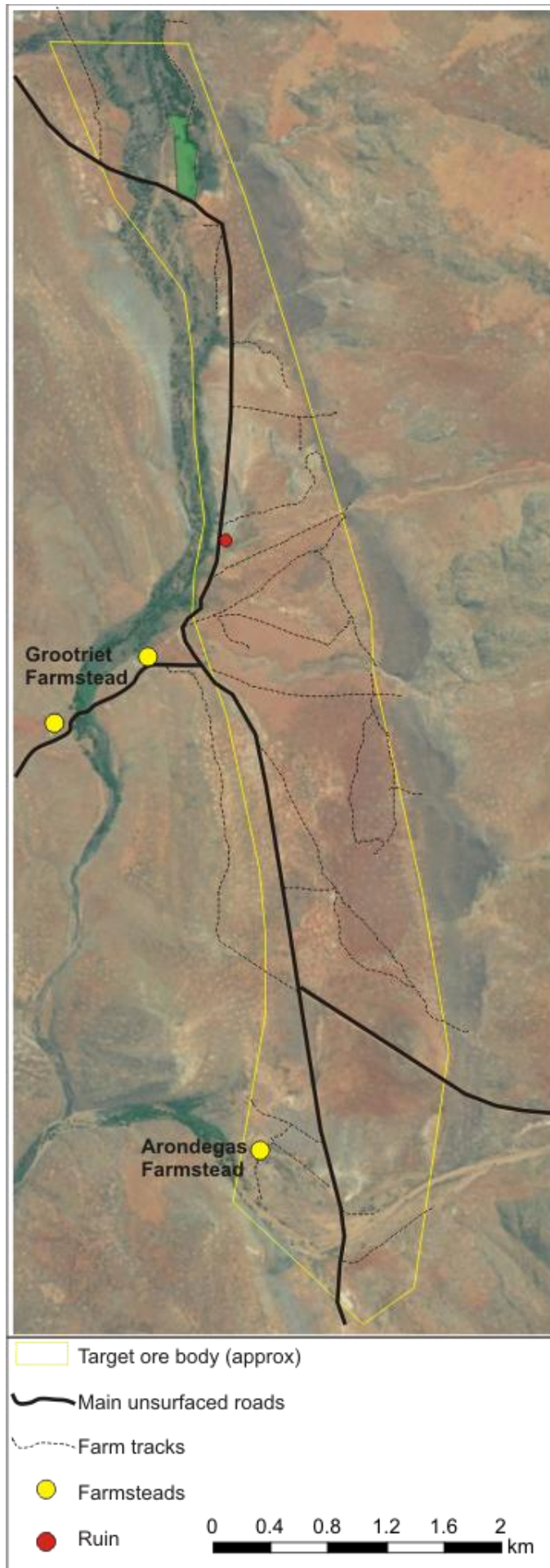


Figure 4: Critical Biodiversity Area network

5.1.6 On site and surrounding land use



The site is very isolated and land use is restricted to a few farmsteads and some unsurfaced roads.

The veld is used for goat and small stock grazing with no agriculture of any significance in the prospecting area.

Figure 5 right shows the land uses in and around the main target ore body including the roads and tracks. Such roads and tracks will supply access to most of the sites for invasive prospecting.

The 2 farmsteads (Grootriet and Arondegas) are located close to the target ore body and there is a ruin in the prospect area (as per photo below) which may or may not have heritage significance. It will not be disturbed by the proposed prospecting.



Figure 5: On site land uses

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

Even though the vegetation is classified as Least Threatened, the area has a high conservation worthiness rating and any drilling and proposed future mining will have to take cognisance of this fact.

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

All vegetation considerations are as contained in Figures 3 and 4. The land use is as contained in figure 5 with such figure also showing location of farmsteads and the ruin.

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

Landowners and affected parties have been consulted in relation to the proposed prospecting activity and engagement is ongoing.

6 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.

6.1 Description of the proposed prospecting operation.

Note that prospecting consists of 5 phases of which only phases 2, 3 and 4 are invasive. The remaining phases are preparation, analysis and sampling and decision-making phases and are not relevant to this EMP

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

Phase 2 of the invasive prospecting will initially consist of surface limestone sampling on a regular grid over areas that have been defined as limestone bearing outcrop at the surface. The samples will have to be taken from the surface and in some instances pitting (by hand) to penetrate the wind-blown sand that is common in this area. This may involve digging a small shallow hole (<2m deep) to sample the limestone bedrock. The hole will be rehabilitated immediately after the sample is taken. The sample lines will be traversed by foot so no new tracks will be formed by the field vehicles. The samples will be analysed for their calcium carbonate content. The data will be interpreted and an anomaly map developed of the most prospective areas.

No machines will be required to access the veld during this phase.

It should be clearly noted that each step or phase of the prospecting activities depends on encouraging results from the previous step.

Phase 3 of the invasive prospecting will be to drill the most promising areas on a coarse grid (~100m x 100m). The drilling method will be Reverse Circulation (RC) to eliminate sample contamination as far as possible. The drill rig will be truck-mounted with a compressor and will be positioned on the drill site using GPS techniques. The holes will be drilled to penetrate the limestone bedrock to a maximum of 100m. RC is a dry drilling technique and no water will be required at the drill site. Once the holes have been drilled the collar positions will be surveyed by a professional surveyor. The holes will be logged and sampled every metre by a geologist and geotechnical team.

As per the Company's standard operating procedures the drill site will be photographed before, during and after drilling and after rehabilitation of the site. A permanent record will be kept on file of these activities.

The samples will be analysed in an appropriate certified laboratory for their calcium carbonate content. The results will be interpreted and an ore-body map developed. If the grades and volumes are encouraging the data will be provided to an independent Consultant to estimate the overall grade and resource tonnages using code compliant (Canadian National Instrument 43-101) resource calculation techniques. This will provide a reliable estimate of what the deposit contains and should enable a clear decision as to the future work required on the programme.

Phase 4 of the invasive prospecting activities will be to carry out infill drilling to further constrain and define the ore-body. The same procedures as for Phase 3 will be followed except the drill spacing will be closer (50m x 50m) grid. The data consisting of borehole logs, geochemistry and mineralogy at 1 metre intervals, collar position and other pertinent information will be provided to the independent Consultant to upgrade the resource and tonnages estimates of the ore body. If, at this time, the resource is considered attractive to the company then Phase 6 will be implemented to develop the mining operation plan



Photo 4: This drill shows the scale of the machinery that will most likely conduct the drilling. Note that the water tanker which was required in this case will not be required here.

Decision-making

- The results of the non-invasive and invasive prospecting methods will be fully assessed and analysed to obtain a detailed understanding of the geology of the project area. This will entail computer generation of models to simulate the deposit.
- Various reports, as are required in terms of the MPRDA, will be submitted to the DMR throughout the prospecting process.
- The Applicant (in consultation with the project team) will make a decision regarding the way forward. The Applicant will have three possible options to choose from regarding the proposed way forward, namely:
 1. Submit a Mining Right Application: Should prospecting yield positive results, then a Mining Right Application may be lodged with the DMR.

2. Continue prospecting: If the prospecting results are non-conclusive, the Applicant might decide to continue prospecting. Should such a course of action be chosen, an application for a Prospecting Right Renewal will have to be lodged with the DMR, if required. Continued prospecting could include additional drilling.
3. Discontinue the entire operation: If the results of the prospecting activities are negative, the Applicant will most likely decide to discontinue the entire operation. Should this option be chosen, then the Applicant will be required to conduct full rehabilitation of the drill sites and any other disturbed areas (if not completed). A Closure Application will, in this event be lodged with the DMR.

6.1.2 Plan of the main activities with dimensions

6.1.2.1 Drilling Access and Layout

Access to the drill sites will be by existing farm roads or fence line tracks wherever possible- Refer Figure 5. In the case where tracks are required to drill sites in the veld these will be accessed as few times as possible to limit impact. No topsoil will be removed prior to “track” development.



Photo 5: Although in different soil form, the resultant track that would arise in sandy material assuming no topsoil or vegetation removal is as shown above. Access must be kept to a minimum.

6.1.2.2 Drilling Programme

The prospecting right is required for a period of five years (60 months). Note that this application has been lodged for 60 months to allow for any delays which may occur or any further amendments which may/will be required.

Drilling is proposed to take place in two periods separated by an analysis phase. The first phase of drilling will require the drilling of approximately 50 RC drill holes to about 50m deep, followed by a second (Phase 4) round of infill drilling of approximately 50 holes to 50m deep.

This will allow for phased chemical analysis of the samples and a decision after each period as to whether to continue with the prospecting programme, or not. It is anticipated that the drill rig will require about 8 hours to complete the drilling activities on each drill site. Drilling may be conducted by one or more teams simultaneously.

6.1.3 Description of construction, operational, and decommissioning phases.

6.1.3.1 Construction Phase:

There is no construction phase. The operation will most likely be run from Garies or Bitterfontein (both 30-35km away) and the only requirement on site is for a chemical toilet to be in place.

6.1.3.2 Operational Phase:

The drilling method is as contained in para 6.1.1. In terms of operational phase rehabilitation, the following procedure is to be followed:

1. The drill layout is to use existing roads and tracks and to as far as possible avoid access to natural veld
2. Take a photo of the site prior to any drill rig access
3. Once at the selected drill site then such site must be demarcated by means of fence droppers and tape (as per photo 4) and no access is permitted outside of such demarcated area.
4. Do not remove any topsoil or vegetation prior to drilling. Experience has shown that such disturbance takes longer to rehabilitate and requires additional machine access into the veld. Some vegetation will be trampled, flattened and broken.
5. Once drilling has been completed, take another photo of the site
6. Then, rehabilitation will merely entail hand raking of the site to level any tyre impressions etc.
7. Similarly, all new tracks through veld must be hand raked to enhance revegetation potential.

6.1.3.3 Decommissioning Phase:

Given the fairly limited nature of the operation, decommissioning rehabilitation merely consists of the removal of all drilling plant from site and hand raking of remaining drill sites. That will be followed up by Environmental Performance Assessment conducted by independent party to determine whether any additional measures need to be put in place.

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

It is theoretically possible that the cumulative drill sites will result in disturbance of more than 1ha of vacant land outside of urban area.

However such occurrence is unlikely given a disturbance of max 75m² at each drill site x 100 drill sites for phases 3 and 4 = 7 500m².

There are no formal protected areas within 10km of the site.

The determination of any listed activities will have to be conducted in consultation with the relevant authority when required.

6.2 Identification of potential impacts

6.2.1 Potential impacts per activity and listed activities.

The **potential** impacts in respect of any drilling exercise are as follows:

1. Dust
2. Noise
3. Impact on vegetation
4. Visual Impact (of drill rig, bakkie and personnel)
5. Soil (specifically topsoil)

6.2.2 Potential cumulative impacts.

Definition: "The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions"

There is no potential cumulative impact as a result of the proposed drilling. The drilling itself will not result in an incremental impact given the lack of impact generated by the drilling and limited time frame of the activities.

6.2.3 Potential impact on heritage resources

To date no Heritage Impact Assessment (HIA) or Archaeological Impact Assessment (AIA) has been undertaken. However, the application has been lodged onto SAHRIS website (by Sedex Minerals (Pty) Ltd) using the PWP as background information for the application. This EMP will also be lodged to SAHRIS by Sedex Minerals (Pty) Ltd for decision by SAHRA on way forward (in terms of studies required if any).

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

The following are listed as **potential** theoretical impacts on surrounding communities:

1. Dust
2. Noise

3. Visual Impact

The proposed drilling will however result in such limited impact as to render these impacts negligible to non-existent especially considering the isolation of the site.

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

Landowners and affected parties have been consulted in relation to the proposed prospecting activity and engagement is ongoing.

6.2.6 Confirmation of specialist report appended.

None to date. It is recommended that specialist input be obtained when target areas have been selected. Specialists required will most likely be Botanist and possibly also Heritage practitioner.

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

7.1 Assessment of the significance of the potential impacts

7.1.1 Criteria of assigning significance to potential impacts

a) The significance level is based on the following criteria:

<i>Significance</i>		<i>Criteria</i>
Negative	Significant (S)	<ul style="list-style-type: none"> Recommended level always exceeded with associated widespread community action Disturbance to areas that are pristine, have conservation value, are important resource to humans and will be lost forever Complete loss of land capability Destruction of rare or endangered specimens May affect the viability of the project
	Moderate (M)	<ul style="list-style-type: none"> Moderate measurable deterioration and discomfort Recommended level occasionally violated – still widespread complaints Partial loss of land capability Complete change in species variety or prevalence May be managed Is insignificant if managed according to EMP provisions
	Minor/ Insignificant ^(I)	<ul style="list-style-type: none"> Minor deterioration. Change not measurable Recommended level will rarely if ever be violated Sporadic community complaints Minor deterioration in land capability Minor changes in species variety or prevalence
Positive	Minor	<ul style="list-style-type: none"> Improvements in local socio-economics
	Significant	<ul style="list-style-type: none"> Major improvements in local socio-economics with some regional benefits

b) The duration is classified as

- Permanent (post-closure)
- Life of Mine (LOM)
- Temporary

c) The probability is ranked as

- Definite/Certain
- Possible
- Unlikely

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

The table below refers to expected impact as a result of Phase 2 activities which includes pitting by hand. No machines or vehicles will access site:

Environmental Element	Activity	Attenuation/ Mitigation Measures to be Applied	Significance Level (after attenuation)	Duration	Probability
Geology	Pitting by hand	None required	None	None	Definite
Topography	Pitting by hand	None	None	None	Definite
Visual Impact: Of team on site	Pitting by hand	None required	Insignificant	Whilst on site and not hidden by ridgelines	Unlikely
Soils	Pitting by hand	No topsoil removal. Hand raking after pitting	None	Maximum 1 week until hand raking of site takes place	Definite
Land Capability	Pitting by hand	Ensure no unnecessary access into veld	None	Only whilst at the site – probably no more than 3-4 hours per hole	Definite
Natural Vegetation and Animal Life	Pitting by hand	1) Do not remove vegetation 2) No unnecessary access to natural vegetation permitted.	Insignificant	Vegetation will recover within 1 or 2 rainy seasons at the most	Unlikely
Surface Water: Quantity	Pitting by hand	None	None	None	Definite
Ground Water: Quantity & Quality	Pitting by hand	None	None	None	Definite
Air Quality (Dust)	Pitting by hand	None required	Negligible (if any)	None	Highly unlikely
Air Quality	Vehicles on unsurfaced roads	None feasible except to limit speeds	Negligible	Per activity	Likely
Noise	Pitting by hand	None required	None	None	Definite

Environmental Element	Activity	Attenuation/ Mitigation Measures to be Applied	Significance Level (after attenuation)	Duration	Probability
Archaeology (provisional)	Pitting by hand	Drillers to be trained to recognise surficial artefacts	None	None	Highly Unlikely
Socio-Economic	Prospecting	Minor positive employment impact	Insignificant	Temporary	Definite

The impact table below refers to RC drilling and “track” development to sites off the existing tracks:

Environmental Element	Activity	Attenuation/ Mitigation Measures to be Applied	Significance Level (after attenuation)	Duration	Probability
Geology	RC Drilling	None required	None	None	Definite
Topography	RC Drilling	None	None	None	Definite
Visual Impact: Of team operating drill	RC Drilling	None required	Insignificant	Whilst on site and not hidden by ridgelines	Unlikely
Soils	RC Drilling	No topsoil removal. Hand raking after drilling	Insignificant	Maximum 1 week until hand raking of site takes place	Definite
Soils	“Track” development	No topsoil removal. Hand raking after track no longer required	Insignificant	Maximum 1 month until hand raking of track takes place	Definite
Land Capability	RC Drilling	Ensure drill site is demarcated and no access outside site permitted	Insignificant	Only whilst at the site – probably no more than 8 hours per hole	Definite
Land Capability	“Track” development	No topsoil or vegetation removal. Hand raking after use.	Insignificant	Maximum 1 month until hand raking of track takes place	Definite
Natural Vegetation and Animal Life	RC Drilling	1) Do not remove vegetation during drill site establishment 2) No unnecessary access to natural vegetation permitted.	Insignificant	Vegetation will recover within 1 or 2 rainy seasons at the most	Definite
Natural Vegetation and Animal Life	“Track” development	1) Do not remove vegetation when accessing track 2) No unnecessary access to natural vegetation permitted.	Insignificant	Vegetation will recover within 1 or 2 rainy seasons at the most	Definite
Surface Water: Quantity	RC Drilling	None	None	None	Definite

Environmental Element	Activity	Attenuation/ Mitigation Measures to be Applied	Significance Level (after attenuation)	Duration	Probability
Surface Water: Quality	Oil/fuel spill/leak	Measures in paragraph 7.2.4	Insignificant, if any given small equipment	Temporary	Unlikely
Ground Water: Quantity & Quality	RC Drilling	None	None	None	Definite
Air Quality (Dust)	RC Drilling	None required	Negligible (if any)	None	Possible
Air Quality	Vehicles on unsurfaced roads	None feasible except to limit speeds	Negligible	Per activity	Likely
Noise	RC Drilling	None required	Insignificant	Whilst machine operates	Definite
Archaeology (provisional)	RC Drilling	Drillers to be trained to recognise surficial artefacts	None	None	Highly Unlikely
Socio-Economic	Prospecting	Minor positive employment impact	Insignificant	Temporary	Definite

7.1.3 Assessment of potential cumulative impacts.

None. No cumulative impacts.

7.2 Proposed mitigation measures to minimise adverse impacts.

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

There will be no significant impacts on any aspect of the environment as a result of the planned drilling.

7.2.2 Concomitant list of appropriate technical or management options

Note: The impacts are deemed to be so small and the remediation measures so clear that no technical or management options are deemed necessary in this case.

7.2.3 Review the significance of the identified impacts

(After bringing the proposed mitigation measures into consideration).

Refer table in para 7.1.2. No significant impacts will arise through this RC Drilling operation.

7.2.4 Disposal of waste material:

7.2.4.1 Domestic Waste

No waste will be disposed of (buried) on site. Domestic waste will merely consist of lunch wrappers, cool drink bottles and cans, etc. These will be retained by the operators on their person or vehicle until the end of the day when the minor volumes will be disposed of in a refuse bin.

Induction training will ensure that all staff are made aware of the impact of littering.

7.2.4.2 Industrial Waste

No Industrial waste will be generated as all vehicle servicing and maintenance will be conducted at facilities off-site. Should emergency repairs be required then the oil/fuel management procedures below will be employed.

Fuel receipt, storage and dispensing:

No storage of fuel will take place on site. Fuel will be brought in as required in small bowser or fuel drums if necessary (but unlikely). Fuel will be pumped with all the necessary funnels and safety equipment as is required in the normal process of transferring of fuel.

A fire extinguisher must be close at hand.

Vehicle / drill rig / excavator leaks:

Vehicles and equipment must be checked on a daily basis for oil/diesel/hydraulic fluid leaks. Drip trays must be available on site and should any oil/fuel/lubricant leak from the equipment, then such leaked fluid is to be collected via the drip trays into drums for transport to Oilkol or similar depot for recycling.

Should such leaked oil contaminate the topsoil, then such topsoil and oil must be removed from site and disposed of at suitable facility.

On-site repairs: No workshop will be required and all scheduled servicing will take place off site.

Emergency repairs on site:

In the (unlikely) event of a breakdown repair being required in the field, the staff should be instructed in use of drip trays and suitable funnels (not to drain oil into the sand) for filling and draining of lubricants and the staff shall be provided with such equipment to prevent oil contamination.

In addition:

- Used/replaced filters, hoses, belts, cloths, etc. are to be placed in a bin for same day removal from site and disposal at a suitable facility. Used filters are not to be buried at the site of repair (nor discarded in adjacent bush).
- In the event of soil contamination, the contaminated soils are to be removed and placed in suitable bags or drums for disposal at a licensed facility or depot.

All staff involved in mobile plant operation and maintenance is to be made aware of these oil and lubricant procedures. Staff will require instruction in the:

- Deleterious effects of oil / fuel on the environment
- Handling of oil leaks onto soil

General Provisions

- All operators are to check their equipment for leaks and report such leaks on a daily basis (before and after morning start up, at lunch break and when parking the equipment for overnight shutdown).

7.2.5 Noise:

Physical prospecting activities will result in low noise levels, associated mainly with vehicular activity on site:

- Vehicles on roads only
- Petrol/diesel driven RC Drilling

In total, noise generation will be much localised, temporary and negligible.

The only possible attenuation measures to be put in place include the following

- Staff/ Operator awareness of possible noise impact through induction training
- Noise generation will be restricted to the hours of 07h00 – 17h00
- Ensure that vehicle comply with regulatory traffic noise emission standards

7.2.6 Air Quality (Dust)

It is highly unlikely that dust will ever represent any impact larger than negligible given the very small scale of the operation, the short duration of invasive prospecting at any particular site as well as the general isolation of the activities.

No attenuation measures are required; however the following measures should be implemented under extreme wind conditions:

- Staff/ Operator awareness of dust impact through induction training
- Cease operations under high summer wind conditions if required (but highly unlikely)

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

8.1 Plans for quantum calculation purposes.

The amount that is necessary for the rehabilitation of damage caused by the operation, both sudden closure during the normal operation of the project and at final, planned closure must be calculated based on the information supplied in this document.

This amount will reflect how much it will cost the Department to rehabilitate the area disturbed in case of liquidation or abscondence.

In this case it stressed that minor decommissioning rehabilitation will be required given that absolutely no pits are developed, no new roads will be developed in the veld (with the exception of seldom accessed tracks) and the activity footprint is so small.

Notwithstanding the above, it is incumbent on the applicant nevertheless to supply a bank guarantee to cover the costs of the rehabilitation of the disturbances which do take place.

So for the purposes of calculating the quantum it is assumed that a liberal 75% of the sites and tracks need hand raking by a team of men (refer calculation in para 8.3).

8.2 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 closure objective is to return the site to its current land use and land capability rating. In this case the land capability rating is wilderness area (with subordinate grazing).

The rehabilitation of the site entails the following actions per drill site:

- Raking of each site and track after use with hand held rake
- General check of the site to look for signs of oil/fuel leaks
- Final Environmental Performance Assessment after all drilling and rehabilitation actions have been completed to ensure success of the proposals herein.

8.3 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).

The following assumptions apply:

- 1) It takes a team of men 1 hour to rake a site and 2 hours per 100m of track
- 2) Team consists of 5 men earning R175 each per day
- 3) Working day is 8 hours
- 4) 1 working day of 8 hours costs (5 persons x 8 hours x R175 / day) = R875

Then :

- 75 drill holes will take 75 hours (plus further 7-8 hours access between sites) = 10 days
- 2km roads = 40 hours plus 3-4 hours access= 6 days

Total of 7 days with a team of 5 persons:

Final rehab of all auger drill hole locations:	
Assume, hand raking at 75 holes, fuel / oil leak at 5% of holes, 2km of tracks PLUS any unforeseen issues (i.e. in addition to 10% contingency)	R15 000
Estimated cost for transporting staff	R4 500
Plus 10% contingency	R 1 950
Plus 14% VAT	R 3 300
Grand Total	R24 453

It is recommended that a nominal sum of **R25 000** be provided by the applicants by bank guarantee to cover any possible unforeseen issues which may arise.

The information above reflects the calculation used in deriving the Rehabilitation Fund Guarantee. The provision for rehabilitation of the site will be supplied by means of a bank guarantee to be supplied to the Department of Mineral Resources. The purpose of such a fund provision is to provide for rehabilitation of the site by State nominated contractors should the applicant for any reason be unable to complete the rehabilitation activities or complete them insufficiently.

8.4 Undertaking to provide financial provision

The required amount of R25 000 or alternate amount adjudicated by DMR will be provided by the applicant by way of Bank Guarantee.

The applicant commits to the provision of such guarantee through the lodging and signing of this document.

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

The applicant will ensure the following activities / functions take place to ensure implementation of this EMPlan's prescriptions:

- Copies of the EMPlan will be made available to the site manager.
- The applicant will ensure that the site manager/operator is fully au fait with the prescriptions of this EMPlan.
- The site manager will be responsible for ensuring that labour / operators are aware of their environmental responsibilities related to their activities.
- The site manager will continuously (whilst on site) conduct monitoring of activities taking place on site ensuring that all activities comply with the prescriptions of the EMPlan.
- Any shortcomings must be remedied immediately and if required the site manager must explain the required actions and reasons for them to the applicable person

In addition it is required that Environmental Performance Assessments (in terms of Regulation 55) must be conducted at the following milestones:

- After the first week of invasive prospecting, and
- Every 1 year after that
- And after cessation of activities

9.1 List of identified impacts requiring monitoring programmes.

The only aspects of the operation that will require monitoring are as follows:

1. Photographic records of each site
2. Oil/ fuel leaks by drilling equipment and any vehicles which enter the site
3. Ensure that any disturbance is raked by hand-rake prior to leaving the site
4. Ensure that there is no disturbance of site once the drill leaves the site.

9.2 Functional requirements for monitoring programmes.

Fortunately, this monitoring programme is a very simple operation and no specific functional requirements are deemed necessary, however the final Environmental Performance Assessment must be conducted by independent party.

There is no need for measuring of dust, noise or water quality levels given the small scale of this operation.

9.3 Roles and responsibilities for the execution of monitoring programmes.

The contract manager² will be responsible for carrying out the interim monitoring whilst the final Performance Assessment must be conducted by independent party.

9.4 Committed time frames for monitoring and reporting.

The drilling contractor will be responsible for monitoring the rehabilitation of the site as soon as the drill moves to its next position.

The applicant company will be responsible for monitoring the success of rehabilitation proposals as soon as the driller has drilled their last hole but before such driller leaves the site.

Independent compilation of the EPA will take place 1 month after the driller has left the site.

² The Prospecting Right holder will always remain responsible for the rehabilitation of the site

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

10.1 Rehabilitation plan

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

No more than 50 drill locations are required in the initial drilling phase with possible infill drilling of additional 50 drill locations. However, none of these sites can yet be demarcated within the Prospecting Right application area.

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

Regulations 56 to 62 outline the entire process of closure, as a guide to applicants on the process to be followed for closure, and also to address the legal responsibility of the applicant with regard to the proper closure of this operation.

In terms of Section 37 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002), the holder of a right is liable for any and all environmental damage or degradation emanating from his/her operation, until a closure certificate is issued in terms of Section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002).

The closure objective is to return the site to its current land use and land capability rating. The site will be returned to its original wilderness rating.

10.3 Confirmation of consultation

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

Landowners and affected parties have been consulted in relation to the proposed prospecting activity and engagement is ongoing.

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

NOTE: The public participation and record thereof was compiled by the applicant whilst the remainder of the EMP was compiled by consultant (Site Plan Consulting).

11.1 Identification of interested and affected parties.

11.1.1 Name the community or communities identified, or explain why no such community was identified.

The properties are privately owned and no communities are affected or living on the properties.

11.1.2 Specifically state whether or not the Community is also the landowner.

The properties are privately owned.

11.1.3 State whether or not the Department of Land Affairs been identified as an interested and affected party.

Although the Department of Land Affairs has not been identified as an interested or affected party, this department was consulted.

11.1.4 State specifically whether or not a land claim is involved.

No land claim has been submitted over the properties.

11.1.5 Name the Traditional Authority identified

None

11.1.6 List the landowners identified by the applicant.

The Landowners of properties upon which the application is lodged are as follows:

FARM NAME	OWNER	Tel	TITLE DEED	Extent
Groot Riet 529 Remainder	Desert Wind Properties 145 (Pty) Ltd.	076 459 1600	T66486/2006	3009.6679ha
Groot Riet 529 Portion 2	Coenraad H Coetzee	083 653 8554	T39085/2000	3567.1345ha
Groot Riet 529 Portion 3	Martha M Kotze	027 642 1140	T14098/1973	1367.5818ha
Groot Riet 529 Portion 4	Coenraad H Coetzee	083 653 8554	T39085/2000	2809.0752ha

11.1.7 List the lawful occupiers of the land concerned.

- Remainder of Groot Riet No. 529 - occupied by Mr. Lawrence Rabbets, co-owner/shareholder of Desert Wind Prop 145 (Pty) Ltd.
- Ptns. 2 and 4 of Groot Riet No. 529 - occupied by Mr. A.J.J. Coetzee and Mrs. J.E. Kotze, brother and grandmother of owner, Mr. C.H. Coetzee. Mrs. J.E. Kotze has usufruct over this property.
- Ptn. 3 of Groot Riet No. 529 - occupied by Mr. P. Kotze, son of owner, Mrs. M.M. Kotze.

11.1.8 Explain whether or not other persons' (including on adjacent and non-adjacent properties) socio-economic conditions will be directly affected by the proposed prospecting or mining operation and if not, explain why not.

The proposed prospecting operation consists of the drilling of a number of RC Drilling holes on the Groot Riet portions. It is impossible for an operation of such nature and small scale to have any impact on the socio economic status of any surrounding party or other (except perhaps for the contractor who will receive payment for drilling of the holes).

11.1.9 Name the Local Municipality identified by the applicant

Kamiesberg Local Municipality

11.1.10 Name the relevant Government Departments, agencies and institutions responsible for the various aspects of the environment and for infrastructure which may be affected by the proposed project.

It is understood from the Department of Mineral Resources (DMR) that the DMR will contact relevant Government Departments. Government departments directly contacted by the applicant and other agencies and institutions responsible for various aspects of the environment and infrastructure that have been identified by the applicant are as follows:

- Department of Land Affairs
- South African Heritage Resources Agency (SAHRA)

Proof of such consultation was provided by the applicant in the Consultation report submitted to the DMR by the applicant.

11.1.11 Submit evidence that the landowner or lawful occupier of the land in question, and any other interested and affected parties including all those listed above, were notified.

Evidence and proof of consultation is attached to this EMP document - refer to Annexure B.

11.2 The details of the engagement process.

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

All landowners and occupiers were personally visited, consulted and briefed on the proposed prospecting operation and work programme. A letter with a brief description of prospecting activities as well as a copy of the prospecting work programme had also been sent to all by registered mail;

Other affected parties were informed by email and/or registered mail and were asked to comment on the information letter and prospecting work programme, copies of which were provided for comment;

A notice of proposed prospecting right application was published in the local newspaper "Die Plattelander", dated 01 November 2013, inviting interested and/or affected parties to submit any comments which they may have.

11.2.2 List of which parties identified in 11.1 above that were in fact consulted, and which were not consulted.

Department of Land Affairs
 The South African Heritage Resources Agency (SAHRA)
 Marlin Verde (Pty) Ltd. (affected party)
 Mooncloud 21 (Pty) Ltd. (affected party)
 Mr. C. H. Coetzee (landowner)
 Desert Wind Properties 145 (Pty) Ltd. (landowner)
 Mrs. M. M. Kotze and Mr. P. Kotze (landowner and occupier)
 Mrs. J. E. Kotze and Mr. A. J. J. Coetzee (occupiers)

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

During the personal consultations the landowners and occupiers all pledged their co-operation and support on condition that the Company abides by all applicable environmental guidelines and laws and that access and compensation agreements be in place before any prospecting work commences.

SAHRA responded with a letter, dated 13 November 2013, stating that a Phase 1 Archaeological Impact Assessment Report needs to be done before any invasive prospecting work takes place. The Company has taken note of this.

Marlin Verde responded by email, giving details of the location of their dimension stone mining operation and requested details of the location of target areas of Sedex's proposed operations.

Otherwise, no further comments were received.

11.2.4 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.

There were no comments raised.

11.2.5 Other concerns raised by the aforesaid parties.

None

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

Yes. Refer Annexure B.

11.2.7 Information regarding objections received.

There were no objections

11.3 The manner in which the issues raised were addressed.

As no negative comments or objections were raised, operations will be carried out as described in the prospecting work programme and strictly in accordance with the EMP. Sedex Minerals will continue to consult and co-operate with Marlin Verde to ensure that there is no negative impact on their operations.

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

12.1 Employee communication process

(Describe how the applicant intends to inform his or her employees of any environmental risk which may result from their work).

The actual physical prospecting will most likely be conducted by specialist contractors with their own staff. Part of the contract will be that the contractor staff must undergo a brief environmental induction training course.

The content of such course is as recommended in Annexure A.

12.2 Description of solutions to risks

(Describe the manner in which the risk must be dealt with in order to avoid pollution or degradation of the environment).

The only risk which is evident relates to possible (but unlikely) Hydrocarbon spill or Hydrocarbon pollution from another source.

The full handling procedure is as contained in Para 7.2.4.

12.3 Environmental awareness training.

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

The short lived nature of the physical prospecting at this site does not preclude the applicant / contractor from providing adequate environmental awareness training. Annexure A shows what would serve as minimum content for such environmental awareness training.

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

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

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

The amount to conduct rehabilitation at each drill site will be absolutely minor and relates only to

1. The raking of the affected area by hand rake should such disturbance actually be evident and,
2. Handling of any fuel / oil contamination of the soil at any site (unlikely)

The amount for such rehabilitation has been calculated by way of guarantee for decommissioning rehabilitation as R25 000. Assume that such amount is also the annual cost of operational rehabilitation.

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

Yes. The PWP includes the minor rehabilitation amount in that budget. Any variation in funds for rehabilitation would be minor in terms of the entire prospecting cost.

14 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	Cyril Victor Thomas
Identity Number	610129 5085 08 8

ANNEXURE A

Example of Induction Environmental Training

**Annexure A:
PRELIMINARY ENVIRONMENTAL INDUCTION TRAINING
Groot Riet Prospect:**

December 2013

A. INTRODUCTION

Environmental management is a team effort. All management and staff are responsible for avoiding environmental damage and ensuring good environmental management.

The keys to achieving this are:

- Being aware of the environment and the need to protect it
- Understanding and recognising the things to protect and the do's and don'ts
- Knowing the reporting procedure
- Taking pride in good environmental housekeeping

15 Legal Requirements

- Requirement of the MPRDA
 - to have an EMP (Environmental Management Plan)
(show the document, the approved EMP, to all staff in the induction and briefly note the items it covers)
- Additional laws
 - National Water Act – note that it doesn't apply in this case but just use it to raise awareness
 - use of water
 - discharge of sewage
 - control of surface water
 - quality of stormwater discharged from site
 - avoidance of groundwater by oils, sewage or other
 - prevention of impact on groundwater aquifers
 - National Environment Management Act which will be made to apply if you do not work according to the EMP. *If you don't work according to the EMP the prospect will be classified as non-conforming and may have issues if / when applying for mining right*

Targets:

- Understanding of what is contained in the EMP
- Buy in by staff of the need for environmental protection (especially as it pertains to site rehabilitation and staying away from vegetation as much as possible)
- Good results in Environmental Performance Assessment

Why do we need Environmental Management?

1. It is an integral part of normal good management (Good Housekeeping) on the prospect site together with
 - Safety
 - Efficiency (Productivity)
 - Planning (specific activities in specific areas)

2. The prospect is part of the larger environment and may have an impact in terms of:
 - Vegetation
 - Surrounding landowners (although unlikely)
 - Noise or dust (also unlikely)

3. NO GO areas must be respected:
 - No new roads or tracks unless approved by management – all natural veld is considered no go area for vehicles and no staff member may make ad hoc tracks without consultation with management. Staff to be made aware that penalties apply.
 - They are important to preserve from botanical integrity point of view

4. Integration of the prospect with surrounding land uses / users requires that the following be limited through proper action by the staff:
 - Lack of successful rehabilitation
 - Noise / dust

5. **Who does the damage to the Environment?**
 - a) **Management:**
 - (i) by not being fully informed themselves of the content of the EMP and other decisions/controls
 - (ii) by not informing the staff of proper procedure and the environmental consequences of incorrect activities
 - (iii) by not conducting regular monitoring
 - (iv) by not developing their own personal sensitivity to environmental impact

 - b) **Equipment Operators:**
 - (i) by driving equipment or moving items outside of roadways, movement areas.
 - (ii) by dumping material in veld
 - (iii) By not reacting and immediately reporting fuel or oil or hydraulic fluid leaks

 - c) **General Staff:**
 - (i) Use of the veld as a toilet (NOT ALLOWED)
 - (ii) Littering with lunch wrappings, bottles
 - (iii) (Unlikely) Causing of fire or failure to report fire or threat of fire as soon as it is seen

6. **What the Staff should be aware of to look out for:**
 - Allocated litter storage or dump areas
 - Don't dump anywhere else!!
 - If in doubt ask first!!

 - No-go areas
 - Don't enter these areas and don't drive into them

 - Recognise NO GO areas and
 - Don't disturb them
 - Don't drive into them
 - Don't use them as toilet areas

- Oil, fuel or hydraulic leaks
 - As soon as you see these, report them to the operator or the foreman/manager
- Report littering
- Recognise (know the difference between) domestic waste and industrial waste and use correct procedures for their disposal
- Know the refuelling and oil change procedure if you are involved in it to know how to avoid pollution
- Recognise the threat of fire
- Immediately report any threat of fire or fire if seen

7. **Fire Reporting Procedure and Oil, Fuel, Hydraulic Leaks**

If you see a fire starting or threat of fire in the veld take the following action (Highly unlikely):

- Make safe what you are doing at the time
- Leave your task and report the fire to the nearest supervisor / manager

If you see an oil or fuel leak in soil, consult site manager who will have the process to be followed specified in the EMP

8. **Other environmental incidents reporting procedure**

These include littering, unnecessary damage to vegetation, etc. Report these at end of shift or lunch time to supervisor / manager

9. **Penalties for Environmental Damage**

- Fines
- Conditions of employment contract