



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

NAME OF APPLICANT: Namaqua Wollastonite (Pty) Ltd

REFERENCE NUMBER: NC 30/5/1/1/2/11429 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)**

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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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.

Status of the cultural environment that may be affected

The cultural landscape of Leliefontein as with all other community land within Namaqualand are primarily based on nomadic small stock grazing.

Status of any heritage environment that may be affected

The proposed prospecting operation will mainly consist of non-invasive activities with limited drilling. The possibility to unearth any fossils or artifacts is therefore zero and given the high cost of a visit to this site, no first phase paleontological assessment is deemed necessary. Limited drilling the only invasive prospecting activity will not take place within a distance of 500m from any infrastructure including heritage resources such as built structures over 60 years old, sites of cultural significance associated with oral histories, burial grounds and graves of victims of conflict, and cultural landscapes or viewscapes that may be present on the prospecting area applied for.

Status of any current land uses and the socio-economic environment that may be directly affected

Within 5 years of the SPLUMA (Act 16 of 2013), municipalities are required to prepare and adopt land use schemes which will replace the current zoning/town planning schemes. Land use schemes must give effect to Municipal Spatial Development Frameworks and once adopted will have the force of law. No land use scheme is currently in place for Namakwa District municipally and this prospecting area is situated outside any town planning scheme.

Approximately 90% of the region is however used for livestock grazing and production, with the remainder comprising of agriculture and urban development. Tourism is a seasonal but rapidly growing feature – with visitors to the region arriving almost exclusively between July and October in order to take in the world renowned yearly flower display. Urban development is not a major feature of the landscape, and is not expected to increase much in the coming years.

The only other land use within the specific area applied for is small stock grazing and due to the small extends and non-invasive nature of the prospecting operation there will be no impact on productivity. Prospecting will only be a temporary land use where after land use will revert back to the pre-prospecting land use grazing. Productivity of the land with regard to land use is very low and prospecting will have no impact on the productivity of the area. Prospecting will mainly consist of non-invasive activities with limited drilling, and the only impact on the socio-economic conditions will be positive through limited job creation. Most of the Northern Cape is currently defined as vacant or unspecified land use (Refer Map 1).

Status of any infrastructure that may be affected

No infrastructure will be affected as only limited drilling will take place. Existing roads and tracks will be used and in the case of new tracks be developed it will be addressed at final closure and rehabilitation.

Status of the biophysical environment that may be affected

Topography

Namaqualand is a unique and diverse environment – owing in large part to the presence of four distinct biogeographically regions within its boundaries. The Orange River valley lies to the north and is characterized by very dry desert conditions. In the west the area is composed of coastal plains – which transition into granite hills that straddle the escarpment, before transforming into low lying Bushmanland plains to the East. The site is located within an area known as the Namaqualand Klipkoppe. The topography of the area is dominated by low mountains (Refer Map 2).

Soil

The soils in a regional context are reddish, moderately shallow, sandy, and often overlay layers of calcrete of varying depths and thickness. The soils are typically weakly structured with low organic content. These soils drain freely which results in a soil surface susceptible to erosion, especially wind erosion when the vegetation cover is sparse and gully erosion in areas where storm-water is allowed to concentrate. The soils in the area are generally not suitable for dry land crop production and the only area where intensive crop cultivation is feasible is along the Orange River where irrigation is possible therefore the pre-prospecting land capacity is categorized as Class III grazing land. The productivity of the area is very low at 8Ha/SSU (Refer Map 3).

Natural Vegetation

The Namaqualand Klipkoppe Shrubland of which the prospecting area forms part has 15 endemic plant species. The Namaqualand Klipkoppe Shrubland (SKn 1) and the Kamiesberg Mountain Shrubland vegetation types are structurally very similar, and also share a lot of species. Typically Kamiesberg Mountain Shrubland occurs at higher elevations (900–1300m) than Namaqualand Klipkoppe Shrubland (<600 – 1300m), or in moister situations, such as on south and east facing slopes or in the western part of the Kamiesberg. Namaqualand Klipkoppe Shrubland fades into various forms of Succulent Karoo at lower elevations, and on the dry eastern fringes of the Kamiesberg (at the relatively high altitude of 1000m) changes into Namaqualand Blomveld (SKn 3) (Refer Map 4).

A significant number (>15) of endemic species occur primarily or wholly within these two vegetation types, but as noted, this may be partly a function of insufficient habitat or locality information, and also partly a function of the physical extent of these two vegetation types, which cover very large areas in Namaqualand.

In all situations the Shrubland vegetation occurs in rocky areas, with relatively shallow soils. In areas where deeper soils are found it changes to Renosterveld (above about 1000m, and where there is enough moisture), or to Blomveld (in drier situations, or below about 1000m). Typical species in the Shrubland vegetation include *Rhus undulata* (taaibos), *Rhus horrida*, *Lebeckia sericea* (fluitjiesbos), *Didelta spinosa* (perdebos), *Pteronia incana* (asbos), *Pentzia incana* (ankerkaroo), *Euphorbia mauritanica* (melkbos), *Zygophyllum morgsana* (slaaibos), *Cotyledon cuneata* and *C. orbiculata* (plakkies), and *Ruschia* spp. *Ozoroa dispar* (resin tree) and *Aloe dichotoma* (kokerboom) are useful indicators of Klipkoppe Shrubland, and seldom occur in Kamiesberg Shrubland. *Elytropappus rhinocerotis* (renosterbos) may be present in Kamiesberg Shrubland, but is never dominant, and is not present in Klipkoppe Shrubland.

The prospecting area is situated to the west of the SKEP's Namaqualand Uplands Geographical Priority area but a small portion is situated within the Ecological Support Corridor.

Animal Life

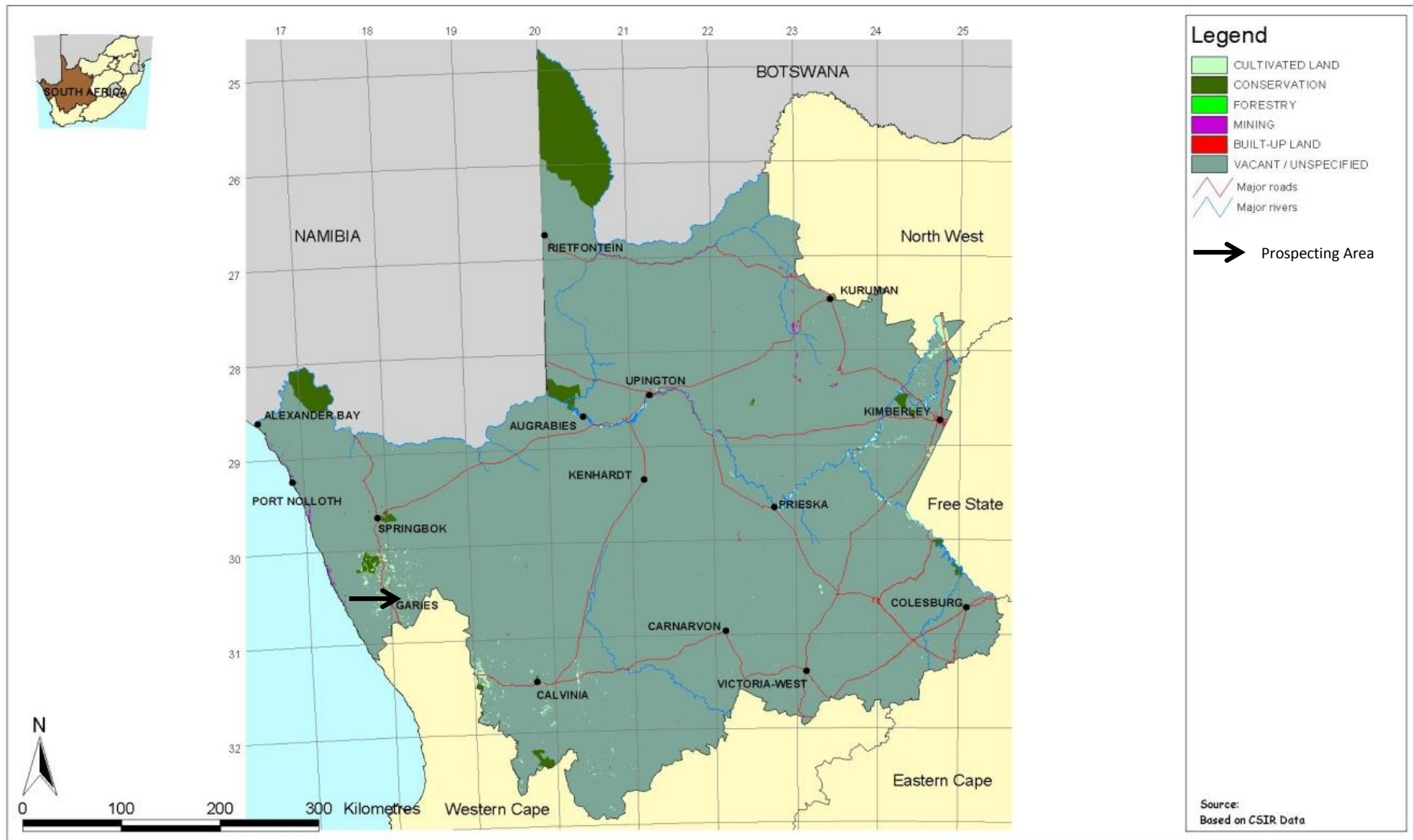
Endemism rates for invertebrates are high, and many unique and remarkable adaptive insects can be found in this region, including the scorpion – of which 22 are already known to be endemic to the NDM. Likewise, there is an abundance of reptiles and snakes in the region, many of which are near endemic (including the Namaqua dwarf adder, which is the smallest of Africa's adders, measuring between 20-25 cm), as well as a few unique frogs such as the endemic rain frog, the marbled rubber frog and the paradise toad. Larger herbivores are absent due to the altered habitat and competitive land uses

Surface Water

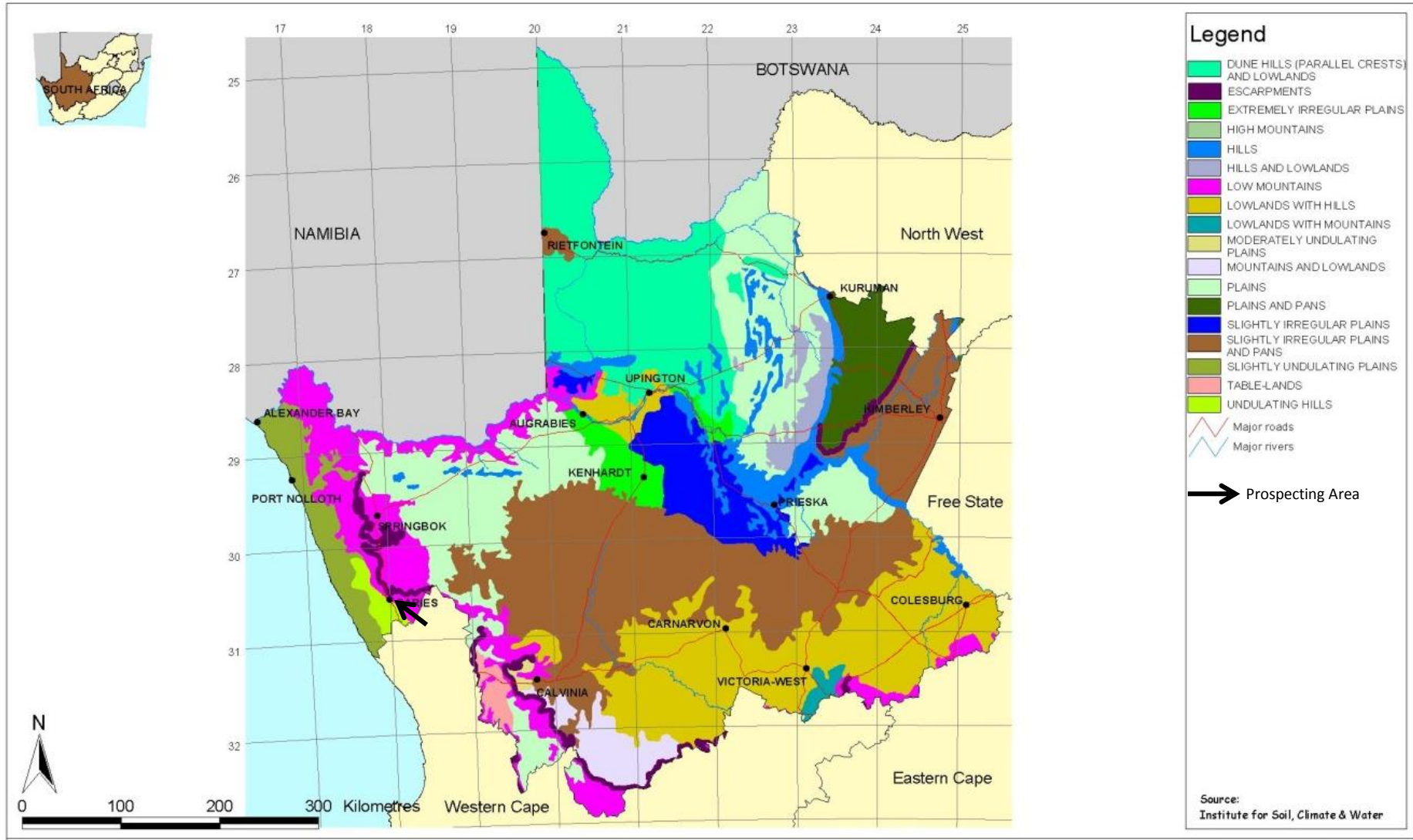
The prospecting area included a few intermittent streams that form the top catchment area of the Groen Rivier but no permanent drainage channels occur within the prospecting area and there is no dendritic system which could be disturbed (Refer Map 6). Surface water only accumulates in the drainage channels after exceptional good rains. Given the variability of semi-arid rainfall, the calculation of the mean annual runoff (MAR) would be of no use. The MAR is in any event very low given the low rainfall less than 200 mm per year occurring mainly in the winter months, high evaporation rates, and shallow grade of the slope toward the drainage channels and the permeability of the soils

The surface water quality (when available) is suitable for animal consumption but not for potable water. No drilling will be allowed within any drainage channel and no diversion or altering of any water course will occur. Only existing farm tracks will be used therefore it will not be necessary to construct new roads that will cross water courses.

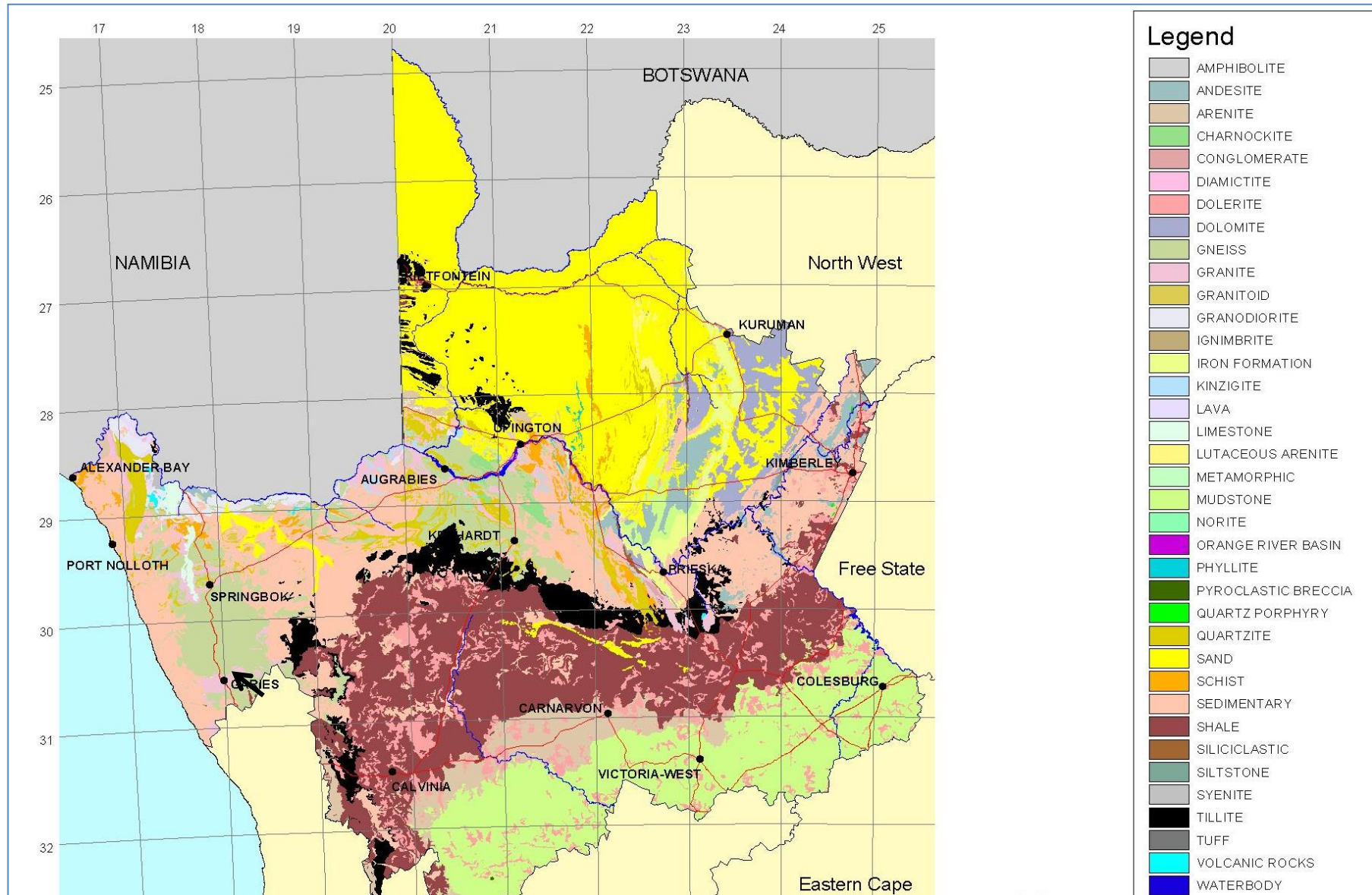
Map 1: Land use patterns of the Northern Cape



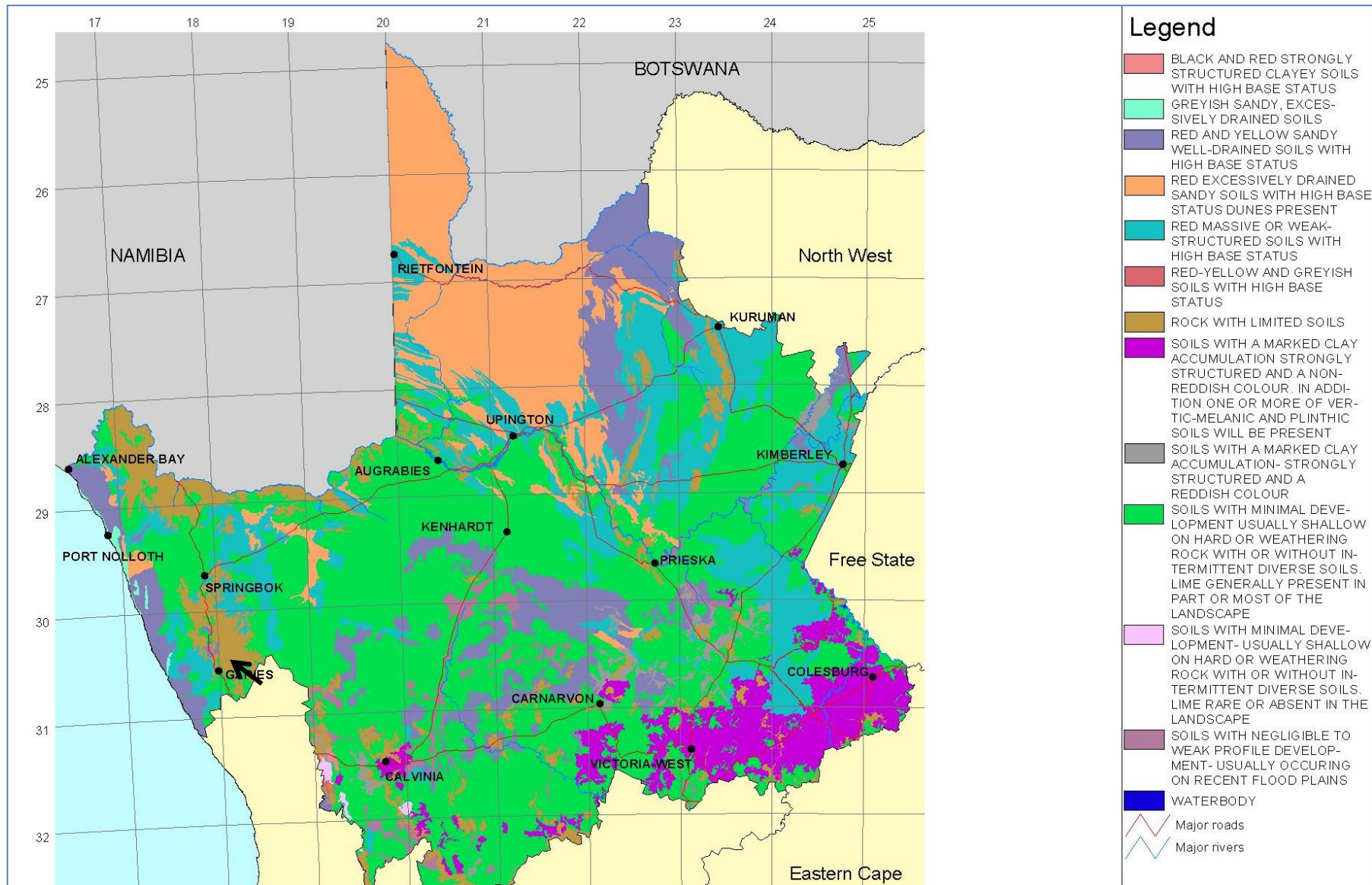
Map 2: Terrain Morphological units of the Northern Cape



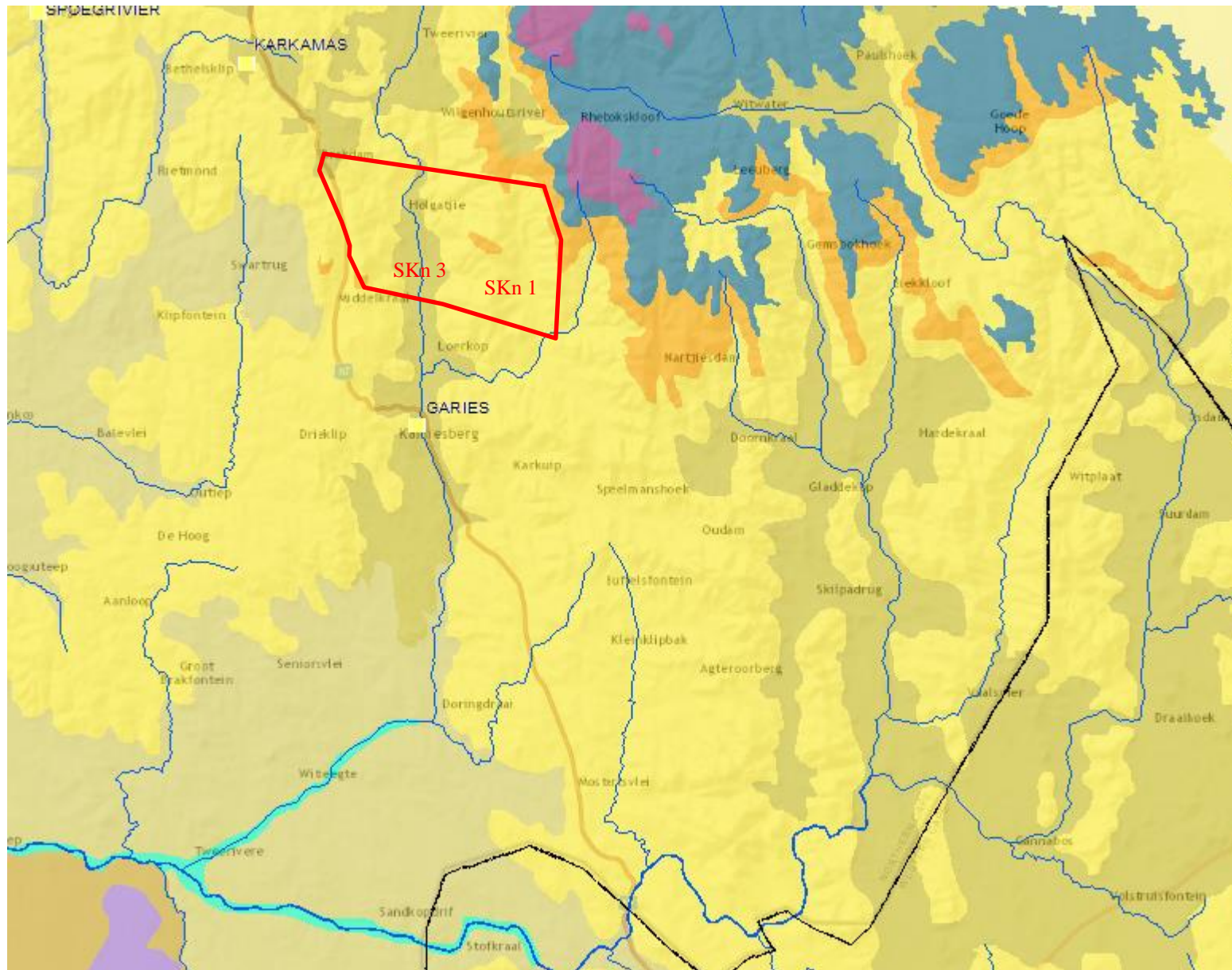
Map 3a: Dominant geological characteristics



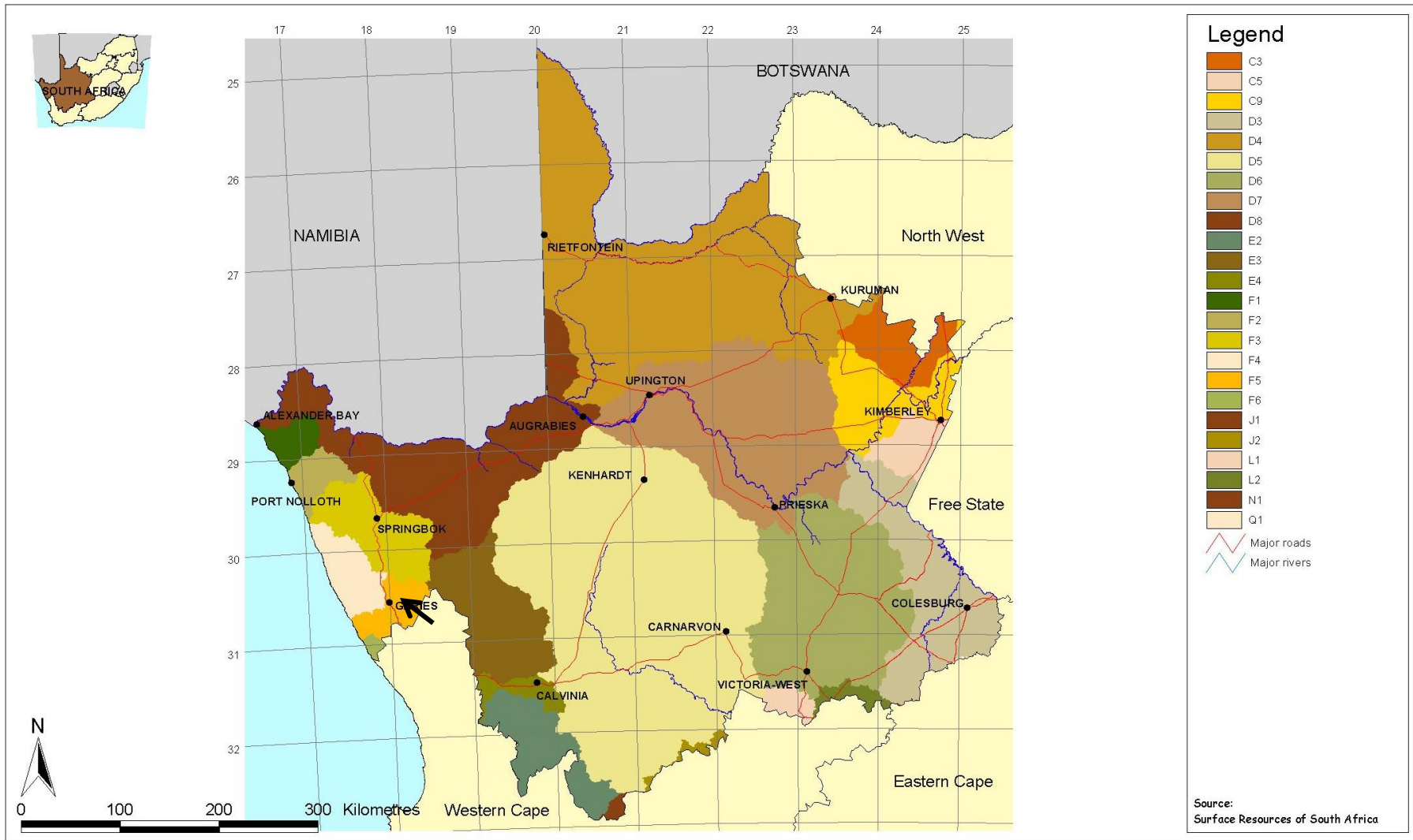
Map 3b: General Soil characteristics



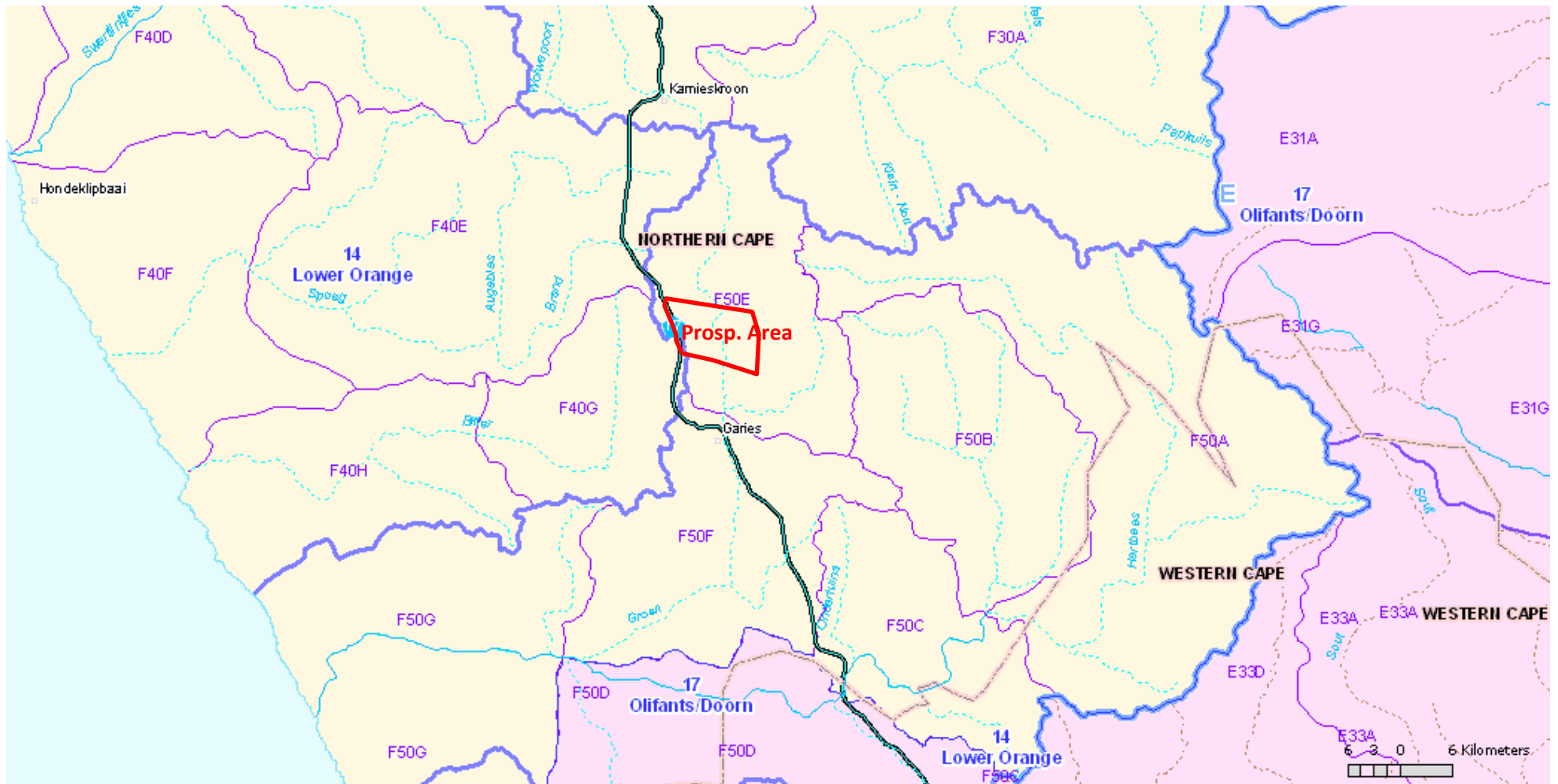
Map 4: Vegetation characteristics



Map 5a: Water catchment areas



Map 5b: Drainage Areas



Groundwater

The majority of municipalities and towns rely on groundwater or local water resources to supply the town with drinking water. Thus, the higher rainfall areas are key recharge zones for these groundwater resources. Consequently, land use management of these catchment areas is critical for the maintenance of the quality and quantity of water sourced from each area. For example, water courses and wetlands that have been cleared for agricultural purposes, or overgrazed, will not only cause soil erosion, but most importantly cause increased water runoff, thus reducing the amount of water that feeds back into the water table for consumption.

The average water level measured at 'rest' in the region is about 80m depending on the season. No water will however be used during the prospecting operation and if this change water will be bought from the local authority or obtained from one of the farms.

Air Quality

The air background quality in Namaqualand is very good due to low industrial activity and very low population density. Given the surrounding extent of semi-desert, dust generation is high under windy conditions (dust storm) however under normal conditions no extreme dust conditions are noted on site.

Noise

Background noise level is the same as for other small settlements. On portions of the prospecting area noise is generated by earth moving equipment and machinery and at present such noise levels are low (observed estimate at ± 55 dBA).

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

Description of potential impacts identified on the cultural heritage environment

According to a Heritage Impact Assessment done near Leliefontein by Professor HJ Deacon the upper Wilgerhout Valley and surrounding hills that include this prospecting contains no archaeological sites. The area includes flats in the valley bottoms that are or have been cultivated. These areas are associated with scattered stock posts, some of which were occupied. This represents the traditional settlement pattern with stock posts occupied and cultivation practiced in a seasonal or longer rotation.

According to the HIA no archaeological sites were located in the wider area although it is probable there are ephemeral traces of stock posts that pre-date modern times. There may also be occurrences of stone artefacts marking San hunter-gatherer encampments. The heritage significance has been classified as medium and the impact as low by the HIA. The mitigation proposed as part of the HIA will also be applicable to this prospecting operation and states that prospecting activities should avoid disturbing stock post locations

Prospecting will mainly consist of non-invasive work with limited drilling and soil sampling and no phase 1 archaeological study is deemed necessary.

Should any fossils be discovered or unearthed in the process of prospecting, the prospecting right holder will contact a South African Museum or University which employs paleontologists so that the necessary paleontological salvage operations can take place. No other heritage resources such as built structures over 60 years old, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict, and cultural landscapes or viewsapes are present on the prospecting area.

Description of potential impacts identified on the socio- economic conditions

The only other land use in the area is small stock grazing and due to the small extends of the prospecting operation there will be no impact on productivity. Any mining operation developed as a result of prospecting operations will however have a positive impact on the socio-economic environment in the form of skills development and job creation. Potential impacts arise as follows through the proposed prospecting activities:

Negative

- Potential impacts on farm integrity: Poaching, stock theft, stock loss (through road kill or gates being left open), security, and road condition deterioration
- Potential impacts on rural settlements: Raise false levels of expectancy, economic concerns if mine / prospect labour arc paid more than farm labour, immigration of workers, drugs etc.

Positive

- Potential for infrastructure development
- Potential for employment opportunity.

Note that should mining go ahead as a result of positive prospecting results then a social and labour plan is required which will address amongst other aspects, the above issues in more detail.

Description of potential impacts identified on: employment opportunities, community health, and community proximity

The prospecting operation itself will not create many employment opportunities but if economic viable ore bodies are discovered the spinoffs due to the larger mining operation will contribute to employment and skills development.

Description of potential impacts identified on the biophysical environment

This impact assessment only deals with significant impacts and as prospecting will mainly consist of non-invasive field work with limited drilling and soil-sampling less than 25 Kg per sampling site the overall impact on the biophysical environment will be insignificant. The implementation of the mitigating and management measures prescribed in the EMP will address all impacts and after implementation of the mitigating measures most impacts can be classified as insignificant.

Drilling

Drilling will have an insignificant impact on the geology as borehole collars will remain. No backfilling will take place therefore mixing of the geological sequence of sediment will not occur.

Due to the shallow nature of operations the impact on the groundwater is considered insignificant. The absence of a waste handling program can however have a significant impact through oil and fuel spills and soil contamination. No process water will be used during prospecting operations or will be purchased from the local authority if needed.

Metallurgical Sampling

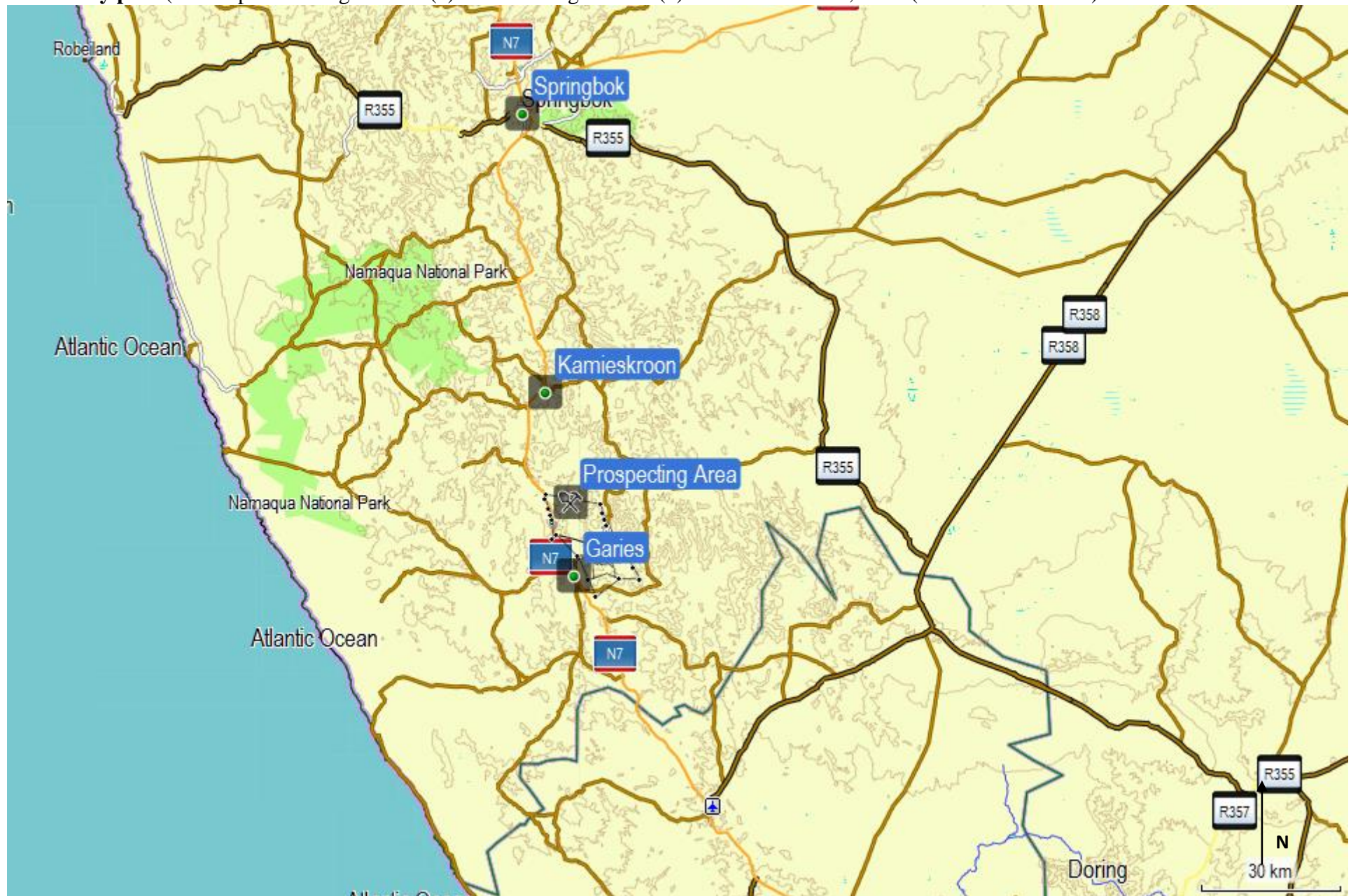
The small volume of soil and stream sampling less than 25Kg per site without the possibility of backfilling will have an insignificant negative impact on the visual aspect of the topography.

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

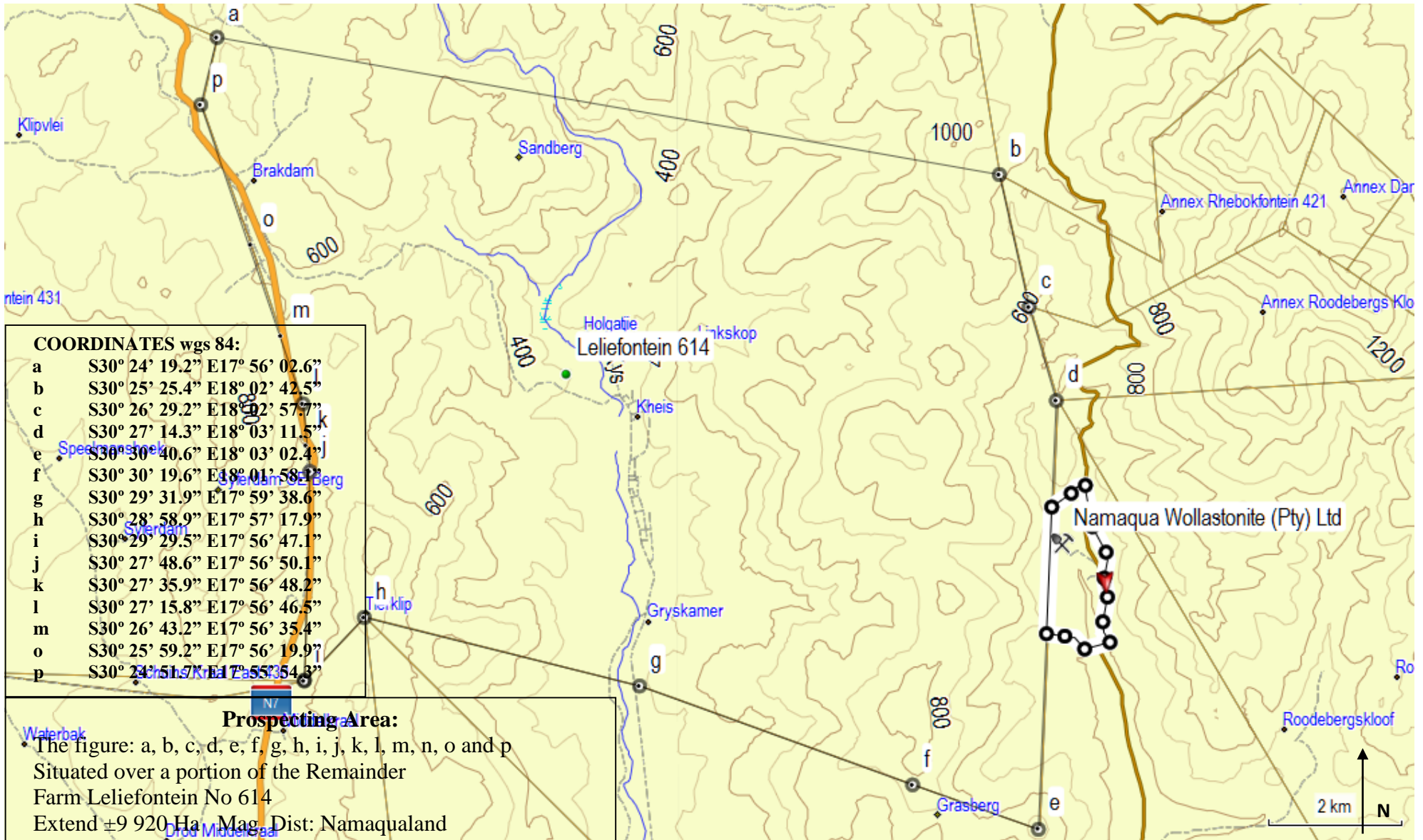
The consultation report was made available to the landowners and all other interested parties for comment. All comments received were addressed in this EMPR.

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

Map 6: Locality plan (contemplated in regulation 2(2) read with regulation 2(3) of the MPRD Act, 2002 (Act No. 30 of 2002)



Map 7: Layout – Prospecting Area (Contemplated in reg 2(2) of the MPRD Act, 2002)



Map 8: Landscape of Prospecting area



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 operation.

2.1.1 Plan of the main activities with dimensions

The plan submitted under paragraph 1.4 show the main land uses on the proposed prospecting area and as can be seen more than 90% of the area is zoned as agricultural or unspecified land use.

With regard to the proposed prospecting activities no additional infrastructure including roads will be constructed that needs to be indicated on the plan.

The main invasive prospecting activity will be drilling. It is impossible to show the spatial location and aerial extent with dimensions of any drill traverses at this stage before the initial non-invasive work has identified potential targets for drilling.

The plans as contemplated in regulation 2.2, of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) will be updated on an annual basis with regard to the actual progress of the establishment of surface infrastructure, prospecting operations and rehabilitation together with an Performance assessment report as contemplated in regulation 55(1) (c) on the implementation of the Environmental Management Plan.

2.1.2 Description of construction, operational, and decommissioning phases

This application employs a phased approach, where the work program is divided into several sequential sections. At the end of each section there will be a brief period of compiling and evaluating results. These results will not only determine whether the project proceeds, but also the manner in which it will go forward. Essentially, the Company will only action the next stage once satisfied with the results obtained. In addition, smaller, non-core parts of the work program will be undertaken if warranted.

Essentially the program can be summarized as:

Phase	Activity	Timeframe
Phase 1	Geological Mapping	2 years
	Geochemical Survey	
	Data Compilation	
Phase 2	Reconnaissance and follow-up Drilling	2 years
	Data Processing	
Phase 3	Pre-feasibility report and resource statement Application for Mining Right or Rehabilitation and closure	1 year

*Drilling denotes RC and diamond / core drilling.

It is not possible to give details of the drilling program before the surveys and surface work is completed. However, it is expected that since there are a number of targets on the property that over 100 drill holes will be necessary for evaluation. In the event that more information becomes available or that an ore body is located at an earlier stage, then an amended program will be put forward for the DMR's approval.

No bulk sampling work is to be carried out during this prospecting program.

Initial prospecting will be carried out by the company itself, utilizing its own in-house geologists and engineers to conduct and oversee the work. Drilling will be outsourced to a local drilling company. The methods detailed below would be used to investigate the prospecting area

Construction phase

No infrastructure or roads will be constructed due to the small scale of operations that will only include field investigations and limited drilling as described in the operational phase below. No processing or bulk sampling will take place that need infrastructure to be constructed.

Operational phase

NON-INVASIVE ACTIVITIES:

Desk top surveys and Geological mapping

Imagery is one of the fields that have shown vast improvements in recent years. Today this is a powerful geological tool capable of providing a range of pertinent information. Newer methods may also show large scale features such as lineaments and fault/fracture patterns not discernable at ground level. Different image methods and suppliers will be evaluated and an appropriate package secured. A follow-up ground geophysical survey may be conducted, if warranted.

The geological surface mapping exercise will be conducted over the property and will include the mapping of the soil/sand overburden and the where accessible, particular attention will be paid to basement lithologies. All geological features will be recorded and all results compiled for correlation purposes.

Geochemical Survey

Stream Sediment Sampling.

The prospecting area is mountainous, drained by numerous gullies, which makes stream sediment sampling an efficient reconnaissance method of exploration. The first phase of stream sediment sampling will entail the sampling of mountain gullies crossed by the farm track. These will be analyzed for wolastonite. Perhaps 50 samples less than 20Kg per sample may be collected during this phase. Follow-up stream sediment sampling upstream of sample sites with anomalous values. This phase may be split up into multiple phases to zoom in on mineralized occurrences. Perhaps 150 additional samples may be collected during this phase.

Soil Sampling.

Soil sampling will be conducted to investigate stream sample anomalies. The number of soil samples collected will be dependent on the degree of success of the stream sediment sampling program, but is expected to be in the 300-500 range. The initial phase of soil sampling will consist of reconnaissance traverses conducted along the banks of gullies adjacent to the peak stream sample values. Soil sample anomalies will be investigated by follow-up soil sampling traverses, progressively further away from the banks of gullies, to outline any geochemical anomalies.

Infill soil sampling at reduced sampling intervals along previous traverses will enable the definition of drilling targets.

Although there is a slight soil disturbance, sampling is view as primarily non-invasive as it is generally restored almost immediately and only a small portion of the sample is removed for assay.

Geophysical Surveys

Geophysical data from previous surveys, airborne and on surface, are available and will be integrated with geophysical and geological data.

Data Compilation

All geological, geochemical, geophysical and topographic information will be captured in electronic format. This will allow for the superimposition of the various layers of information (geology, geophysics and topography) and will form the basis for the interpretation of the information generated, resulting in the further definition of the potential 3D spatial distribution of any mineralization. It will further enable the creation of a GIS database. Upon completion of the data capture, a model will be generated defining the spatial distribution of the bedrock, the ore and the surrounding country rock.

INVASIVE ACTIVITIES:

Drilling

Although two different types of drilling are to be applied to the concession, they both have some common operations. In all instances drilling would be:

- Under close supervision of a geologist
- Conducted along best practice guidelines
- Minimize environmental disturbance

In this area, most of the target horizons are relatively close to surface and hence drillholes should be quite short; in the range of 50 – 100m

RC Drilling

Drilling targets generated during the non-invasive phase will be tested by fairly widely spaced shallow boreholes (average 50 meters/borehole). The number of drilling targets to be tested is yet unknown, but expected to be perhaps 10 (total drilling 500 meters). Further investigation of those drilling targets, where the initial drilling results are encouraging. The borehole depths during this phase will be relatively shallow as well: along strike follow-up boreholes to approximately 50 meters, and a few down-dip boreholes to some 100 meters depth. (Say) 20 boreholes totaling 1200 meters.

Cuttings (approaching 100% recovery) will be collected by cyclone in standard elongated plastic bags in 1m samples, from which representative samples for assay purposes (500 gram) will be separated by a standard sampling method. The remaining cuttings (20-25 kg/meter) will be stored for metallurgical tests at a later stage. All samples with visible mineralization will be assayed for wollastonite. Trace constituents will only be determined for selected samples with proven ore grades. Routine assaying will be conducted at regular intervals along portions of boreholes where no visible

mineralization is observed. Logging of boreholes will be conducted on the entire boreholes before being sampled for assaying.

Diamond Drilling

It is hoped to be able to employ more sophisticated drill rigs which can switch between RC and diamond drilling. These have advantages in speed and costs. Core drilling, being considerably slower and more expensive, will be used as a target follow-up method where more precise information is needed on geological features, underground conditions and grades.

One borehole will be drilled for each ore-body defined by R.C.-drilling for petrological studies, to identify the minerals present and the size range of mineral grains, which needs to be known for metallurgical purposes. These samples will be split and quartered where assaying is warranted. One quarter will be dispatched to the assay lab, one quarter kept for a permanent record, and the halves utilized for petrological studies.

Borehole collars will be covered by numbered slabs, and the position measured by GPS. No down-hole surveys will be necessary, as the deviation of boreholes would be negligible at the planned shallow depths of drilling. Collars would be marked with a numbered and dated steel peg and exact positions recorded on a GPS. All sites are rehabilitated and photographed. Since it generates a larger and more precise sample it is also key for preparing any metallurgical samples.

Metallurgical Sampling

This would be scheduled towards the end of the programme as it requires the completion of the drilling to generate most of the sample. This sample must be carefully prepared to cover all different ore types and a proportional composite for test work and grade determination.

R.C.-sampling generates 20-25 kg/meter drilled (10cm diameter boreholes), of which only a small fraction is needed for assaying. The mineralized portions of boreholes, as indicated by assay results, should provide sufficient material for metallurgical purposes. If necessary, more borehole cuttings can be obtained by drilling additional R.C.-boreholes.

The samples would undergo pilot scale investigation to determine optimal crushing, screening, and floatation characteristics. This work would be carried out off site, probably at a metallurgical laboratory in or around Johannesburg.

Grade information will be generated to verify the earlier sampling results by treating samples through the smaller scale recovery circuit utilizing the same method as would be considered for commercial operations. The same information would be used to size the process plant and to select equipment. Layout and location would be designed in such a manner as to minimize any visual or environmental impact.

PRE-/FEASIBILITY STUDIES

Any programme such as this culminates with an overall completion study and in this case the objective would be to provide a pre-feasibility study at a suitably detailed level for planning and to enable the commencement of financing and funding.

During the final year all data needs to be compiled, interpreted, summarized and evaluated in a final report. Several additional studies will need to be completed in order for an informed decision to be made on whether or not to proceed with development. Aside from all the information already discussed, expert input is frequently required in geohydrology, rock mechanics, statistical grade distribution, pyro- or hydro-metallurgy and other specialized fields. In addition, extra specialized studies have been allowed for to cover provision of services (power, water, labour), logistics, consumables, and all other items necessary in a pre-feasibility study. Consequently while others costs decline in the final year, the cost of consultants is increased as much of the work is traditionally outsourced – both as an independent verification and because few companies can keep so many specialist talents on their books.

A direct follow on from the report is the ability to start looking at various funding alternatives, be they private, public or listed. In mine development it is normal because of the amounts of money involved that the latter two sources of finance predominate. These avenues often require separate reporting and the creation of relationships with key financial advisors, stockbrokers and fund managers. It is envisaged that the company would most likely follow a stock exchange listing route but the detail of this can only be determined later.

Decommissioning phase

Regulations 56 to 62 outline the entire process of mine closure, both as a guide to the process to be followed for mine closure, and also to address the legal responsibility with regard to the proper closure of operations. 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 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).

"An application for a closure certificate must be accompanied by an environmental risk report which must include-

- (a) the undertaking of a screening level environmental risk assessment where-
- (b) the undertaking of a second level risk assessment on issues classified as
- (c) assessing whether issues classified as posing potential significant risks are acceptable without further mitigation;
- (d) issues classified as uncertain risks be re-evaluated and re-classified as either posing potential significant risks or insignificant risks;
- (e) documenting the status of insignificant risks and agree with interested and affected persons;
- (f) identifying alternative risk prevention or management strategies for potential significant risks which have been identified, quantified and qualified in the second level risk assessment;

(g) agreeing on management measures to be implemented for the potential significant risks which must include-

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

With regard to listed activities in terms of the Environmental Impact Assessment Regulations Listing Notice 1 of 2014, the competent authority in respect of the activities listed is the environmental authority in the province in which the activity is to be undertaken, unless - (b) the activity is to be conducted in or on a mining area or is to transform the area where the activity is to be conducted into a mining area in which case the competent authority is the Minister of Minerals and Energy. In this case all activities are to take place within a prospecting area therefore all activities will be covered by this EMPR.

2.2 Identification of potential impacts

2.2.1 Potential impacts per activity and listed activities

Prospecting will mainly consist of non-invasive field work with limited drilling and soil-sampling less than 25 Kg per sampling site the overall impact on the biophysical environment will be insignificant. The implementation of the mitigating and management measures in paragraph 3.2 will address all impacts and after implementation of the mitigating measures most impacts can be classified as insignificant. The following is a summary of the expected impacts of the operation (in terms of spatial disturbance):

Access Roads and Tracks-

Use of existing roads is emphasized. Formal roads (i.e. with imported material) will only be developed over short distances if at all where traffic exceeds a very nominal amount, as experience by farmers has shown that tracks quickly become degraded to such an extent to be impassable with the result that drivers develop new tracks next to the affected tracks thereby exacerbating the damage. Access requirements will generally be catered for by narrow tracks (with no topsoil removal).

Drilling

Drilling will have an insignificant impact on the geology as borehole collars will remain. No backfilling will take place therefore mixing of the geological sequence of sediment will not occur.

Due to the shallow nature of operations the impact on the groundwater is considered insignificant. The absence of a waste handling program can however have a significant impact through oil and fuel spills and soil contamination. No process water will be used during prospecting operations or will be purchased from the local authority if needed.

Metallurgical Sampling

The small volume of soil and stream sampling less than 25Kg per site without the possibility of backfilling will have an insignificant negative impact on the visual aspect of the topography. This impact assessment only deals with significant impacts and as prospecting will mainly consist of non-invasive field work with limited drilling and soil-sampling less than 25 Kg per sampling site the overall impact on the biophysical environment will be insignificant. The implementation of the mitigating and management measures prescribed in the EMP will address all impacts and after implementation of the mitigating measures most impacts can be classified as insignificant.

2.2.2 Potential cumulative impacts

The only identified land use is small stock grazing and due to the temporarily nature of change in land use and small scale of the operation prospecting will not have any impact and the land will revert back to its former use grazing with no impact on production.

2.2.3 Potential impact on heritage resources

Prospecting will mainly consist of non-invasive work with limited drilling and soil sampling and given the extent of the mining activities on site to date no phase 1 archaeological study is deemed necessary.

Should any fossils be discovered or unearthed in the process of prospecting, the prospecting right holder will contact a South African Museum or University which employs paleontologists so that the necessary paleontological salvage operations can take place. No other heritage resources such as built structures over 60 years old, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict, and cultural landscapes or viewsapes are present on the mining area.

2.2.4 Potential impacts on communities, individuals or competing land uses

The only identified land use is small stock grazing and due to the temporarily nature of change in land use and small scale of the operation prospecting will not have any impact and the land will revert back to its former use grazing with no impact on production. The area is farmland that is not close to any settlement therefore no land development projects are in progress.

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

No proposals were received during the consultation process due to the non-invasive nature of the prospecting operation and as the proposed operation is situated within an area that was disturbed by previous mining operations.

2.2.6 Confirmation of specialist report appended.

No specialist reports are deemed necessary as no sensitive areas are included in the proposed area and due to the non-invasive nature of the proposed project.

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

Early phases of prospecting will have minimal impact on the environment and hence little rehabilitation should be necessary. Fortuitously, this area is duplicated by large tracts of land on all sides which offer the same habitat to fauna and flora. It is also partly covered by sand and the prospecting is of such a nature that for the initial work there will be minimal change to the original land surface. Consequently there are no foreseen major environmental issues and no expectation of longer term impacts in phase 1.

Phase 2 would be more invasive but still only to a relative small extent and the impact would be minimized through proper supervision. Drill rigs would utilize existing roads and strong control exercised over oil usage and sump pools. Impervious sheeting would be laid underneath the rig and sump areas to catch any spills and the contaminated ground removed to an approved dump site. Original soils would finally be spread over each drill location. Overall the disturbance to the land surface would be minimal and the drilling itself only removes a very small amount of ground for sampling and assay.

Photo 1: Typical Truck mounted RC drill with onboard compressor



3.1.1 Criteria of assigning significance to potential impacts

The impact on each of the aspects is measured according to the following table of significance:

Negative	
Significant	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	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	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	Improvements in local socio-economics
Significant	Major improvements in local socio-economics with some regional benefits

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

Construction phase

No construction activities therefore no potential impact. No infrastructure or roads will be constructed due to the small scale of operations that will only include field investigations and limited drilling as described in the operational phase below. No processing or bulk sampling will take place that need infrastructure to be constructed.

Operational phase

Initial prospecting will consist of non-invasive activities that will have no impact on the environment. Initial prospecting will include Aerial surveys, Geological Mapping, Geochemical Survey, Geophysical Surveys and Data Compilation. The latter part of the operation will include limited invasive activities in the form of drilling and metallurgical sampling.

Geology

Significance/Magnitude	Duration	Probability	Timing
Low	Permanent	Certain	Activity

Drilling will have an insignificant impact on the geology if borehole collars and sumps will remain. No backfilling will take place therefore mixing of the geological sequence of sediment will not occur.

Ground water

Significance/Magnitude	Duration	Probability	Timing
Medium	Point	Unlikely	Activity

Due to the shallow nature of operations the impact on the groundwater is considered insignificant. The absence of a waste handling program can however have a significant impact through oil and fuel spills and soil contamination. No process water will be used during prospecting operations or will be purchased from the local authority if needed.

Topography

Significance/Magnitude	Duration	Probability	Timing
Low	Long term	Certain	Activity

The small volume of soil and stream sampling less than 25Kg per site without the possibility of backfilling will have an insignificant negative impact on the visual aspect of the topography.

Decommissioning phase

Successful implementation of the Environmental Management Program during the life of the mine will cover all the significant aspects affecting the environment.

3.1.3 Assessment of potential cumulative impacts.

The only identified land use is small stock grazing and due to the temporarily nature of change in land use and small scale of the operation prospecting will not have any impact and the land will revert back to its former use grazing with no impact on production.

3.2 Proposed mitigation measures to minimise adverse impacts.

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

Possible risk factor	Qualitative impact level	If Insignificant, Why?
<i>Geology:</i>	None	No excavations will be done
<i>Topography (Safety):</i>	Potential significant impact	Borehole sumps remaining on site of about 25m ² each will require mitigation
<i>Land Capability:</i>	Insignificant	In the overall scheme of the surrounding landscape, any remaining sumps of 25m ² per sump is minor and the remaining impact in this regard is insignificant
<i>Soil:</i>	Insignificant	Soil erosion will pose no risk

<i>Vegetation:</i>	Insignificant	Due to the low rainfall the establishment of invader species and other exotic plants poses no risk.
<i>Fauna.</i>	Insignificant	Minimal risk given the low density of fauna and the fact that the habitat is well represented in the adjacent area for dispersal.
<i>Surface water.</i>	Insignificant	No surface water present on the site. The hydrological integrity of drainage channels will not be altered by attenuating or diverting any of the natural flow.
<i>Groundwater.</i>	Insignificant	Only shallow boreholes will be drilled and no groundwater will be used on site.
<i>Air Quality:</i>	Insignificant	Isolation of site and small scale of operation precludes any impact in this regard No FRD will be created on site and no loading and hauling will take place.
<i>Noise</i>	None	No activities except for the drilling operation that will be within the norm.
<i>Archaeology:</i>	None	No excavations will take place
<i>Visual Impact:</i>	Potential significant impact	Borehole sumps remaining on site of about 25m ² each will require mitigation

3.2.1 Concomitant list of appropriate technical or management options

The goal of rehabilitation with respect to the area is to leave the area level and even, and in a natural state containing no foreign debris or other materials. All scrap and other foreign materials will be removed and disposed of as in the case of other refuse whether these accrue directly from the prospecting operation or are brought on to the site from outside.

Assuming that 100 boreholes will be present at any given time, 100 sumps will be rehabilitated. At 25m² per sump the total surface disturbance will be 2 500m² (0.25 ha).

As stipulated in drilling contracts the drilling contractor is obliged to rehabilitate each site immediately after the completion of each borehole.

RC drilling does not require sumps, as it is a dry operation. The samples are collected completely in large bags attached to the cyclone. From past experience in this region rain and wind eliminates all signs of prospecting activities within one season, except the drill collars, which are protected by cement markers until the end of the prospecting period.

Drilling equipment will only be used during the second phase depending on the outcome and results of phase 2. This machinery will not be extensively repaired in any place other than in the workshop available in any one of the two major towns. No infrastructure will be constructed during prospecting.

Bore hole sites are GPS located and pegged with a steel dropper. The site is inspected and photographed prior to any disturbance. A drill pad is then cleared, keeping disturbance to the native vegetation to an absolute minimum. Any topsoil removed is stored separately for later reuse. Plastic lining to prevent oil spillage is used under the rig. The area is cordoned off. After the drilling operation is complete, each borehole collar is surveyed and the site is rehabilitated and photographed. The retained topsoil is used to fill any sumps. Any spoils or drilling material is transported off site and disposed of in an approved area.

Fuel for the drilling equipment will be stored in mobile tanker trailer. Accidental spills will be cleaned up immediately by removing the spillage together with the polluted soil and by disposing of them at a recognised facility. Equipment used in the prospecting process will be adequately maintained so that during operations it does not spill oil, diesel, fuel, or hydraulic fluid.

Ancillary prospecting requirements

The following are other aspects of the operation that could result in environmental impact if not properly controlled or specified.

Roads & Tracks

a) Formal roads: Farm tracks quickly deteriorate should they experience more than the minimum traffic. The result is that drivers leave the deteriorated track and drive in the veld next to the track, causing extensive damage to the veld. In order to prevent such damage, these "well-traveled" routes will have to be armored with imported material. No new roads are likely to be affected by such armoring.

b) Tracks are less formal than roads and will result where very little traffic will be required, for instance, along the small diameter drill line traverses. Existing farm tracks will be used where possible. Any new tracks will not have topsoil removed but will be rehabilitated through a single pass of a 2 toothed scarifier (avoiding disturbance of the "middelmannetjie") only after consultation with the farmer.

Central Camp Site:

Operations will be run from Garries.

Domestic Waste Management Facilities:

Each prospecting site must be provided with a bin. Refuse will be removed daily from that bin for transport to the municipal dumping site.

Oil/Fuel Leak Management:

Fuel receipt, storage and dispensing:

In the management of fuel supply, receipt, storage and use, the following procedures will be followed, cautions taken and facilities built to properly manage this operational sector:

- The fuel delivery bowser driver will be cautioned to adhere to safe driving speeds and drive cautiously.
- During dispensing of fuel to other facilities (plant and other tanks) or field vehicles via tanker, the dispensing vehicle is to be fitted with suitable pumps and funnel extensions to reduce the risk of spillage in the transfer of fuels.

On site repairs

No workshops will be required at the prospect and all scheduled servicing will take place at workshop facilities in one of the nearby towns.

Emergency repairs on site:

In the event of a breakdown repair being required in the field, the staff should be trained 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 return to the used oil and lubricant storage area which is to be constructed as shown above. Used filters are not to be buried at the site of repair (nor discarded in the excavation to be backfilled).
- In the event of soil contamination, the soils are to be treated with a suitable decontaminant such as the OT8 product range or Spillsorb or similar product.

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
- Neutralization of oil leaks on the concrete apron,
- The operation of the oil trap (including the storage of trapped oil); and
- Use of OT8/Spillsorb products.

General Provisions

- All operators are to check their equipment for leaks and report such leaks on a daily basis.
- No used oils are to be used as dust suppressants on maneuvering areas.

All staff to be instructed to report oil spills immediately and be trained in firefighting and the use of biodegradable solvents such as OT8 or Spillsorb or similar products in the clean-up operation

Potable Water

Potable water will be bottled and brought to site by the employees as required from the logistical facility.

3.2.2 Review the significance of the identified impacts

The table below uses the potential significant impacts as identified in paragraph 3.2.1 and applies them to the proposed mitigation measures in paragraph 3.2.2.

Topography and Visual Impact:	<p>Insignificant risk (after decommissioning/rehabilitation is completed):</p> <p>Decommissioning rehabilitation entails the effective shaping of the final faces of the sump with erosion control facilities above all edges. The excavation will form an even depression that is stable and that will not be detrimental to the safety and health of humans and animals and that will not pollute the environment or lead to the degradation.</p>
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4 REGULATION 52 (2) (d): Financial provision.

4.1 Plans for quantum calculation purposes.

The main invasive prospecting activity will be drilling that will take place according to traverses. It is impossible to show the spatial location and aerial extent with dimensions of any drill traverses at this stage before the initial non-invasive work has identified potential targets for drilling (also refer 2.1.1) but a tentative layout is indicated on the work plan below.

4.2 Alignment of rehabilitation with the closure objectives

The goal of rehabilitation with respect to the area where drilling will take place is to leave the area level and even, and in a natural state containing no foreign debris or other materials.

All scrap and other foreign materials will be removed from the area and disposed of as in the case of other refuse, whether these accrue directly from the prospecting operation or are brought on to the site.

Removal of these materials shall be done on a continuous basis and not only at the start of final rehabilitation and closure.

The small amount of overburden from the drill pads will be back filled into the holes and covered with topsoil. The area will be profiled to blend in with the topography of the surrounding environment.

The mitigating measures described in paragraph 3 are compatible with these closure objectives.

4.3 Quantum calculations.

The area will be rehabilitated with the original land use namely small stock farming in mind and the productivity of the area after closure will be the same as before prospecting operations started. Rehabilitation cost is estimated with the proposed end-state in mind and although the applicant has his own equipment and rehabilitation will take place concurrent with prospecting the tariffs for equipment was based on local hiring tariffs in Garies the closest town.

Rehabilitation of access roads

No access roads or infrastructure will be constructed only existing farm roads will be used.

Rehabilitation of the office/camp site

No permanent structure will be build and all operations will be run from Garies or Springbok.

Rehabilitation of vehicle maintenance yard and secured storage areas

No vehicle maintenance yard or secure storage areas will be constructed as infrastructure is available in Garies or Springbok.

Rehabilitation of surface disturbance drill pads

The goal of rehabilitation with respect to the area where drilling has taken place is to leave the area level and even containing no foreign debris or other materials.

All scrap and other foreign materials will be removed from the site and disposed of as in the case of other refuse whether these accrue directly from the prospecting operation or are brought on to the site from outside.

All drill holes will be back filled. Once the overburden have been profiled the topsoil previously stored, will be returned and the total area will be profiled with acceptable contours and erosion control measures. This estimation is based on 100 drill sumps of 25m² each. The exact number of traverses and holes will only be known after

completion of initial prospecting and the layout plans and rehab estimate will be updated before commencing with invasive prospecting.

Extent:	2 500m ²
Duration of rehabilitation: 2 holes per day	50 days
Equipment require:	
Manual labor @ R500.00/day for backfilling and profiling	R 25 000.00
Cost of rehabilitation:	R 25 000.00
Final rehabilitation	

All equipment and other items used during the prospecting period must be removed from the site. Waste material of any description, including receptacles, scrap, rubble and tyres, must be removed entirely from the mining area and disposed of at a recognised landfill facility. It will not be buried or burned on the site.

Extent:	1Ha
Duration of rehabilitation:	5 days
Equipment required:	
Manual labor @ R500.00/day for clean-up	R 2 500.00
Cost of rehabilitation:	R 2 500.00

The applicant is willing to escalate the total estimated amount of R 27 500.00 that is needed for rehabilitation to R30000.00 that is more than is needed for the rehabilitation of damage caused by the operation, both at sudden closure during the normal operation of the project or at final, planned closure.

4.4 Undertaking to provide financial provision

Financial provision required under Regulation 54 for the amount of R 30 000.00 will be furnish to DME. The quantum will be updated again within a year or at a shorter interval if there is any deviation from the prospecting work program.

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

5.1 List of identified impacts requiring monitoring programmes.

None of the impacts identified required specific monitoring programs but inspections and monitoring shall be carried out on both the implementation of the program and the impact on the natural and cultural environment. Visual inspections on erosion and physical pollution shall be carried out on a regular basis together with fixed point photography.

5.2 Functional requirements for monitoring programmes

Every aspect of the operation must be checked against the prescriptions given in this document and if find that certain aspects are not addressed or impacts on the environment are not mitigated properly, the identified inadequacies will be rectified immediately.

Regular monitoring of all the environmental management measures and components shall be carried out to ensure that the provisions of this program are adhered to.

Layout plans will be updated on a regular basis and updated copies will be submitted on an annual basis to the Regional Manager. The plans will also be updated before commencing with drilling and the rehabilitation quantum will also be updated.

Reports confirming compliance with various points identified in this program will be submitted to the Regional Manager on an annual basis together with an update of the rehabilitation cost. Any emergency or unforeseen impact will be reported as soon as possible. An assessment of environmental impacts that were not properly addressed or were unknown when the program was compiled shall be carried out and added as a corrective action.

5.3 Roles and responsibilities for the execution of monitoring programmes

The project manager will be responsible for monitoring and Reports confirming compliance with various points identified in the environmental management program.

5.4 Committed time frames for monitoring and reporting

The project manager must on a bi-monthly basis, check every aspect of the operation against the prescriptions given in this document and, if find that certain aspects are not addressed or impacts on the environment are not mitigated properly, the project manager must rectify the identified inadequacies immediately.

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

6.1 Rehabilitation plan

The main invasive prospecting activity will be drilling as indicated on the plan in 4.1 above. It is impossible to show the spatial location and aerial extent with dimensions of any drill traverses at this stage before the initial non-invasive work has identified potential targets for drilling (also refer 2.1.1).

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

The environment affected by the prospecting operations shall be rehabilitated, as far as is practicable, to its natural state. Land use will be the same as before prospecting with the same production with regard to grazing by livestock. The affected environment shall be maintained in a stable condition that will not be detrimental to the safety and health of humans and animals and that will not pollute the environment or lead to the degradation thereof.

The goal of rehabilitation with respect to the area where drilling will take place is to leave the area level and even, and in a natural state containing no foreign debris or other materials.

All scrap and other foreign materials will be removed from the area and disposed of as in the case of other refuse, whether these accrue directly from the prospecting operation or are brought on to the site.

Removal of these materials shall be done on a continuous basis and not only at the start of final rehabilitation and closure.

The small amount of overburden from the drill pads will be back filled into the holes and covered with topsoil. The area will be profiled to blend in with the topography of the surrounding environment.

The mitigating measures described in paragraph 3 are compatible with these closure objectives.

6.3 Confirmation of consultation

A copy of the consultation report that includes environmental objectives in relation to closure was made available to the landowner and all other interested parties for comment. All comments received were addressed in this EMPR.

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

7.1 Identification of interested and affected parties.

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

The Farm Leliefontein No 614 is registered in the name of the Nasionale Behuisingsraad by virtue of title deed T43005/1992 and the community of Leliefontein and Kheis represented by the Local authority Kammiesberg Municipality was identified as the landowner/lawful occupier.

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

The Farm Leliefontein No 614 is registered in the name of the Nasionale Behuisingsraad by virtue of title deed T43005/1992 and the community of Leliefontein and Kheis is the lawful occupiers.

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

No, the property is managed by the local authority for and on behalf of the local community of Leliefontein and Kheis.

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

No land claim is registered against the property.

7.1.5 Name the Traditional Authority identified

No Traditional Authority only local municipality

7.1.6 List the landowners identified by the applicant.

The Farm Leliefontein No 614 is registered in the name of the Nasionale Behuisingsraad by virtue of title deed T43005/1992 and the community of Leliefontein and Kheis is the lawful occupiers.

7.1.7 List the lawful occupiers of the land concerned.

The Farm Leliefontein No 614 is registered in the name of the Nasionale Behuisingsraad by virtue of title deed T43005/1992 and the community of Leliefontein and Kheis is the lawful occupiers.

7.1.8 Explain whether or not other persons' socio-economic conditions will be directly affected by the proposed prospecting or operation

The only other land use in the area is small stock grazing and due to the small extends of the operation there will be no impact on productivity. Prospecting will mainly consist of non-invasive activities with limited drilling, and the only impact on the socio-economic conditions will be positive through limited job creation.

7.1.9 Submit evidence that the landowner or lawful occupier of the land in question, and any other interested and affected parties were notified.

Consultation has taken place by means of registered personal communication with the local authority as landowner and representing the broader community of the region. A letter to this regard is attached as an appendix.

All other interested parties were invited to comment on the proposed project by means of an advertisement in the local newspaper, clipping attached as an appendix.

All comments were supposed to be directed to the regional director DMR with copies to the applicant.

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.

A copy of the PWP and the consultation report (consultation template) was supplied and or explained to them.

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

No views or comment received

7.2.3 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

No views or comment received

7.2.4 Other concerns raised by the aforesaid parties

No views or comment received

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

The landowners are deemed the only affected party and consultation has taken place by means of personal communication. Letters to this regard is attached.

7.2.6 Information regarding objections received.

No objections against the proposed prospecting operation that need to be dealt with by the REMDEC committee were received. All comments received were addressed as part of the EMP.

7.3 The manner in which the issues raised were addressed.

No objections against the proposed prospecting operation received

7.3.1 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

No views or comment received

7.3.2 Other concerns raised by the aforesaid parties

No views or comment received

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

8.1 Employee communication process

General environmental awareness will be fostered among the project's workforce to encourage the implementation of environmentally sound practices throughout its duration. This will ensure that environmental accidents are minimized and environmental compliance maximized.

Environmental awareness will be fostered in the following manner:

- a) Induction course for all workers on site, before commencing work on site.
- b) Refresher courses as and when required
- c) Daily toolbox talks at the start of each day with all workers coming on site, where workers can be alerted to particular environmental concerns associated with their tasks for that day or the area/habitat in which they are working.
- d) Taking part in national and international environmental campaigns like National Marine Week, National Harbour Day, National Wetlands Day etc.
- e) Displaying of information posters and other environmental awareness material in the general assembly points.

8.2 Description of solutions to risks

Specific environmental awareness performance criteria will form part of the job descriptions of employees, to ensure diligence and full responsibility at all levels of the organisational work force.

General environmental awareness will be fostered among the project's workforce to encourage the implementation of environmentally sound practices throughout its duration. This will ensure that environmental accidents are minimized and environmental compliance maximized.

8.3 Environmental awareness training.

The goal of training is to enable a shared understanding and common vision of the environment, the impact of a mining operation on the environment (and why this is important) and the role of mining personnel in terms of environmental management and compliance.

The induction course will consist of the following steps:

- The first step will include background discussion of the environment concept: of what it comprises and how we interact with it.
- The second step will be a description of the components and phases of the specific mining operation.
- The third step will be a general account of how the mining operation and its associated activities can affect the environment, giving rise to what we call Environmental Impacts.

- The fourth and most important step will be a discussion of what staff can do in order to help prevent the negative environmental impacts from degrading our environment. This is known as Environmental Impact Management.

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

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

Refer to section 4 that covers regulation 52 (2) (d) that handles with financial provision.

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

This amount was provided for in the cost estimate for the implementation of the PWP and proof of access to the necessary funds were supplied with the prospecting work program.

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	Chris Hendrik Mulder
Identity Number	580627 5008 089

-END-