



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

FINAL
ENVIRONMENTAL IMPACT ASSESSMENT REPORT

AND

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AND THE NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT, 2008 IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED).

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FILE REFERENCE NUMBER SAMRAD: NC 30/5/1/1/2/12091 PR

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1. IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended), the Minister must grant a prospecting or mining right if among others the mining “will not result in extensive, unacceptable pollution, ecological degradation or damage to the receiving environment”.

Unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact Assessment and an Environmental Management Programme report in terms of the National Environmental Management Act (Act 107 of 1998), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment. In terms of section 16(3)(b) of the EIA Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the Competent Authority and in terms of section 17 (1) (c) the competent Authority must check whether the application has taken into account any minimum requirements applicable or instructions or guidance provided by the competent authority to the submission of applications.

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or a permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorisation being refused.

It is furthermore an instruction that the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report

is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the applicant.

2. OBJECTIVES OF THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

The objective of the environmental impact assessment process is to, through a consultative process-

- (a) determine the policy and legislative context within which the activity is located and document how the proposed activity complies with and responds to the policy and legislative context;
- (b) describe the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
- (c) identify the location of the development footprint within the preferred site based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on geographical, physical, biological, social, economic, heritage and cultural aspects of the environment;
- (d) determine the-
 - i. nature, significance, consequences, extent, duration and probability of the impacts occurring to inform identified preferred alternatives; and
 - ii. degree to which these impacts-
 - (aa) can be reversed;
 - (bb) may cause irreplaceable loss of resources, and
 - (cc) can be avoided, managed or mitigated
- (e) identify the most ideal location for the activity within the preferred site based on the lowest level of Environmental sensitivity identified during the assessment;
- (f) identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity;
- (g) identify suitable measure to manage, avoid or mitigate identified impacts; and
- (h) identify residual risks that need to be managed and monitored

Executive summary

Introduction

Ndi Geological Consulting Services (Pty) Ltd is appointed by Rednax Investment (Pty) Ltd as the Environmental Assessment Practitioner (EAP) to undertake the Environmental Impact Assessment for the proposed prospecting activities on the Farm Steinkopf 22 in Northern Cape.

The proposed prospecting triggers activities that are contained on the 2014 Environmental Impact Assessment Regulations (Government Notice 983, Government Notice 984 and Government Notice 985 of 4th of December 2014) and thus a Scoping and Environmental Impact Assessment Process is required. Furthermore, as the project occurs within a regulated area of a watercourse and involves abstraction of water, it triggers activities that are listed under Section 21 (a), (c) and (i) of the National Water Act (Act No. 36 of 1998). As such an Integrated Water Use Licence (WULA) application process will also be required.

Ultimately, the Feasibility Study that was conducted found that the Farm Steinkopf 22 is the most favourable option to conduct the proposed prospecting activities and as such the proponent applied for prospecting right only on the Farm Steinkopf 22.

The study area

Farm Steinkopf 22 is located in the Northern Cape Province of South Africa, approximately 45 Km NNW of Springbok. The Sand and Aggregate deposit of the Farm Steinkopf 22 is clearly visible from the main road. The topographical features of the application area is characterised by flat area with hills or mountainous area where aggregate is deposited and an old valley that runs across part of the affected or the application area. The study area is described as arable and potential grazing land. The grazing capacity of the area is not known.

PART A

3. SCOPE OF ASSESSMENT AND ENVIRONMENTAL IMPACT ASSESSMENT REPORT

3.1 Contact person and correspondence address

a) Details of

(i)Details of the EAP

Name of The Practitioner: N. Mofokeng

Tel No:0538420687

Fax No:086 538 1069

E-mail address:atshidzaho@gmail.com

(ii)Expertise of the EAP

(1) The qualification of the EAP

(with evidence)

University of Venda

BSc (Hons) Earth Sciences in Mining and Environmental Geology

(2) Summary of the EAP's past experience

(In carrying out the Environmental Impact Assessment Procedure)

Ndivhudzannyi (Ndi) graduated with an Honours degree in Earth Science majoring in Mining and Environmental Geology. She is a self-motivated and hardworking Geologist with 8 years' experience in the environmental, mining exploration, open cast work and consulting in the mining industry. She has proven leadership skills from supervising exploration rigs (Reverse Circulation and Percussion Drilling). Proven field experience in exploration i.e., mapping, borehole logging, borehole sampling, sample preparation for laboratory analysis and supervisory duties in the field. Ndivhudza also has experience in writing geological reports including Prospecting Work Programmes (PWP). Mining Work Programmes, Scoping Reports and EIA Reports, and handling of DMR documents in general. She has conducted environmental audits for mines. Ndivhudza's expertise also extends across annual reporting assessment, environmental authorizations and conducting public participation processes.

Please refer to Appendix B for a copy of the EAP's Curriculum Vitae b) Description of the property

The land where prospecting activities will take place is described in Table 1 below. The location map is displayed in Figure 1.

Table 1: Description of the property

Farm name	On a Portion of the Remainder of Farm Steinkopf 22
Application area in Ha	8028.7077 ha
Distance and direction from the nearest town	45 KM NNW of Springbok
21 digit surveyor General code for each farm portion	C05300000000002200000

c) Locality map

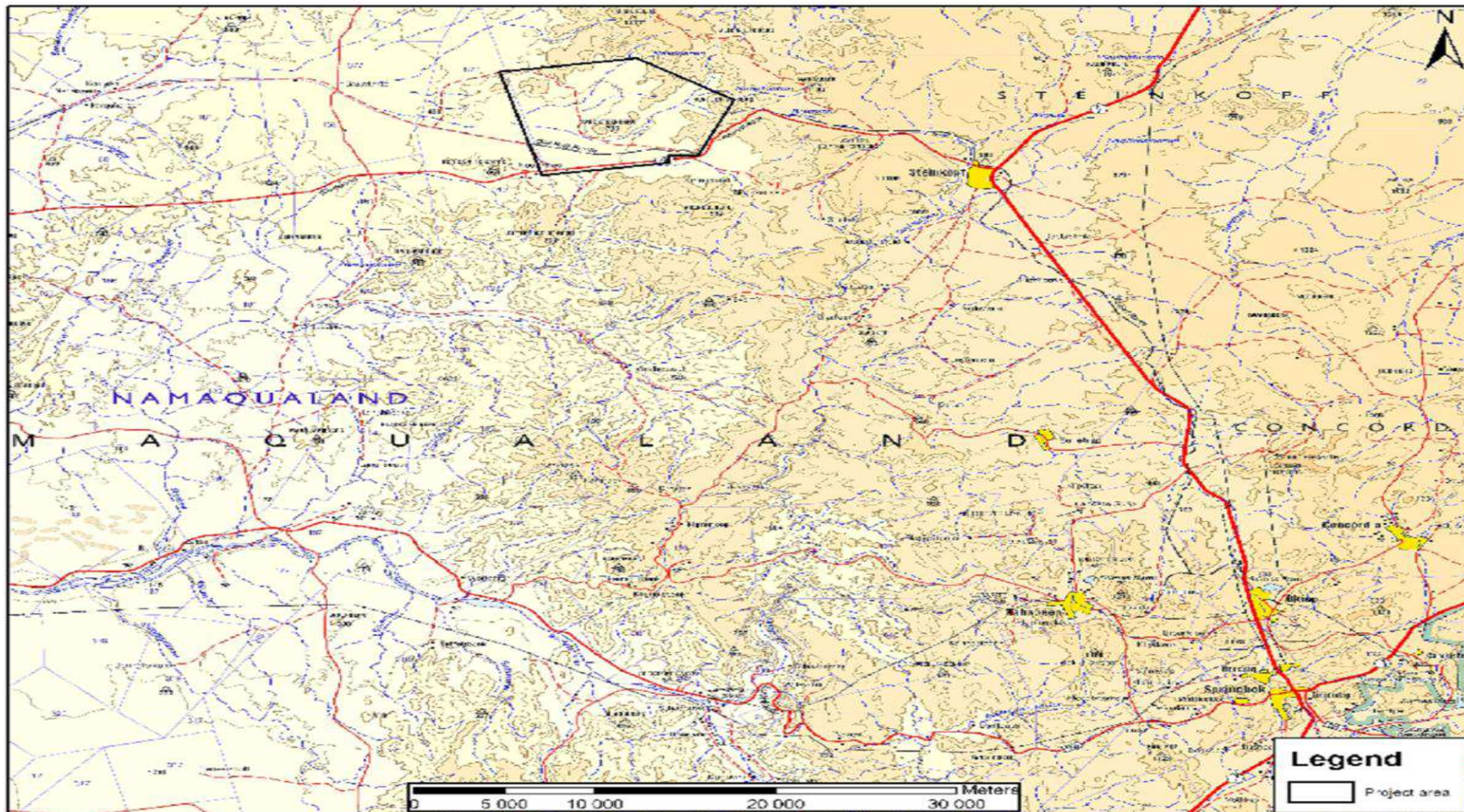


Figure 1: Location map of Steinkopf 22

d) Description of the scope of the proposed overall activity

Provide a plan drawn to a scale acceptable to the competent authority but not less than 1:10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructures to be placed on the site

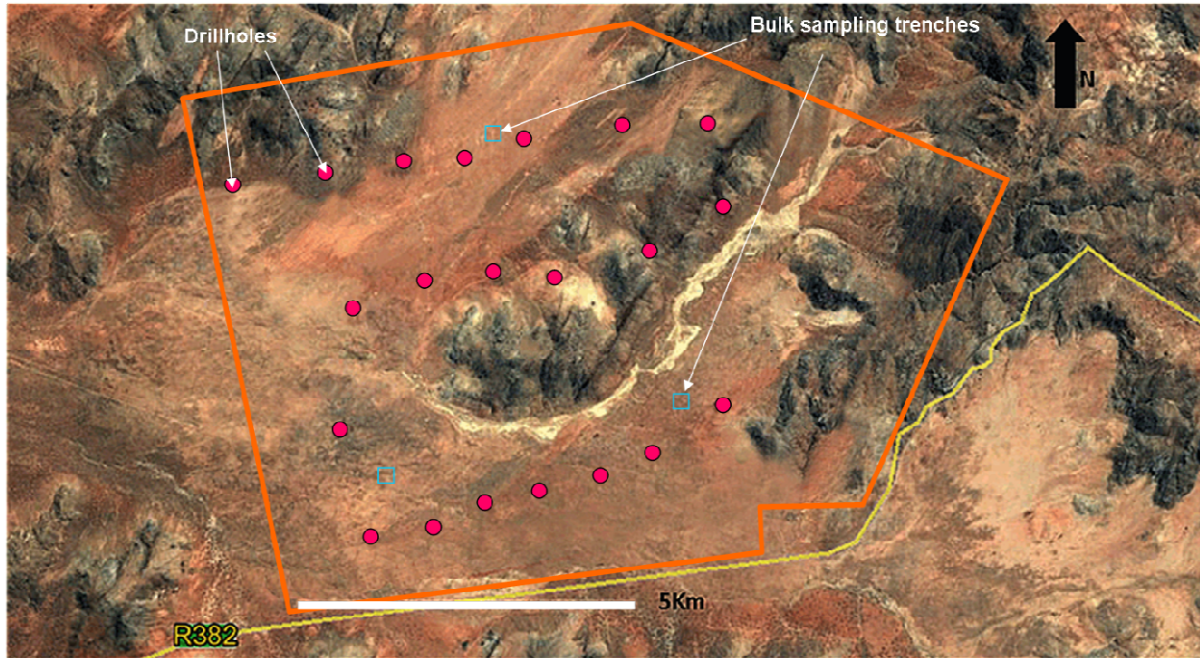


Figure 2: Layout plan

(i) Listed and specified activities

The following are the activities listed in Table 2 were applied for

Table 2: Listed and specified activities applied for

Name of the activity (All activities including activities not listed) E.g. Excavation, blasting, stockpiles, discard dumps or dams, Loading, Hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc....etc...etc.)	Aerial extent of the activity in Ha or m ²	Listed activity mark with an x where applicable or affected	Applicable listing notice (GNR 983,GNR 984 or GNR 985 or NOT LISTED
Prospecting with bulk	8028.7077ha	X	GNR 984-Listing Notice 2 Activity No.19

sampling and associated activities			
20 drill boreholes (15 RC and 5 Core drilling)	0.2 ha	X	GNR 983 Listing 20
3 Sampling trenches (30MX20MX20M)	2 ha	X	GNR 984, Listing 2, Activity 19
Vegetation clearance of less than 20 ha	1ha	X	GNR 983 Listing 27
Residue deposit area	0.02ha	X	Category A, Schedule 3 of NEMW:A
Storage of hazardous substances (Diesel storage tanks, chemical storage containers)	0.0025ha	X	Category A, Schedule 3 of NEMW:A
Storage of general waste (e.g Domestic Waste Facility)	0.0025ha	X	Category B, Schedule 3 of NEMW:A
Removal Of Sensitive Species		X	GNR983 Listing 30
Fencing	500m	-	-
Access and Mine Roads	500m ²	X	GNR 983, Listing 1, Activity 20
Temporary Camp Site	0.04ha	-	-
Topsoil	0.0025ha	-	GNR 984, Listing 2, Activity 19
Stock piles	0.02ha	-	GNR 984, Listing 2, Activity 19
Waste Dumps	0.02ha	-	GNR 984, Listing 2, Activity 19
Office Site	0.002ha	-	GNR 983, Listing 1, Activity 20
Vehicle parking	0.02ha	-	GNR 983, Listing 1, Activity 20

Ablution facility	0.0010 ha	-	-
Domestic Waste Facility	-	-	GNR 983, Listing 1, Activity 20
Rehabilitation	-	-	GNR 983, Listing 1, Activity 20

(ii) Description of the activities to be undertaken

(Describe Methodology or technology to be employed, including the type of commodity to be mined and for a linear activity, a description of the route of the activity)

Aggregate

Prospecting activities of the aggregate will include three trenching pits measuring at 30m x 20m x 20m. Location of trenches are represented on the layout plan that is on figure 2 above. Trenches will be excavated using excavators, Front End Loaders (FEL) and blasting out the hardest aggregate. After getting to the aggregate, the product will be taken to the crusher plant for screening. Final and washed products will then be loaded into the dumper truck by Front End Loaders to the Stockpile and loading area. Waste from the processed product will be used for rehabilitation and backfilling process.

Processing plant

The processing plant will include the crusher plant. The client (Rednax) will cut the granite into blocks and sell them as they are. However, the off cuttings or the remains will be crushed and sold to companies or individuals who will probably use them for construction of roads. The plant will process about 50 -100 tons per hour.

SAND

20 exploration drill holes will be dug, Sand samples from the exploration boreholes will be taken for further investigation by the geologist and be analysed. After the whole process is completed, the applicant will then decide whether to continue with the application of the Mining Right with the DMR or not.

Other activities that are expected to support the prospecting activities include but not limited to the following:

- Temporary storage of dangerous goods i.e. Lubricating oil, grease and diesel;
- Small residue deposit dam;
- Mobile offices;
- Loading and hauling;
- Storage of overburden and off cuts;
- Excavator, Front End Loader, Articulated Dumper Trucks, Drill Rigs, trucks and 4x4's vehicles.
- Crusher;
- Blasting;
- Ablution area for male and female.

The prospecting activities are expected to employ +- 15 employees from the community of Steinkopf. Steinkopf Farm is situated 20 km south from the application area or the site. During prospecting activities not all employees will be accommodated from site, some employees will be driven back to their respective homes after work by transport hired by Rednax Investment. Other facilities that will be on site will include two mobile toilets and will be serviced on a monthly basis. General waste bins will be located closer to the prospecting area at a given time to control waste.

(e) Policy and Legislative Context

The applicable legislation, guidelines and bylaws used to complete the report are listed in Table 3 and Table 3 respectively.

Table 3: Applicable legislation and guidelines used to complete the report

Applicable legislation and guidelines used to complete the report <i>(a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning framework and instruments that are applicable to this activity and are to be considered in the assessment process)</i>	Reference where applied
National Environmental Management Act 107 of 1998. NEMA underpins the environmental authorisation in South Africa. The regulations with listed activities are identified under	Environmental authorisation has been lodged with the Department of Mineral

<p>the Regulations GNR 982,983,984 and 985.</p> <p>The competent authority for this activity is the Department of Mineral Resource (DMR) which deals with mining related applications in terms of NEMA</p>	<p>Resources.</p> <p>Section 21-24 of NEMA</p> <p>For the purpose of this report GNR 983 and 984 will be applicable.</p>
Occupational Health & Safety Act, (Act 85 of 1993)	
<p>Mine Health and Safety Act 29 of 1996</p> <p>The act provides for the protection of health and safety of employees and other persons in the mines. It provides for the health and safety measures</p>	Section 2-24
<p>The National Forests Act, (Act No. 84 of 1998)</p> <p>The applicant needs to take into account of protected trees under this act if there are any on site and take precautionary measures to apply for a licence at the Department of Agriculture Forestry and Fisheries (DAFF)</p>	Section 15
<p>The National Water Act (Act No. 36 of 1998) (NWA)</p> <p>The Act recognises that water is a scarce and unevenly distributed resource nationally. Where applicable a water use licence will be lodged with the DWS in terms of section 21 of the Act with several water use activities listed and require authorisation of the DWS. An integrated water and waste management plan will be compiled in support of the water use licence application.</p>	Section 4, Section 21
<p>NEMA Biodiversity Act 10 of 2004.</p> <p>The act provides for the management and conservation of biodiversity, protection of species and ecosystems in South Africa. It also warrants the national protection and use of indigenous biological resources.</p>	Section 56
<p>National heritage Resources Act, (Act 25 of 1999)</p> <p>The Act aims at managing cultural heritage resources and</p>	Section 38

<p>encourages conservation and nurturing of cultural legacy for future generations.</p> <p>For development exceeding 0.5 Ha it is important that cultural heritage studies be undertaken. The act provides guidelines for impact assessment studies to be undertaken where cultural resources may be disturbed by development activities. The South African Heritage Resources Agency (SAHRA) will need to approve the heritage assessment undertaken as part of the impact assessment process.</p>	
<p>National Environmental Management: Waste Act 59 Of 2008.</p> <p>The act must be considered by both DMR and DEA</p>	<p>Application for waste is lodged</p>
<p>The National Environmental Management: Air Quality Act (Act No. 39 of 2004) (NEM:AQA)</p> <p>The act makes provision for the control of dust cause by general activities or machinery. Applicants to take responsibility in ensuring dust control, noise control and control of offensive odours.</p>	<p>Section 32,33,34,35</p>
<p>Mineral and Petroleum Resource Development Act 28 of 2002.</p>	<p>Application for prospecting Right in terms of section 27 of the MPRDA 28 of 2002</p>

By laws

Name of by laws	Year
Nama Khoi Local Municipality Integrated development plan (IDP)	2016-17
Spatial development framework Northern Cape Province	2012

(f) Need and desirability of the proposed activities

(Motivate the need and desirability of the proposed development including the desirability of the activity in the context of the preferred location)

Introduction

This project is proposed for the excavation of Sand and Aggregate from agricultural field. It is an opencast semi mechanized & mechanized mining project to excavate Sand and aggregate in its existing form for direct usage as a construction material for infrastructural development.

Prospecting activities will have positive impact in terms of decreasing level of unemployment in Steinkopf Community. Steinkopf community will benefit more from the proposed prospecting activities as statistics shows that unemployment rate at Steinkopf is high. Hiring of employees will bring more revenue into the local and surrounding community.

Table 4: Workforce requirements

Number of employees	Category
1	Mine Manager
2	Line managers
1	Supervisors
3	Skilled personnel
8	Unskilled

Note that the exact workforce requirements will be determined during actual prospecting activities.

Need for proposed prospecting activities

Demand of Sand and Aggregate has increased mainly in infrastructures like roads, highways, railways, buildings & townships. With the rapid pace of development, the gap between demand & supply of sand aggregate as construction material must be minimized to control the pricing mechanism. The price correction in the sand and aggregate rates will definitely provide growth impetus to the South African citizen and as well as to our economy (both directly and indirectly), if it is available legally. Therefore, utilization of sand and aggregate through scientific mining methodologies (sustainable mining) must be allowed to support growth in the Northern Cape Province.

Sand and Aggregate is a back bone construction material of every project. Sand mining boosts infrastructure development in construction of roads and buildings, railways etc.

In South Africa, construction industries trends are showing signs of recovery which will have a positive impact on Aggregate and Sand demand. Expected government infrastructures expenditure is in fact set to lift the industry considerably above 2014's figures.

The positive effects this will have on the Aggregate and Sand industry, which accounts for more than 11 % of all buildings materials sold by value in South Africa, will be significant.

As the second biggest sector of the building materials industry it is a welcome boost and will have positive spin-offs for its large workforce and related industries.

According to Nico Pienaar, director of the Aggregate and Sand Producers Association of Southern Africa (ASPASA), the industry has been in a steady growth phase since 2012, although growth has been somewhat slower than expected" with the amount of building plans passed rising steadily in 2015 and banks high availability of mortgages, it can safely be assumed that it will be a good year. Other well documented plans to upgrade and expand road, rail, power generations and other infrastructures will further unlock the construction industry and will result in the

full utilisation of resources and expansions being undertaken once again wherever these are required.

Direct employment

During the operational phase, about 15 people will be employed directly. Considering that some of the skilled personnel to be employed for the project will be from outside the area and unskilled/ semiskilled personnel will be from within the study area, the project will add to the well-being of the area. In addition to the workforce the indirect employment will also be generated for local persons. It will help in bringing prosperity to the area.

Indirect employment

The project will also provide indirect employment to the people of the areas nearby the prospecting site. It will also provide some need based opportunity to the local public. The project will provide the following indirect employment to the local people:-

- Sand and Aggregate availability will provide agency employment in the value chain analysis, for place utility and retail;
- Transportation and warehousing in the region required to transfer the mineral will eventually be needed and therefore trucks and jobs in logistical activities will come up;
- There will be development of externalities for the mine workers petty shops as supporting services;
- This would create Indigenous Technologies for sustainable development.

Improvements in social infrastructure

There will be some obvious changes in various environmental parameters due to mining activity. Increase socio-economic activities, creation of new employment opportunities, infra-structural development, better educational and health facilities.

Following are the benefits in specific area of social domain:-

Socio-Economic:- There will be positive impact in socio-economic area due to increased economic activities, creation of new employment opportunities, infrastructural development and better educational and health facilities.

Health Care Facilities: -Company will undertake awareness's program and community activities like health, HIV/AIDS awareness program etc.

Employment Potential: -There is a possibility of creation of direct and indirect employment opportunities due to the prospecting activities.

The mine will contribute to the Exchequer of State and Central Government as per norms.

Health

Periodic medical check-ups as per MHSA / Rules and other social development and promotional activities will be undertaken. All this will assist to lift the general health status of the residents of the areas around the mine.

g) Motivation for the preferred development footprint within the approved site including a full description of the process followed to reach the proposed development footprint within the approved site.

NB!! –This section is about the determination of the specific site layout and the location of infrastructure and activities on site, having taken into consideration the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout

A site layout plan is provided and attached as appendix 4 on this report.

(j) Details of the development footprint alternative considered

With reference to the site plan provided as appendix 4 and the location of the individual activities on site, provide details of the alternatives considered with respect to:

(a) the property on which or location where it is proposed to undertake the activity;

A description of the prospecting area is presented in Table 5 below

Table 5: The property on which the activity to be undertake

Farm name:	On a Portion of the Remainder of Farm Steinkopf 22
Application area Ha	8028.7077 ha
Magisterial district	Namakwa District
Distance and direction from nearest town	45 KM NNW of Springbok
21 digit surveyor General Code for each farm portion	C05300000000002200000
Most of the supporting prospecting activities will be positioned closer to the area identified for exploration activities.	

(b) the type of activity to be undertaken;

This project is proposed for the excavation of Sand and Aggregate. It is an opencast mining project to excavate Sand and aggregate in its existing form for direct usage as a construction material. Sand excavation will be carried out up to a depth of 3.0 m or 1.0 m above the ground water table or whichever is less by using light weight excavators. Mining will be carried out in Blocks with the Block wise Mining Plan.

Water balance chart

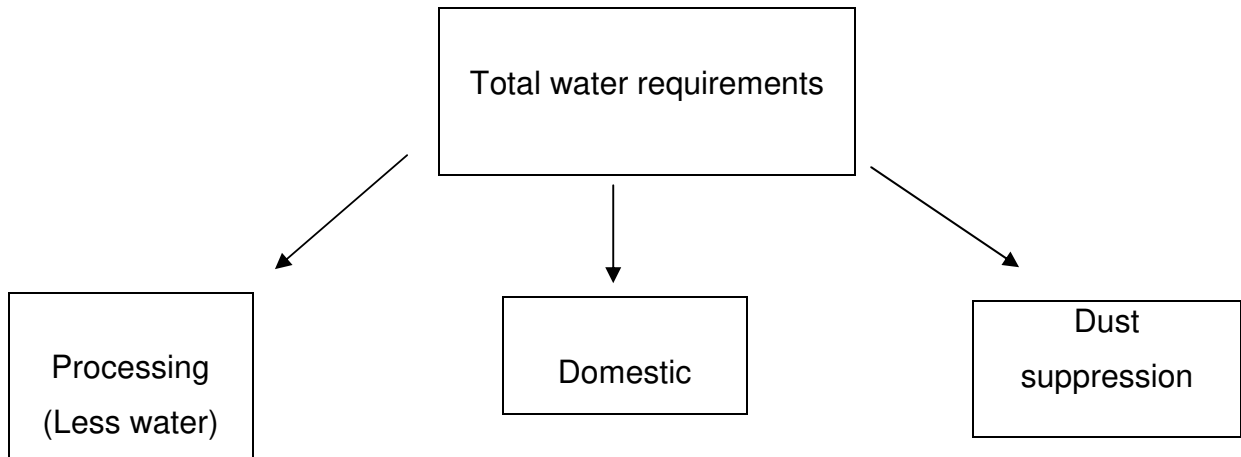


Figure 3: Water balance chart

Prospecting activities of Sand and Aggregate will only take place within the demarcated, applied area and no alternatives site is considered with regard to the type of activity that is to be undertaken. Blasting is considered to be the best option to get to the Aggregate. Grades and the depth of Sand deposit will be determined by means of drilling of exploration boreholes. Small roadway may be formed within the proposed prospecting area in order to access the entire footprint of the prospecting area, however, the exact extent of roadway footprint is not clearly known since existing access roads will be utilised.

(c) the design or layout of the activity;

Infrastructures that are to be used during prospecting period would be mobile. Meaning that, the proposed designed layout plan may change from time to time. However, this will only affect areas where the prospecting activities will be conducted. No permanent structures or buildings are expected to be erected within the prospecting area. Identified houses or shelter within the prospecting area will not be affected by the activities or be used to accommodate employees; however employees residing far from the prospecting area will be housed in camps within the prospecting area.

Small roadways may be formed within the proposed prospecting area in order to access the entire footprint of the prospecting area.

(d) the technology to be used in the activity;

Table 6: List of Machineries

Type	Name of Machinery
Types, Size, Name of the machines will be determined as the project continues	Front End loader
	Dumper Trucks
	Grader
	LDV's
	Mobile Plant
	Generator

List of machineries are not limited to the ones mentioned on the table above, there will also be supporting machineries if need arises during the prospecting period. The area suspected to have Aggregate deposit will be blasted using relevant explosives to get access to the Aggregate. The recovered Aggregate product will then be transported to the plant for crushing to required sizing. When the final product is recovered, the product will then be hauled to the storage area for sale within the prospecting area. Existing roads and roadways will be used to access the entire prospecting area. Prospecting area will be regularly cleaned by removing all hydrocarbon spillage, loose scraps, and domestic and industrial waste. Accidental hydrocarbon spillages deriving from the prospecting equipment will be scooped, bagged and disposed of at an approved site, however incident like this are not expected. The prospecting technology that is likely to be used cannot be replaced by any other methods since this is the only preferred way to conduct these prospecting activities by the applicant.

(e) the operational aspects of the activity;

The nature of the prospecting activities does not require electric power from Eskom grid. Generator set will be utilised. Water will be utilized for drinking, Processing (Small amount) and for dust suppression. Source of water will be ground water

transported through water tankers and reservoirs. The proposed project has positive impact on socioeconomic conditions of the area of Steinkopf. Community members skilled and unskilled will get employed. Approximately 15 people from the surround community are expected to get employed and hundreds will indirectly benefit from the proposed project.

The activities will commence with Magnetometer Surveys, which will comprise of non- invasive techniques. This type of survey will ensure that the area that still need more investigation can clearly be delineated for further investigation. Those areas will be regarded as and marked as no-go area until further notice. Based on the outcomes of the magnetic survey, soil sampling will be undertaken for target areas only. Soil samples is planned to be excavated using excavators, front end loaders and other related method.

Site activities as it relates to exploratory drilling will comprise the establishment of the drill pad, drilling operations (drill maintenance, refuelling, core extraction and core storage) and rehabilitation activities (drill pad ripping and re- vegetation). No feasible alternative to the proposed exploratory drill methods currently exists. Impact associated with the drilling operations will be managed through the implementation of Environmental Management Plan (EMP), developed as part of the application for Environmental Authorisation.

(f) the option of not implementing the activity.

The option of not implementing the prospecting activities will result in the loss of important information regarding the status of mineral ore deposited specifically the applied mineral which is Aggregate and Sand that exists at the application area. Alternative is not considered as there are no other alternatives that were identified by the applicant to conduct the proposed prospecting activities. All the activities will be implemented to the proposed area according to the set conditions of the environmental authorisation, Environmental Impact Report and Environmental Management Plan/Programme report.

(ii) Details of the public participation process followed

Describe the process undertaken to consult interested and affected parties including public meetings and one on one consultation. NB affected parties must be specifically consulted regardless of whether or not they attended the public meetings. (Information to be provided to affected parties must include sufficient details of the intended operation to enable them to assess what impact the activities will have on them or the use of their land.

Introduction to public participation

Public Participation is an integral part of the Environmental Impact Assessment (EIA) process and is regarded as a way of empowerment and as a vital part of our democratic governance. Ndi Geological Consulting Services has been appointed by Rednax Investment (Pty) Ltd as the main independent consultant to undertake the Environmental Impact Assessment process as required in terms of the National Environmental Management Act (107 of 1998)

Public participation is defined as a process that leads to a joint effort by stakeholders, technical specialist, the authorities and the proponent to work together to produce better decisions than if they had acted independently. Some of the key EIA requirements with regards to public participation include the following:

- Prospecting application and EIA must be publicly advertised (e.g. on site and in accessible local newspaper);
- Public consultation to identify issues of concern;
- Public to review both draft / final Scoping report and Environmental Impact Assessment report;

- Public may appeal within 20 days after the Environmental Authorization has been issued by the competent authority.

Perception of local people

During the course of field survey people living in the sample villages were requested to express their views about the proposed prospecting activities. The selection of villages was done irrespective of the distance of the villages from the prospecting site.

Public participation in EIA

National Environmental Management Act 107 of 1998 supports the engagement of all stakeholders in environmental governance. Consultation in the EIA processes achieves the following aspects:

- Inform and raise awareness of the proposal;
- Increase understanding amongst stakeholders;
- Identify and learn from local sources of information;
- Inform and improve decision-making.

Consultation methods

Announcement Phase

I&APs were notified using relevant guidelines applicable to public participation process as contemplated in section 24J of the Act. Notifications which relate to this prospecting right application were done after the acceptance of the prospecting right application and Environmental Authorisation application. I&APs parties were consulted in one of the following forms:

a) Newspaper advertisement

A newspaper advertisement was placed in English and Afrikaans in the Die Plattelander & Platinum Computers and Gembok News which was published on Friday 24 November 2017 and 17 November 2017, notifying the public of the EIA process and requesting I&APs to register with, and submit their comments to Ndi Geological Consulting Services. I&APs were given 30 calendar days to submit their comments on the proposed prospecting project.

b) Site notices

Site notices were placed on site in English and Afrikaans on the 17th of November 2017 to further inform the stakeholders and the public in general about the proposed prospecting activities.

Scoping Phase

a) Direct notification and circulation of the Scoping Report to identified stakeholders

Key stakeholders were sent letters by hand delivery from the 14th of November 2017.

Notification letters together with the Background Information Document (BID) were also sent to the stakeholders. The BID had a comments sheet attached to it for registered I&APs to submit their comments on the project. The key stake holders were also informed about the availability of the Draft Scoping Report which could be sent via email.

Comments and concerns from the stakeholders were received (Table 5) and addressed. Stakeholders requested to be registered as I&APs as well as requested documents relating to the project. These conversations were conducted telephonically and via email. Proof of email conversations will be attached to the Scoping Report.

Further consultation with the stakeholders has been arranged in a form of a public meeting. The meeting has been arranged for the **23rd of November 2017** at Steinkopf Community Library Hall at 2 O'clock. This meeting aims to provide more information regarding the proposed project and allow for the identification of key issues and concerns by the stakeholders. These issues will help inform the scope of the specialist studies.

EIA Phase

This phase begins once the Scoping Report has been submitted and accepted by DMR within 43 days. The stakeholders were notified via sms, whatsapp communication, one on one meeting, hand delivery of Draft EIAR to organ of state and were given 30 days to review and comment on the EIA/EMPr documentation.

The EIA/EMPr must be submitted to the DMR within 106 days for review. The DMR will then review the documents within 107 days and make a decision on the application.

Appeal Phase

The stakeholders will be notified of the DMR decision. Information on how to appeal the decision made by the DMR will be made available to the stakeholders.

(iii) Summary of issues raised by I&APs

(Complete the table summarising comments and issues raised, and reaction to those response)

The I&APs raised some issues regarding the prospecting activities; these are listed in Table 6.

Table 7: Summary of issues raised by I&Aps

Interested and affected parties. List the names of person consulted in this column, and mark with an X where those who must be consulted were in fact consulted		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant.	Section and paragraphs reference in this report where the issues and or response were incorporated
INTERESTED PARTIES					
Land owners					
Mr Nico Cloete	x	23 November 2017	Are you going to arrange another public participation meeting? As the adjacent farm owners and people residing within the application area are not present on this meeting	Definitely yes, It should be noted though that before we came here to this meeting we went to the proposed area to meet with the two families that are staying within the proposed application area unfortunately they were both absent. Further communication with be done directly with them	Public participation section
Community Member	x	23 November 2017	How to apply for the ownership of the Farm	It should be noted that we are not an expert when it comes to the application of owning Farms, but if a prospecting right is applied in a specific Farm it does not necessarily mean the applicant owns that Farm.	-
Community Member	x	23 November 2017	How are much are we going to be paid on a monthly basis	Salaries will be adjusted to market related by Rednax Investment themselves.	-
Heinrich	x	24 November 2017	I would like to register as an interested party in the EIA process of REDNAX INVESTMENT. We are a guest lodge situated in	The community member will be registered as an interested and affected party as requested. Rednax investment might want to utilise	-

			Steinkopf and we want to offer our services to your company and clients. We understand that your company have ongoing projects in our region and we want to know if there is a possibility of using our accommodation facilities in the near future.	the guest lodge depending on the occasion but this will however be decided by the Rednax management themselves.	
Van Wyk Stephanie	x	May 2018	Werkskepping kan geskiet aangesien die werkloosheids syfer baie hoog is in dorp.	Noted	Public participation section
Angela Young	x	May 2018	Het geen probleem daarmee nie sien net dat daar erkskepping gaan kom daarvan.	Noted	-
Peddy	x	January 2018	No objection. welcome the project.	Noted	-
Piet	x	January 2018	No objection. welcome the project.	Noted	--
Municipality	x	7 June 2018	No comment received.	No comment received.	
Organs of state	x				
Department of Agriculture, land reform and development.	x	7 June 2018	No comment received.	No comment received.	
Department: Environment and Nature Conservation	x	7 June 2018	No comment received.	No comment received.	
DMR		31 May 2018	No comment received.	No comment received.	
Department of Agriculture, Forestry and Fisheries	x	5 July 2018	NCNCA legislation was not consulted. Many provincially protected; specially protected, endemic and biogeographically important taxa are found in the affected NamaqualandKlipkoppeShrubland; Namaqualand Shale Shrubland and Namaqualand Blomveld. Vegetation	Botany report has been amended. The amendment of the National Forest Act of 1998 as suggested will be implemented in order to relocate all the protected species which forms part of conserving rare species.	

			<p>will be cleared for bulk sampling and drilling, therefore a flora permit must be carried out by a suitably qualified botanist to relocate affected succulents of conservation concern after obtaining the necessary permit to do so.</p> <p>Page 30 of the draft EIR stated that a “huge drainage system passes through the mountain hills” Page 58 of the same report stated that “no river or any flowing streams will be affected by the proposed prospecting activities as there is no river close by the application area”. These statements seem to contradict each other. Please clarify.</p> <p>Page 60 of the Draft EIA Report refers to vegetation loss stated “where the firebreak will be created, the vegetation will be disturbed and/or destroyed.” The development must take note of section 16 of the NATIONAL Veld and Forest Act, Act 101 of the 1998 (NVFFA) as amended, which refers to the prohibition on damaging protected plants. The NVFFA stated the owner must transplant any plant which is protected in terms of any; or where it is safe and feasible position the firebreak as to avoid such plant or tree.</p>	<p>In this study within the proposed mining area is within drainage system that identified and evident indicate that the drainage it only flow when there is heavy rains within the catchment.</p> <p>Mitigation measures will be developed and be in place in case of the fire out break as part of complying with the Section 16 (a) and (b) of the national veld and forestry fire act.</p> <p>The size of the proposed activity covered area has been addressed although it was error from the typist.</p>	
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			Page 9 of the draft EIR refers to an application area of 8 028, but the botany report refers to a development area of 37 000 ha. Please clarify.		
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(iv) The Environmental attributes associated with the development footprint alternatives. (The environment attributed described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects)

1) Baseline environment

(a) Type of environment affected by the proposed activity.

TOPOGRAPHY & DRAINAGE

Locality and extent of surface drainage features in close proximity of any development usually represent receptors for the groundwater system; therefore it is important to have knowledge of locality and surface drainage.

The highest topographic point occurs along the north and eastern sides of the study area with an elevation ranging between 753 – 1062 mamsl while the lowest point of elevation of 0 - 387 mamsl occurs outside the boundaries of the study area. These elevation differences may be seen as the area consist of mountains and deep sandy valleys between the mountains.

The study area drains from the east and the north easterly direction towards the west with 2 unnamed non-perennial rivers starting at the mountain tops. These rivers join at the western boundary of the study area as the main river flows out of the study area until it disappears in quaternary F20B. These rivers within the study area and also in catchment around do not contribute to any bigger river as they all seem to disappear in the sand valleys. Groundwater flow direction is expected to be towards the western direction. Groundwater gradient usually mimic the topography and in this case, the topographic elevation lowers towards the west as indicated on the elevation map and also by the river course which start from the mountainous areas flowing towards the west of the study area. (Refer to page 13 of the Hydrological Report).

SOCIO-ECONOMIC ENVIRONMENT

The Nama Khoi Local Municipal area showcases world-renowned tourist attractions such as the springtime flowers, while also serving as a window into the ancient culture of the Khoi-San.

The Nama Khoi Municipal area is situated in the north-western part of the Northern Cape Province. It forms part of the Namakwa District Municipality with the town of

Springbok as the administrative centre. The municipality includes the communities of Springbok, Steinkopf, Okiep, Rooiwinkel, Concordia, Komaggas, Buffelsrivier, Nababeep, Bulletrap, Vioolsdrift, Goodhouse, Kleinzee and Carolusberg. An independent survey, done by Empowerdex during 2009, rated Nama Khoi as the best municipality in the country. According to this research, 94% of the inhabitants have access to basic services.

Population and household

The Nama Khoi LM covers a geographical area of 14,921 km² which is approximately 12% of Namakwa's total. The Municipality has a population density of 3.9 people per km² and a household density of 1.1 households per km². The most significant portion of Namakwa's population (43%) resides in this Municipality.

Table 8: Census report of 2001 and 2011

Population and household totals

Municipality	Total population		Population growth rate(1996-2001)	Total population	Population growth rate (2001-2011)
	1996	2001		2011	
Nama Khoi Municipality	43 841	44 900	0,5	47 041	0.5
Namaqua District	109 603	108 111	-0.3	115 842	0.7
Northern Cape	1 011 864	991 919	-0.4	1 145 861	1.4

Source: Nama Khoi Integrated development plan (2016-2017 fourth revision)

The average population growth rates between 1996 and 2010 were: 0.6% for the Northern Cape Province, 0.4% for the Namakwa DM, and 0.8% for the Nama Khoi LM. Table 1.1.2 indicates the population distribution of the main-places in Nama Khoi LM.

Table 9: Age distribution

Nama Khoi	Total Population			Population growth Rate (1996-2001)			2011		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	2 241	2176	4 417	1992	1932	3925	1968	1789	3757
5-9	2 334	2282	4 616	2187	2136	4323	1966	1830	3795
10-14	2 329	2485	4 814	2341	2304	4645	2137	2009	4146
15-19	2341	2320	4661	2208	2304	4512	2319	2128	4447
20-24	1795	1743	3 538	1896	1774	3670	1839	1773	3613
25-29	1715	1849	3 564	1877	1686	3562	1712	1735	3450
30-34	1533	1748	3 281	1766	1790	3556	1641	1677	3318
35-39	1399	1527	2 926	1531	1636	3167	1613	1622	3234
40-44	1292	1413	2 705	1394	1509	2903	1568	1778	3346
45-49	1070	1137	2 207	1325	1440	2765	1456	1592	3407
50-54	908	954	1 862	1052	1107	2159	1291	1425	2716
55-59	762	740	1 502	836	908	1744	1137	1276	2413
60-64	535	597	1 132	656	756	1412	890	1002	1892
65-69	384	454	838	426	569	994	671	799	1471
70-74	216	327	543	303	376	679	500	576	1076
75-79	169	228	397	144	403	257		393	650
80-84	120	178	298	105	162	267	137	241	378
85 +	76	129	205	61	153	214	110	183	293
Total	21 217	22 286	43 503	22 099	22 801	44 900	23 215	23 826	47 041

Source: Nama Khoi Integrated development plan (2016-2017 fourth revision)

The high proportion of potentially economically active persons implies that there is a larger human resource base for development projects to involve the local population and potentially a lower dependency rate due to the lower numbers of youth and old aged persons. However, the youth still represent a large proportion of the population, which means that even though the percentage of youth is less than that of the District, focus still needs to be placed on youth development.

Soil cover

The top layer of the prospecting area consist of sand and the depth of the sand deposit is not known. The mountainous area consist of rocks.

Geology

The farm is located within the Namaqualand Metamorphic Complex, which includes metasedimentary, metavolcanic and intrusive rocks, which are mainly gneiss in nature (Kent, 1980).

The Namaquaorogenic belt in north-western South Africa (and Southern Namibia) is comprised of several terraces which are themselves divided into three sub-province; the Gordonia, Richtersveld and Bushmanland subprovinces. The Bushmanland subprovince includes the O'okiep and Garies terraces. The O'okiep District or terrane is underlain by granite gneiss and granite with remnants of metamorphosed supracrustal rocks, which are approximately late Mesoproterozoic in age (1210-1035 million years old). The assemblage was later intruded by the copper bearing Kokerberg Suite.

Recent work, specifically in Namibia, has incorporated the Kakamas and Areachap Terranes into the Gordonia Subprovince (e.g. Eglinton, 2006; Moen and Toogood, 2007; Miller, 2008). The Gordonia Subprovince is separated from the Kaaien Terrane by the Brakbos Shear (Coward and Potgieter, 1983; Stowe, 1983, 1986; Thomas et al., 1994a). The Bovenrugzeer Shear is proposed to separate the Kakamas from the Areachap Terrane (Harris, 1992). The Kakamas Terrane is generally considered to be composed of high-grade supracrustal gneisses, charnokites and granites with the late stage NNW-trending Neusberg Shear-zone separating an arenite and calc-arenite supracrustal succession in the east from high-grade metapelite and biotite-garnet paragneisses in the west (e.g. Van Bever Donker, 1980; Moen, 1988; Botha et al., 1976, Thomas et al., 1994a). The Areachap Terrane represents a narrow, NNW-trending terrane comprised of 1300 Ma amphibolite-grade metabasic and intermediate supracrustal gneisses (Geringer et al., 1986, 1994, Cornell et al., 1990). The Areachap Terrane contains juvenile Mesoproterozoic crust, showing clear subduction-related signatures (Geringer et al., 1986, 1994; Cornell et al., 1992; Jacobs et al., 2008) that are interpreted to indicate a series of volcanic arcs (Geringer and Ludick, 1990).

The geology of the farm is underlain by Q-S4 (red Aeolian sand, pediment deposits), Kbw (as well as fine grained biotite gneiss, megacrystic in places); Kkn (pink

weathering, fine grained equigranular gneiss), Ksg (Garnet sillimanite schist, quartzite, minor calc silicate rocks and conglomerate) and Ksf (fine grained, grey banded to massive biotite-hornblende gneiss) these are amongst the rock types that constitute aggregate.

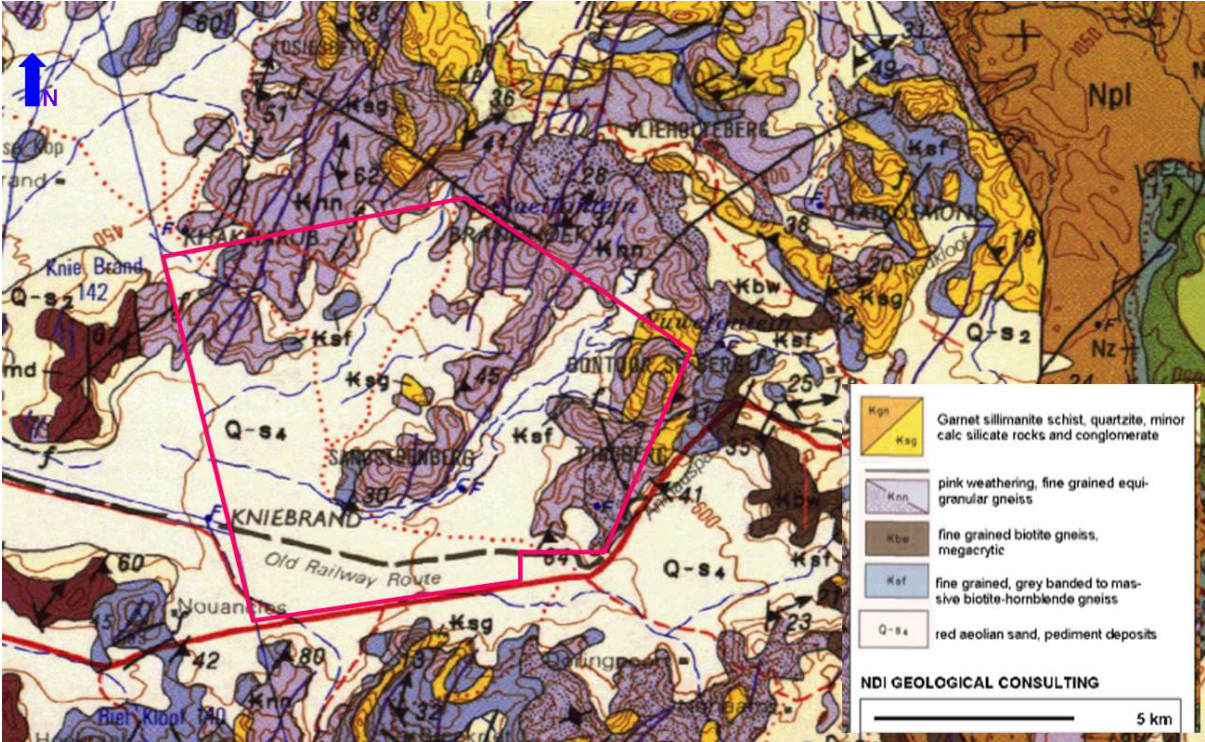


Figure 4: Geological Map

Fauna and Flora

The proposed prospecting area is a communal land. There are communities within the application that are practicing subsistence farming, farming cattle, pigs and sheep. Baboons were also spotted on top of the mountain. It is obvious that the area is also characterised by reptiles though no reptile was spotted during the time of site visit and inspection. Ecological report is attached on this EIAR as appendix 2.19.2.

CLIMATE

Rainfall in the Nama Khoi municipality is already very variable, ranging from 20-300mm per year, and very low compared with the rest of South Africa. There are already noticeable water constraints that impacted the ability of the municipality to deliver water services successfully. Median and worst case scenarios predict a decrease in rainfall for winter rainfall areas such as this, with average annual rainfall projected to decrease by up to 30% along the west coast by 2100. This drying trend

is particularly strong towards the end of the rainy season. A best case scenario to 2050 indicates there may be some early increase in rainfall, followed by drying later as frontal systems shift southwards. There are likely to be more frequent and more intense rainfall related extreme weather events such as droughts and storms. Nama Khoi is already drought prone, and while little change is projected in the immediate future, droughts are expected to increase in frequency and severity by up to 50% towards the end of the century.

TEMPERATURE

Nama Khoi is already a hot place, with summer day-time temperatures regularly reaching the high into the 30°C. Climate scientists predict a rise in average temperatures as a result of climate change. A significant trend for increasing temperatures is already shown by weather stations in the Northern Cape tacking temperature data from 1960-2003. Under a relatively unmitigated scenario for future climate change, the Nama Khoi municipality can expect a 1-2°C increase in temperature along the coast by 2050, rising to a 3-4°C increase in temperatures by 2100. The interior can expect greater increases in temperature, between 3-4°C by 2050, and 5-6°C by 2100.

COASTAL PROCESSES

According to the IPCC (2007), sea levels are projected to rise globally by 15 to 95 cm by 2100. The coastline may be impacted by 'storm surges' and rising sea levels. The town of Port Nolloth in the Richtersveld, for example, has been affected by storm surges in the past (most recently in 2009) and other Nama Khoi coastal towns may be at risk from the same in the future. Although overall vulnerability to these processes is fairly low due to a steep, rocky coastline evolved in response to historical big swell and wave action, there are nodes of vulnerability around towns, fishing fleets, and estuaries.

Water resources

Qualified specialist such as Hydro census and Surface water specialist are appointed. The report forms part of the Environmental Impact Assessment report. Please see attached report as appendix 2.19.3.

Description of the current land use (its current geographical, physical, biological, socio-economic, and cultural character)

Current land use at the Farm Steinkopf 22 is grazing and farming of domesticated livestock, such as cows, sheep, and a little piggery from the other homestead within the application area. Roosters were also identified wandering around the application area.

(b) Description of the specific environmental features and infrastructure on site

The proposed area is characterised by a non-perennial stream. Surface water study will reveal all required evidence by the EIA. Hydrological and Geohydrological study report is attached as appendix 2.19.3.

(c) Environmental and current land use map

(Show all environmental and current land use features)

(Show all environmental and current land use features).

(v) Impacts and risks identified including the nature, significance, consequences, extent, duration and probability of the impacts, including the degree to which these impacts

(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability, and duration of the impacts. Please indicate the extent to which they may cause irreplaceable loss of resources, and can be avoided, managed or mitigated)

During the Scoping Phase, the following have been considered from an Environmental impacts perspective, some of which will definitely require further investigation:

- Topography disturbances;
- Air pollution;

- Biodiversity loss;
- Hydrology and geohydrology disturbance;
- Noise from blasting, crushing and movement of mining vehicles;
- Heritage site disturbances;
- Traffic impact;
- Socio-economic impact;
- Land use conflict.

Mitigation measures that are in line with identified environmental features that may be affected by the proposed prospecting activities were discussed with interested and affected parties during Scoping Phase and EIA by the applicant and the relevant specialists to ensure practicality and effectiveness. The overall feasibility of a mitigation measure will depend on the significance of the impact which is determined by the Environmental Impact Report (EIR). The proposed mitigation measures and recommendations are included in this Environmental Impact Assessment report.

(vi) Methodology used in determining and ranking the nature, significance, consequences, extent, duration, and probability of potential environmental impacts and risks;

(Describe how the significance, probability, and duration of the aforesaid identified impacts that were identified through the consultation process was determined in order to decide the extent to which the initial site layout needs revision)

Criteria of assigning significance to potential impacts

The assessment of the impacts has been conducted according to a synthesis of criteria required by the integrated environmental management procedure.

Nature of impact

This is an appraisal of the type of effect the activity would have on the affected environmental component. Its description should include what is being affected, and how. The impact may be positive or negative.

Extent

The physical and spatial size of the impact. This is classified as follows:

Local

The impacted area extends only as far as the activity, e.g. a footprint.

Site

The impact could affect the whole, or a measurable portion of the property.

Regional

The impact could affect the area including the neighbouring farms, transport routes and the adjoining towns.

Cumulative

The impact could have a cumulative effect with the surrounding land uses.

Duration

The lifetime of the impact which is measured in the context of the lifetime of the proposed phase (i.e. construction, operation and decommissioning)?

Short term

The impact will either disappear with mitigation or will be mitigated through natural process in a short time period.

Medium term

The impact will last up to the end of the prospecting period, where after it will be entirely negated.

Long term

The impact will continue or last for the entire operational life of the mine, but will be mitigated by direct human action or by natural processes thereafter.

Permanent

Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient.

Intensity

This describes how destructive, or benign, the impact is. Does it destroy the impacted environment, alter its functioning, or slightly alter it. These are rated as:

Low

This alters the affected environment in such a way that the natural processes or functions are not affected.

Medium

The affected environment is altered, but function and process continue, although in a modified way.

High

Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases. This will be a relative evaluation within the context of all the activities and the other impacts within the framework of the project.

Probability

This describes the likelihood of the impacts actually occurring. The impact may occur for any length of time during the life cycle of the activity, and not at any given time. The classes are rated as follows:

Improbable

The possibility of the impact occurring is very low, due either to the circumstances, design or experience.

Probable

There is a possibility that the impact will occur to the extent that provisions must be made therefore.

Highly probable

It is most likely that the impacts will occur at some or other stage of the development

Definite

The impact will take place regardless of any preventative plans, and mitigation measures or contingency plans will have to be implemented to contain the impact.

Determination of significance

Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The classes are rated as follows:

No significance

The impact is not likely to be substantial and does not require any mitigatory action.

Low

The impact is of little importance, but may require limited mitigation.

Medium

The impact is of importance and therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable lev

High

The impact is of great importance. Failure to mitigate, with the objective to reduce the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation is therefore essential.

Table 10: Methodology used in determining and ranking the nature, significance, consequences, extent, and duration, of the activities

Activities	Potential Impacts	Nature of Impact	Extent	Duration	Intensity	Probability	Significance Rating	Description of The Mitigation Measure	Significance After Mitigation (High, Medium, Low)
1. Site establishment -Vegetation clearance -Demarcation of the prospecting area such as, temporal office site, and ablution area -Moving of equipment and mobile infrastructure to site -Removal of topsoil -Construction of access roads.	-Vegetation loss	Negative	Local	Long term	Medium	Highly Probable	High	Demarcate all working Areas with boundary fencing to restrict encroachment into surrounding veld. Existing tracks must be used as far as practicable. Re-vegetation(seeding), Avoid veld fires, rehabilitation	Medium
	-Soil compaction	Negative	Local	Medium term	Medium	Highly Probable	High	Avoid construction of new roads and use existing roads. Ripping of compacted surfaces.	Low
	-Dust	Negative	Regional	Medium term	Medium	Highly Probable	High	Dust suppression measures will be done by means of spraying the area with water. This will be done only when necessary.	Low
	-Loss of Fauna species	Negative	Site	Long term	Medium	Highly Probable	High	Demarcating the prospecting area. Restricting operational times to sunrise to sunset	low
	-Negative visual impact	Negative	Regional	Long term	Medium	Highly Probable	High	Concurrent rehabilitation	Low
	-Loss of authentic values	Negative	Regional	long-term	Medium	Highly Probable	High	Concurrent rehabilitation	Medium
	-Soil erosion	Negative	Site	Short term	Medium	Probable	High	Creating berms for security reasons	Low
	-Topographical disturbances	Negative	Site	Long term	Medium	Highly Probable	High	Concurrent Rehabilitation	Low
	Surface disturbance	negative	Site	long-term	Medium	Highly Probable	High	Rehabilitation of disturbed areas	Low

2. Drilling, Trenching and prospecting activities	-Land degradation	Negative	Local	Medium term	Medium	Medium	Medium	Rehabilitation of disturbed areas	Low
	-Loss of biodiversity	Negative	Site	Long-term	Medium	Highly Probable	High	Containment of operational footprint with boundary fencing. Rehabilitation of disturbed areas	medium
	-Negative Visual impact	Negative	Regional	Long-term	Medium	Highly Probable	High	The area will be rehabilitated to possible its original state meaning that no negative visual impact will be left on site	Low
	-Dust	Negative	Regional	Medium term	Medium	Highly Probable	High	Reasonable and effective methods must be implemented to reduce the liberation of dust into the atmosphere. Dust suppression measures would be implemented.	Low
	-Soil pollution	Negative	local	Short term	Medium	Probable	Medium	Using drip tray, taking precautions on the refuelling point. If any soil is contaminated during the life of the prospecting activities, it will be immediately scooped bagged and stored in an enclosed containers or plastic to be removed with the industrial waste to a recognized licenced facility or applicant for further treatment. Small spills will be treated on site using bio-sorb and bio shock.	Low
	-Surface and underground Water pollution	Negative	regional	Long-term	Medium	Probable	Medium	Avoid accidental hydrocarbon spillages.	low
	-Soil erosion	Negative	Site	Short-term	Medium	Probable	Medium	Creation of berm	low
	-Noise pollution	Negative	regional	Medium term	Medium	Probable	Medium	The applicant will comply with the occupational noise regulations of the Occupational Health and safety Act, Act 85 of 1993. Speed control of vehicles to be limited to 30km/h	low

	-Land use conflict	Negative	Site	Long-term	Medium	Highly Probable	High	Rehabilitation and return the area to possible its original state, Seeding of rehabilitated area if vegetation is not satisfactory.	medium
	-Loss of authentic value	Negative	Regional	Long-term	Medium	Highly Probable	Medium	Concurrent rehabilitation. Creation of buffer zone.	Low
	-Topography	Negative	Site	Medium term	Medium	Highly Probable	Medium	Concurrent rehabilitation.	Low
	-Waste generation	Negative	Site	Short term	Medium	Highly Probable	Low	Dedicated area for waste disposal and awareness.	Low
	-Health risk to workers or general public	Negative	Regional	Medium term	Medium	Probable	Medium	Environmental Awareness	Low
	Socio-economic (positive impact)	positive	Cumulative	Long-term	Medium	Definite	High	Creation of employment (15 temporary employment)	High
	Impact on heritage	Negative	local	Short-term	Medium	Probable	Medium	Heritage impact assessment report is attached.. Avoid impacting any areas so identified in Specialist report	Low
	Theft/poaching farm animals by workers	Negative	Site	Long-term	Medium	probable	Medium	Restrict access to employees only. Access identification cards. Work shopping the employees. Poaching and trapping of animals will be prohibited.	Low
Final rehabilitation of the prospecting area, Removal of equipment on site (positive impacts)	Noise	Negative	Local	Short-Term	Medium	Probable	High	Noise levels must comply with OHS regulations. Noise generating activities should be restricted to normal working hours. Mine is noted to be remote from any settlement and human habitation Vehicle exhaust systems should be in good state of maintenance	Low

								with standard noise suppression equipment. Personnel will wear PPE, specifically ear muffs to suppress noise levels when using machinery.	
	Soil compaction	Positive	Local	Short Time	Medium	Probable	High	Ripping of all compacted ground and also where equipment were standing.	Low
	Soil erosion	Positive	Local	Permanent	Medium	Probable	High	Finalise rehabilitation of berms created.	Low
	Dust	Negative	Local	Short-Term	Medium	Probable	High	Dust will be negligible	Low
	Surface disturbance	Positive	Local	Permanent	Medium	Probable	High	All surface disturbed will be rehabilitated to its original state. All compacted ground will be ripped to a depth of 300mm.	Low
	Soil pollution	Positive	Local	Short Term	Medium	Probable	High	Every equipment that may cause pollution will be taken out of the site.	Low
	Health risk	Positive	Regional	Permanent	Medium	Probable	High	No health risk is anticipated	Low
	Waste	Positive	Local	Short-Term	Medium	Probable	High	Collected and disposed-off to a licenced facility.	Low
Monitoring of rehabilitated areas for 6 months	Monitoring of vegetation growth	Positive	Site	Permanent	Medium	Highly Probable	High	Monitoring of vegetation growth will be done for a period of 2 years after final rehabilitation.	Low

(vii) The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that maybe affected.

(Provide a discussion in terms of advantage and disadvantages of the initial site layout compared to alternative layout options to accommodate concerns raised by affected parties)

No site alternatives have been considered as part of this report. The negative and positive impacts on the layout plan were discussed with all registered interested and affected parties and no negative comments were received from both parties regarding the layout plan so far. The negative and positive impacts of the proposed layout plan include the following environmental aspects:

- Topography;
- Geology;
- Biodiversity;
- Surface;
- Hydrology;
- Current land use;
- Surface use agreement;
- Land capabilities;
- Heritage;
- Noise;
- Visual;
- Socio economic.

Comments received from the interested and affected parties regarding the proposed layout plan are incorporated on this final EIA report.

(viii) The possible mitigation measure that could be applied and the level of risk.

(With regard to the issues and concerns raised by affected parties provide a list of the issues raised and an assessment/discussion of the mitigations or site layout alternatives available to accommodate or address their concerns, together with an assessment of the impacts or risks associated with the mitigation or alternative considered).

Concerns and comments raised by the interested and affected parties regarding the possible mitigation measures are stated on section (iii) of this report and are part of this final EIA report.

(ix) Motivation where no alternative sites were considered

For prospecting purpose, there were no alternative sites that were considered during the application of the Prospecting Right; however they are alternative site for hardparking during off hours. The reasons for no site alternative were that the identified prospecting area applied for in terms of Mineral and Petroleum Resource Act (MPRDA) is the only targeted area/site for conducting prospecting activities and the Department of Mineral Resources only issued a Prospecting Right to the area applied for. It is in this area where potential for Sand and Aggregate resources have been identified. Therefore, no alternative sites that may offer a better practical and economic option than the one identified. Currently there is no alternative to the layout plan, however, if it was identified during the assessment on the EIA process that some of the boreholes and trenches on the proposed layout plan are within 100m from the wetland, watercourse, pans and or any sensitive area there might be changes on the proposed layout plan and interested and affected parties will be notified immediately.

(x) Statement motivating the alternative development within the overall site.(Provide a statement motivating the final site layout that is proposed)

As stated in the previous section of this report, there were no alternative sites which were considered during the application of the Prospecting Right. The proposed site is the final site and has shown the potential of the mineral applied (Sand and Aggregate).

Prospecting site alternatives

As indicated there were no alternative sites which were considered for these proposed prospecting activities.

Prospecting method alternatives

Drilling and trenching method will be used during the prospecting period and no other alternative method to prospect Sand and Aggregate were considered since this is one of the common methods used in prospecting Sand and Aggregate.

Site layout plan alternative

Considering that at the moment, no infrastructure or equipment associated with the proposed activities is on site as well as the fact that there is no fixed prospecting infrastructure is planned for use at the site. There is no alternative to the layout plan that was proposed by the applicant, however, if it is identified during the setup process that some of the boreholes and trenches on the proposed layout plan are within 100m from the wetland, pans or any sensitive area there will be slight changes on the proposed layout plan of the boreholes and trenches.

No-go Alternatives

The no-go alternative is the possibility of not conducting proposed prospecting activities at all on the proposed application area. The no-go alternative results on sterilisation of minerals therefore, no-go alternative is not considered. However the no-go option is considered at a final stage, the receiving environment will have more benefit of having no minor or major environmental impact on the ecosystem.

- h) **Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (in respect of the final site layout plan) through the life of the activity.** (Including (i) a description of a all environmental issues and risks that are identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures)

Site visit for the preparation of EIA report was conducted on the **16th April 2018** together with the appointed Hydrological Specialist from Nyamoki Consulting. The aim of the site visit was to identify environmental features that may be impacted by the proposed prospecting activities. The site visit aided with the identification of different types of soil and vegetation cover and other environmental features. Heritage Impact Assessment report is attached.

Public participation meeting with interested and affected parties was held on the **10th of November 2017** at the Municipality Hall, unfortunately the community did not participate but the meeting was held one on one with the Mine Manager. The land owner and adjacent farm owners, surface rights owners were notified and requested to provide relevant information regarding the proposed prospecting area and

comments from the final scoping report. The requested information will be necessary in identifying possible environmental impacts and risk associated to the proposed prospecting activities, especially historical information that could be provided by the lawful occupiers.

Desktop study: This study was conducted to get more information about the proposed prospecting area and the adjacent farms, the climatic conditions, economic condition and their land uses.

Assessment was done on the environmental attribute, social, heritage/cultural aspect and impacts were identified and assessed to their duration, nature, extent, probability and their significant.

i) **Assessment of each identified potentially significant impact and risk.** (This section of the report must consider all the known typical impacts of each of the activities (including those that could have been identified by knowledgeable persons) and not only those that were raised by registered interested and affected parties)

Identified risks were assessed and presented in Table 11 below

Table 11: Assessment of each identified potentially significant impact and risk

NAME OF ACTIVITY (E.g. For Prospecting - drill site, site camp, ablation facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc E.g. For Prospecting, -excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and excavations, accommodation, offices, ablation, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	POTENTIAL IMPACT (Including the potential impacts for cumulative impacts) (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	ASPECTS AFFECTED	PHASE In which impact is anticipated (e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)	SIGNIFICANCE if not mitigated	MITIGATION TYPE (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) E.g. Modify through alternative method. Control through noise control Control through management and monitoring through rehabilitation.	SIGNIFICANCE if mitigated
Vegetation clearance	-Vegetation loss	Environment & fauna	Construction	Medium	Existing tracks must be used as far as practicable. Re-vegetation (seeding), Avoid veld fires, and rehabilitation	Low

Road construction & upgrading/ maintenance	Vegetation loss	Environment, people & animals	Construction	Medium	Ripping of road. Avoid construction of newly roads and use existing roads.	Low
	Dust	Environment, people & animals	Construction	Medium	Dust suppression methods will be implemented. limit a speed to 30kh/h	Low
	Ground compaction	Environment	Operational	High	Ripping of road. Avoid construction of newly roads and use existing roads.	Medium
-Removal of topsoil	Surface disturbance	Environment	Construction	Medium	Rehabilitation using backfilling methods as far as practicable.	Medium
Topsoil storage area,	Surface compaction	Environment	Operational	Medium	Ripping of ground, Avoid unnecessary tracks.	Low
	Soil erosion	Environment	Operational	Medium	Topsoil will be stored on the high ground of the Prospecting area outside flood plain. Stockpiles will be 2 m in height.	Low
Temporal office site	Surface compaction	Environment	Operational	Medium	Ripping of the compacted ground to 300m in order to allow vegetation growth	Low
Ablution area	Surface compaction	Environment	construction	Medium	Ripping of the compacted ground to 300m in order to allow vegetation growth	Low
	Air pollution/hygiene	People	Operational	Medium	Dust suppression measures such as water spraying.	Low
-Demarcating temporal dumps storage	Surface compaction	Environment	construction	Medium	Ripping of the compacted ground to 300m in order to allow vegetation growth	Low

	Visual impact	People	Operational	Medium	Concurrent rehabilitation	Low
	Topographical change	Environment	Operational	Medium	Rehabilitation	Low
-Moving of equipment and mobile infrastructure to site	Surface disturbance	Environment	Construction	Medium	Rehabilitation using backfilling methods as far as practicable.	Low
Drilling	-Surface disturbances	Environment, fauna and people	operational	High	Rehabilitation by backfilling boreholes.	Medium
	Biodiversity loss	Environment, fauna and people	Operational	Medium	Rehabilitation, re-vegetation. Avoid unnecessary removal of vegetation. Capping each borehole with a steel lead before drilling a new one to prevent fauna from falling into the boreholes	Low
	Visual impacts	People	Operational	Medium	Concurrent rehabilitation or creation of bufferzone.	Low
	Soil pollution	People, environment and fauna	Operational	Medium	Using drip tray, taking precautions on the refuelling point. If any soil is contaminated during the life of the Prospecting activities, it will be immediately scooped and stored in the enclosed containers or plastic to be removed with the industrial waste to a recognized licenced facility or applicant for further treatment. Small spills will be	Low

					treated on site using bio-sorb or oil cap.	
	Surface and ground Water pollution	People, environment and fauna	Operational	Medium	Avoid soil contamination throughout the life span of the mine.	Low
	Dust	People, environment and fauna	Operational	Medium	Dust suppression measures will be applied.	Low
	Health risk to workers or general public	People	Operational	Medium	Employees will be provided with Personal Protective Equipment (PPE)	Low
	Heritage site	environment	Operational	Medium	Heritage impact assessment will be conducted before commencing with the Prospecting activities. However if any heritage site or resource is identified during the excavating/ Prospecting period, it will be reported to SAHRA.	Low
	Soil erosion	Environment	Operational	Medium	Creation of berms, and proper storage of topsoil stockpiles.	Low
	Veld Fire	People, environment and fauna	operational	Medium	Environmental awareness.	Low
	Domestic waste	Animals, environment and people	Construction and operational.	Medium	Marked containers will be utilised to store domestic waste. Employees will be inducted on how to sort their waste. Waste will be taken to the municipality	Low

					dumping site on the weekly basis	
	Noise	People & animals	Construction & operational	Medium	Noise will be kept minimal on working hours.	Low
Trenching	Surface disturbances	Environment, fauna and people	operational	High	Rehabilitation by backfilling pits.	Medium
	Biodiversity loss	Environment, fauna and people	operational	Medium	Rehabilitation, re-vegetation. Avoid unnecessary removal of vegetation. Fencing of pits to prevent fauna from falling into the pits.	Low
	Visual impacts	People	Operational	Medium	Concurrent rehabilitation or creation of buffer zone.	Low
	Soil pollution	People, environment and fauna	Operational	Medium	Using drip tray, taking precautions on the refuelling point. If any soil is contaminated during the life of the Prospecting activities, it will be immediately scooped and stored in the enclosed containers or plastic to be removed with the industrial waste to a recognized licenced facility or applicant for further treatment. Small spills will be treated on site using bio-sorb or oil cap.	Low
	Surface and ground Water pollution	People, environment and	Operational	Medium	Avoid soil contamination throughout the life span of the	Low

		fauna			mine.	
	Dust	People, environment and fauna	Operational	Medium	Dust suppression measures will be applied.	Low
	Health risk to workers or general public	People	Operational	Medium	Employees will be provided with PPE (dust mask, Ear plugs etc.)	Low
	Heritage site	Environment	Operational	medium	Heritage impact assessment will be conducted before commencing with the Prospecting activities. However if any heritage site or resource is identified during the excavating/ Prospecting period, it will be reported to SAHRA.	Low
	Soil erosion	Environment	Operational	Medium	Creation of berms, and proper storage of topsoil stockpiles.	Low
	Veld Fire	People, environment and fauna	operational	Medium	Environmental awareness.	Low
	Domestic waste	Animals, environment and people	Construction and operational.	Medium	Marked containers will be utilise to store domestic waste. Employees will be inducted on how to sort their waste. Waste will be taken to the municipality dumping site on the weekly basis	Low
	Noise	People & animals	Construction & operational	Medium	Noise will be kept minimal on working hours.	Low

Maintenance of machinery /vehicles	Soil pollution	People, animals and environment	Operational	Medium	No maintenance of vehicles will be done on site. Avoid soil contamination at all time. Contaminated soil will be scooped immediately after accidental spill of hydrocarbons.	Low
Hydrocarbon storage	Soil contamination and water pollution	People, animals and environment	Operational	Medium	Avoid soil contamination at all time. Contaminated soil will be scooped immediately after accidental spill of hydrocarbons. Make sure that measures are applied at the refuelling point.	Low
Final rehabilitation	Dust			Medium	Topsoil will be spread over the rehabilitated soil in order to allow regrowth of vegetation. All machinery will be removed from the site. Ripping of all remaining compacted surface	Low
	Noise			Medium	Noise will be minimal since only touch-up will be done on site for final rehabilitation.	Low
	Domestic waste	negative	Closure phase	Medium	Removal of all marked containers and disposed waste at a registered facility	Low
Monitoring rehabilitated areas		environment	Post closure	Low	Monitoring of all rehabilitated areas will be done to make sure if vegetation is growing and if not other mitigation measures	Low

					<p>as seeding of the area will be considered.</p> <p>All invader species will be monitored and removed from all rehabilitated areas.</p>	
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The supporting impact assessment conducted by the EAP must be attached as an appendix, marked **Appendix**

J) Summary of specialist report

(This summary must be completed if any specialist reports informed the impact assessment and final site layout process and must be in the following tubular form)

A list of studies undertaken by specialists is presented in the table 12 below:

Table 12: Summary of specialist report

List of Studies undertaken	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED
Ecological Study assessment	Generally, the fauna and flora recorded during field survey are classified as of conservation concern. In this regard, it can be stated that, the proposed prospecting activity will not have impact on the species of conservation concern, which have a high conservation importance in terms of preserving South Africa's high biodiversity.	X	Part B of the EMPr
Hydrological assessment	This baseline study therefore indicate that the proposed study may not		

	have impact on the non-perennial river, however caution should be exercised to ensure that the river course is protected.	X	Part B of the EMPr
Geo-hydrological studies	Proposed prospecting project may not pose significant risk to the groundwater system in the study area.	x	Part B: EMPr
Heritage Impact Assessment	<p>Historical homestead identified by the presence of two stone constructed roundavel houses, dilapidated stone constructed structures and livestock dipping tank.</p> <p>There are no primary or secondary effect at all that are important to scientist or the general public that will be impacted in terms of generally protected heritage resources.</p> <p>Based on this assessment we recommend to the Provincial Heritage Resource Agency or South African Heritage Resource Agency to approve the project as planned.</p>	X	Part A and B of the report

k) Environmental impact statement

(i) Summary of the key findings of the Environmental Impact Assessment

- The buffers have been included to ensure that where the floodline is less than 100 metres away from the watercourse, then a minimum watercourse buffer distance of 100 metres is maintained with respect to location of prospecting workings and associated structures.;
- There were no graves or any historical aspects which were identified during the assessment;
- The surveys of the top soil show no other evidence of archaeological materials remains, capped or distributed as surface scatters on the landscape;
- It was identified during Environmental Impact Assessment that if all negative impacts are avoided and where they cannot be avoided they can still be mitigated and managed throughout the lifespan of the prospecting activities, they will be insignificant;
- The current land use for the proposed prospecting area is farming and can easily be returned to its natural state if all mitigations and management measures are implemented effectively;
- No ecologically sensitive biodiversity areas will be at risk;
- Natural ecosystems will not be compromised at a site or regional scale and local scale. Degradation can be mitigated through sound environmental rules, regulations and practise as will be stipulated in the EMPr;
- Vegetation biomes are not threatened at local to regional scale, rehabilitation and mitigation will act to re-generate and restore land to possibly its former state;
- The area is characterised by low groundwater usage due to low yielding boreholes and high evaporation;
- Two production boreholes supplying water to 1 household and few livestock exist within the EIA area;
- The aquifer is classified as a minor aquifer with low vulnerability and susceptibility to pollution ;

- The aquifer risk assessment was ranked low to medium and therefore it needs low protection from the proposed activities;
- Potential risk, impact and mitigation was indicated for each activity;
- Due to all the points mentioned above, the proposed prospecting project may not pose significant risk to the groundwater system in the study area;

(ii) Final site Map

Provide a map at an appropriate scale which superimposes the proposed overall activity and its associated structures and infrastructures on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. **Attach as appendix**

The final site map is attached in Appendix 4

(iii) Summary of the positive and negative implications and risks of the proposed activity and identified alternatives;

The prospecting activities will have positive impact to the surrounding community that is +-20 km away. Employment opportunities that will be provided by the proposed project will improve socio economic standard of the surrounding community of Steinkopf.

Prospecting activities will have positive impact however they also have negative impacts on the receiving environment and other aspects on the surrounding area. Table below shows the negative impacts as a result of the proposed prospecting activities.

Table 13: Summary of the positive and negative implications and risks of the proposed activity and identified alternatives.

Negative impacts	Description of the impacts
Surface disturbances	Surface disturbance will occur as a result of boreholes that are to be drilled. The compaction of ground will also occur during prospecting period.
Air pollution	Dust will be generated from the movement of the prospecting equipment. Emissions of smoke from vehicles which are not well serviced.
Noise pollution	Noise from vehicles, drill machine will be created during the Prospecting period which may affect the land owner, neighbouring/ adjacent farm

	owners.
Soil pollution	Contamination of soil may occur from accidental hydrocarbon spillages from the machineries, hydrocarbon storage and refuelling point
Vegetation loss	Where new boreholes will be created, the vegetation will be disturbed and/or destroyed. Removal of vegetation will lead to vegetation loss. Where the firebreak will be created, the vegetation will be disturbed and/or destroyed. Mitigation measures will be developed and be in place in case of the fire out break as part of complying with the Section 16 (a) and (b) of the national veld and forestry fire act. Vegetation cover will be disturbed and / or destroyed where the stockpile areas will be established.
Fauna disturbances	Animals within the Prospecting area will automatically relocate to other location.
Loss of authentic value	Littering of domestic and industrial waste during exploration.
Topography	Drilling will disturb the topography of the area.
Surface and ground water contamination	If accidental hydrocarbons spills are not removed with immediate effect after they spill, this may lead to surface and ground water contamination.
Health risk to workers or general public	This can happen if worker or general public inhale excessive dust or drink contaminated water as a result of the prospecting activities. This can also occur if the Mine Health and Safety Act is not implemented
Heritage site	Heritage feature may be disturbed during the drilling of the area.
Veld Fire	Veld fire may occur as a result of negligence or improper awareness.
Conflict of land use	Prospecting activities will have conflict with the current land-use which is farming/ grazing.
Farm animals theft/ poaching	This may occur if access to the farm is not controlled. Lack of awareness classes.

I) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr;

Based on the assessment and where applicable the recommendations from specialist reports, the recording of the proposed impact management objectives, and the impact management outcomes for the development for inclusions in the EMPr as well as for inclusion as condition of authorisation.

The EMP objectives:

The main objective of the EMPr is to provide information, guideline, and management measures to be implemented during the prospecting period. By following the information provided on the EMPr, impacts on the environment, cultural and social aspects will be avoided. Sensitive areas will not be disturbed if the EMP document is implemented effectively.

The applicant will operate on the principle that “prevention is better than cure” and so will institute procedures to reduce the risk of environmental emergencies from taking place. These will include ensuring that all contracts specify that the contractors are required to comply with all the environmental measures specified in the EMP document, environmental awareness training, on-going risk assessment and emergency preparedness.

Through implementation of the proposed prospecting activities and the mitigation measures it is anticipated that the identified environmental impacts, heritage impacts and social economic conditions aspects could be mitigated and managed successfully. Through implementation of the mitigation and management measures within the EMPr, it is anticipated that through the following management or mitigation measures impacts can be effectively managed:

- Theft risk can be mitigated through avoiding accommodating employees on site and restriction of access to employed people only;
- Mitigation measures will be developed and be in place in case of the fire out break as part of complying with the Section 16 (a) and (b) of the national veld and forestry fire act.
- Surface disturbances, visual impact and topographic changes could be minimised by practising concurrent rehabilitation throughout the prospecting period. By doing this the area can easily be returned to its natural state;
- Surface and ground water pollution can be avoided by management of contaminated soil and by avoiding accidental hydrocarbon spills;
- Noise pollution can be managed by putting necessary silencers on machines and through communication with the affected parties and also environmental awareness of the employees;

- In terms of emergencies responses, all employees will be equipped with emergency services numbers, including the local emergency response unit and fire fighting service. All employees should be made aware of emergency procedures that are to be followed during emergencies.

Monitoring of the required mitigation measures will have to take place daily on site by the site the appointed Environmental Control Officer. Annual monitoring audits are to take place by an appointed independent Environmental Assessment Practitioner (EAP) to compile the required annual environmental compliance report required by the DMR.

m) Final proposed alternatives

(Provide an explanation for the final layout of the infrastructure and activities on the overall site as shown on the final site map together with the reasons why they are the final proposed alternatives which responds to the impact management measures, avoidance, and mitigation measure identified through the assessment)

As discussed in the previous sections of this EIA report, there are no alternatives that were considered regarding the infrastructure proposed for the prospecting activities.

n) Aspects for inclusion as conditions of Authorisations

Any aspects which have not formed part of the EMP that must be made conditions of the Environmental Authorisation

- The applicant or the project manager must inform the farm owners and adjacent farm owners prior to any commencement of the prospecting activities;
- The applicant must appoint security officials in order to control access to the prospecting area to avoid theft and burglary;
- The financial provision must be adjusted annually by means of guarantee and or by provision and submitted to the Department of Mineral Resources.

o) Description of any assumptions, uncertainties and gaps in knowledge

(Which relate to the assessment and mitigation measures proposed)

The gaps of this EIA report are that it does not include final comments from competent authorities and other state departments. Uncertainties also exist on the actual final size, extent and depth of exploration boreholes and trenches. The final size will only be known when actual prospecting activities take place.

p) Reasoned opinion as to whether the proposed activity should or should not be authorised

(i) Reasons why the activity should be authorized or not

All activities applied for should be authorized since the applied activities have less and easily mitigated environmental impacts compared to actual mining. There will not be valid reason/s why the proposed prospecting activities should not be authorised as the majority of impacts are rated as low. All impacts have been assessed, evaluated and mitigations measures are in place to minimize any disturbance as a result of prospecting activities. Monitoring of activities will take place on site every two weeks by the Environmental Control Officer and daily by the project manager. Annual monitoring audits will be done by an appointed Independent Environmental Assessment Practitioner to compile the required annual Environmental Compliance report by the DMR. The Environmental Compliance report will then be submitted to the competent authority.

(ii) Conditions that must be included in the authorisations

- A copy of authorisations must be kept on site where the activities are taking place. The authorisation must be produced to any authorised official of the competent authority upon requests and must be made available for inspection by any employee or agent of the holder of the authorisation who works or undertakes work at the property;
- Where any of the applicant's contact details changed, including the name of the responsible person where the applicant is a juristic person, the physical or postal address and/or telephonic details, the applicant must notify the Department of Mineral Resources as soon as the new details become known to the applicant;

- The holder of the authorisation must notify the department, in writing and within twenty four (24) hours, if any condition of this authorisation cannot be or is not adhered to. Any notification in terms of this condition must be accompanied by reasons for the non-compliance. Non-compliance with a condition of this authorisation may result in criminal prosecution or other actions provided for in the National Environmental Management Act 107 of 1998 and its regulations;
- All areas on site that are disturbed must be rehabilitated using locally occurring indigenous plant species;
- The prospecting site must be clearly demarcated; clear signage must be erected; and access controlled;
- Faunal species should not be trapped at any given chance, killed or hunted during all phases of the prospecting work;
- Appointed Environmental Control Officer should visit the area at least once a week and Site Manager on a daily basis.
- The EMPr, Environmental Authorisation and the layout plan must always be on site during prospecting activities.

1. Specific conditions to be included into the compilation and approval of EMPr

All requirements stipulated by the report, as well as the developed Prospecting Rehabilitation Plan, Closure and Liability Plan and comments are part of this EIA report.

2. Rehabilitation requirements

Final rehabilitation, decommissioning and closure plan. GNR 1147 lists a number of requirements for the final Rehabilitation, Decommissioning and Closure Plan. This plan must include or describe the following:

- Must be measurable and auditable;
- Must take into consideration the proposed post-mining end use of the affected area;
- Must contain information that is necessary for the definition of the closure vision, objectives, design, and relinquishment criteria;
- Indicate what infrastructure and activities will ultimately be decommissioned, closed, removed and remediated;
- The risk drivers determining actions, indicating how the closure actions will be implemented to achieve closure relinquishment criteria; and
- Indicate monitoring, auditing and reporting requirements.

Prospecting Rehabilitation Closure and Liability Plan addresses the requirements stipulated above. However, as soon as the final site layout detailing all infrastructures associated to the prospecting activities have been defined and finalised.

q) Period for which the Environmental Authorisation is required

The Environmental Authorisation for the proposed prospecting activities is required for a period of 2 years of prospecting and 1 year of rehabilitation.

r) Undertaking

Confirm that the undertaking required to meet requirements of this section is provided at the end of the EMPr and is applicable to both the Basic Assessment Report and the Environmental Management Programme Report.

The requirements of this section is provided at the end of the EMPr.

s) Financial provision

State the amount that is required to both manage and rehabilitate the environment in respect of rehabilitation

The amount that is required to both manage and rehabilitate the environment in respect of rehabilitation is R 236 663.20.

I. Explain on how the aforesaid amount was derived

The purpose of prospecting activities will consist of drilling of 20 boreholes and 3 trenches which will disturb approximately 3 ha in total excluding other prospecting activities like access roads. In circumstances where the said area to be drilled at any given time is exceeded, the applicant will ensure that the financial provision is aligned accordingly. Topsoil and Dumps will be temporary stored separately from each other. Stored overburden will be used for the rehabilitation of disturbed area.

Table 14: Environmental rehabilitation calculations

Prospecting area	8028.7077 ha
20 boreholes (drilling)	0.2ha
3 trenches	0.45 ha
Fence	500 m
Temporary storage of dumps	0.02 ha
Temporary storage of topsoil	0.01ha
Bund wall area for the storage of hydrocarbon	0.0025ha
Mobile office	0.002 ha
Ablution facility	0.0010 ha
Construction of temporal access roads	1000m ²
Crusher Plant	200m ³

II. Confirm that this amount can be provided for from operating expenditure

(Confirm that the amount, is anticipated to be an operating cost and is provided for as such in the Mining work programme, Financial and Technical Competence Report or Prospecting Work Programme as the case maybe)

The financial provision of R 236 663.20 will be provided for from operating expenditure. The applicant intends to make this financial provision in a form of bank guarantee or cash deposit.

t) Deviations from the approved scoping report and plan of study

(i) Deviations from the methodology used in determining the significance of potential environmental impacts and risks

(Provide a list of activities in respect of which the approved scoping report was deviated from, the reference in this report identifying where the deviation was made and a brief description of the extent of the deviation)

There have been a number of deviations and additional information added compared to the initial accepted Scoping Report.

(ii) Motivation for the deviation

Deviations are caused by the proposed alternatives on the activities. For example it was suggested that the Sand and Aggregate could be stockpiled within the application area in different sizes before they could be sold to the client.

u) Other information required by the competent authority

i) Compliance with the provision of section 24(4)(a) and (b) read with section 24(3) (a) and (7) of the National Environmental Management Act (Act 107 of 1998). the EIA report must include the:-

“Procedures for the investigation, assessment and communication of the potential consequences or impacts of the activities on the environment – (a) must ensure, with respect to every application for an Environmental Authorisation –

- I. Coordination and cooperation between organs of state in the consideration of assessments where an activity falls under the jurisdiction of more than one organ of state;
- II. that the findings and recommendations flowing from an investigation, the general objectives of integrated environmental management laid down in this act and the principles of Environmental Management set out in section 2 are taken into account in any decision made by an organ of state in relation to any proposed policy, programme, process, plan or project;
- III. that a description of the environment likely to be significantly affected by the proposed activity is contained in such application;

- IV. investigation of the potential consequences for or impacts on the environment of the activity and assessment of the significance of those potential consequences or impacts; and
 - V. public information and participation procedures which provide all interested and affected parties, including all organs of state in all spheres of government that may have jurisdiction over any aspect of the activity, with a reasonable opportunity to participate in those information and participation procedures; and
- b. must include, with respect to every application for an Environmental Authorisation and where applicable –
- I. investigation of the potential consequences or impacts of the alternatives to the activity on the environment and assessment of the significance of those potential consequences or impacts, including the option of not implementing the activity;
 - II. investigation of mitigation measures to keep adverse consequences or impacts to a minimum;
 - III. investigation, assessment and evaluation of the impact of any proposed listed or specified activity on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999), excluding the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act;
 - IV. reporting on gaps in knowledge, the adequacy of predictive methods and underlying assumptions, and uncertainties encountered in compiling the required information;
 - V. investigation and formulation of arrangements for the monitoring and management of consequences for or impacts on the environment, and the assessment of the effectiveness of such arrangements after their implementation;
 - VI. consideration of environmental attributes identified in the compilation of information and maps contemplated in subsection (3); and
 - VII. provision for the adherence to requirements that are prescribed in a specific Environmental Management Act relevant to the listed or

specified activity in question.” Section 24 (3)(a) and (7) of NEMA states the following:

“24 (3) The Minister, or an MEC with the concurrence of the Minister, may compile information and maps that specify the attributes of the environment in particular geographical areas, including the sensitivity, extent, interrelationship and significance of such attributes which must be taken into account by every competent authority.”

“24 (7) Compliance with the procedures laid down by the Minister or an MEC in terms of subsection (4) does not absolve a person from complying with any other statutory requirement to obtain authorization from any organ of state charged by law with authorising, permitting or otherwise allowing the implementation of the activity in question.”

1. The purpose of Part A and Part B of this report fulfils the requirements stipulated in section 24 of NEMA. This report resulted with the outcomes of the detailed impact assessment carried out and provides recommendations from a broad spectrum of expertise.**Impact on the socio-economic conditions of any directly affected person.**

(Provide the results of investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamonds prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as Appendix 2.19.1 and confirm that the applicable mitigation is reflected in 2.5.3;2.11.6 and 2.12 herein).

Negative impacts on directly affected parties:

- Livestock theft as a result of uncontrolled access to the farm;
- Noise as a result of blasting;
- Potential water and soil pollution as a result of neglected soil contamination;
- Negative visual impact;
- Dust generation;
- Surface disturbances as a result of borehole drilling and excavation of sample pits;

- Impact on the livestock within the farm as results of drilled boreholes and sample trenches.

Positive impacts on directly affected parties:

Establishment, repairs and upgrade of roads on farm will aid to improve the economic conditions of the farm.

Employment opportunities will improve socio economic standard of the surrounding community.

Mitigation measure to the impacts of the socio-economic condition of any directly affected person:

- Reasonable and effective methods must be implemented to reduce the liberation of dust from operational activities;
- Dust suppression measures such as water dampening from trailer to be used if and when required;
- Mine staff ECO induction will train all staff on recognition and importance of fauna and livestock.
- Hunting, snaring, capturing or interfering with any fauna and landowner's livestock is forbidden and will be a punishable offence;
- The areas demarcated for prospecting must be the minimum reasonably required which will involve the least possible disturbance to the environment and must be fenced to restrict any fauna entering the drilled and trenched area;
- Drilled boreholes must be capped with steel or concrete immediately after drilling completed. Ongoing refill concurrent with prospecting will mitigate the overall footprint of drilled holes.
- Trenches will be immediately backfilled on completion of taking out product;
- Using drip trays and taking precautions on the refuelling point. If any soil is contaminated during the life of the prospecting activities, it will be immediately scooped, bagged and stored in the enclosed containers or plastic to be removed with the industrial waste to a recognized licensed facility for further treatment. Small spills will be treated on site using bio-sorb, bio-shock or oil cap. This will minimise surface or ground water pollution;

- Concurrent rehabilitation will be implemented throughout the prospecting operation, meaning that each borehole and trench will be rehabilitated before moving to the next prospecting area in order to reduce negative visual impacts;
- The current land use is farming/grazing land and after rehabilitation of all disturbed area as a result of prospecting activities, the area will be returned to its possibly original state and can again be used as a grazing land.

2. Impact on any national estate referred to in section 3 (2) of the National Heritage Resources Act. (Provide the results of investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3 (2) of the National Heritage Resource Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of the Act, attach the investigation report as Appendix 2.19.1 and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6 and 2.12 herein)

The Heritage Impact Assessment report is attached..

v) Other matters required in terms of section 24(4)(a) and (b) of the Act.

(the EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24 (4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub-regulation 22 (2)(h), exist. The EAP must attach such motivation as Appendix 4)

As discussed in previous sections on this report, no alternatives were considered. The proposed Steinkopf 22 Project is located within the area suspected of having the potential of Sand and Aggregate. The Prospecting right area can only be located within the Prospecting Right area.

PART B

3. ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

3.1 Environmental management programme

- a. Details of the EAP**, (Confirm that the requirement for the provision of the details and expertise of the EAP are already included in PART A, section 1(a) herein as required)

Details of the EAP managing the project are provided on part A of this report

- b. Description of the Aspects of the activity**(Confirm that the requirements to describe the aspects of the activity that are covered by the FINAL environmental management programme is already included in PART A section (1)(h) herein as required)

The EAP managing the project confirms that the aspects are covered in part A of this report

a) Composite map

Provide a map (Attached as an Appendix) at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructures on the environmental sensitivities of the proffered site, indicating any areas that should be avoided, including buffers).

Figure 5 shows a composite map with superimposed activities that will take place on the prospecting site, this map is also attached as Appendix 6.

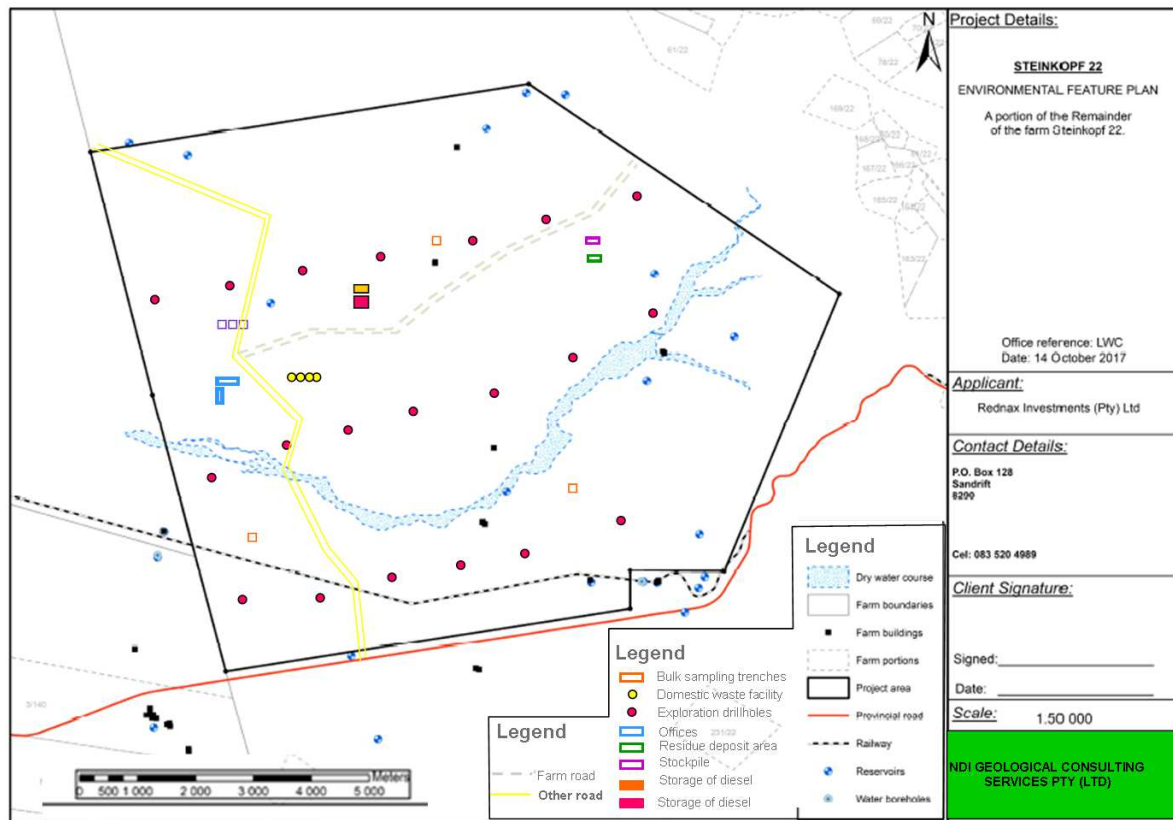


Figure 5: Composite map of the prospecting area

b) Description of impact management objectives including management statements

- i. **Determination of closure objectives.** (ensure that the closure objectives are informed by the type of environment describe in 2.4 herein)

The goal upon decommissioning and closing of the prospecting activities will be communicated with all relevant parties. Decommissioning includes mitigation of all negative environmental impacts and that there are no amendments to the receiving environment. Disturbed areas will be backfilled and shaped to an acceptable state and in line with environmental legislations and policies.

It should be noted that upon closure all disturbed areas will be backfilled and rehabilitated. The Environmental Management Programme has been prepared to provide basic environmental management for the contractors, employees, visitors that will be appointed or visit the prospecting area.

Specific attention will be given to the following:

- To prevent the sterilization of any ore reserves;
- To prevent the establishment of any permanent structures or features during prospecting period;
- To manage and limit any impact to the surface and groundwater aquifers in such a way that an acceptable water quality and yield can still be obtained, when a closure certificate is issued;
- To safeguard the safety and health of humans and animals during prospecting period;
- The last closure objective is that the mine is closed efficiently, cost effectively and in accordance with government policy;
- Capping of all drilled boreholes;
- Backfilling of trenches;
- Re-establishment of Biodiversity;
- Re-establishment of vegetation species;
- Return the land to possibly its original state;
- To ensure that all fencing is left as it was in pre-prospecting status.

ii. The process for managing any environmental damage, pollution, pumping and treatment of extraneous water or ecological degradation as a result of undertaking a listed activity

This section describes the approach taken by the EAP in preparation of Part B of this report.

Environmental Management Approach

Globally, there are a number of tools or guideline documents available to assist or describe environmental management. The purpose of an EMPr (Part B of this report) is to describe the process of managing identified potential environmental impacts and risks described in Part A of this report (EIR) throughout the entire life span (from implementation, operation, and decommissioning) of the proposed prospecting project. The IEM (Integrated Environmental Management) tool used for managing the identified environmental impacts by the EAP in this document is the Environmental Management System (EMS). This approach will assist the project to achieve continual improvement in environmental performance.

Specialist recommendations

A number of specialist investigations formed part of the EIA process and resulted in a number of findings and recommendations. These reports provided specific mitigation and management measures as a recommendation. These findings have been considered throughout the development of the EMPr.

- iii. **Potential risk of Acid Mine Drainage.**(Indicate whether or not the mining can results in acid mine drainage)

The potential risk for acid mine drainage was not determined as the proposed prospecting mining activities are not expected to be afflicted by acid-producing wastes.

Iv Steps taken to investigate, assess, and evaluate the impact of acid mine drainage

No steps were taken to investigate, assess, and evaluate the impact of acid mine drainage, as this potential risk is not foreseen as part of Sand and Aggregate prospecting related mining activities. The prospecting activities will not use any chemicals for processing both Sand and Aggregate.

v Engineering or mine design solutions to be implemented to avoid or remedy acid mine drainage

No risk expected.

vi Measures that will be put in place to remedy any residual or cumulative impact that may result from acid mine drainage

No risk expected.

vii. Volumes and rate of water use required for the mining, trenching or bulk sampling operation.

An estimated amount of less than 10 000 liters of water will be required to run day to day prospecting activities.

viii. Has a water use licence been applied for?

An application for a general authorisation water use in terms of Section 21 of the National water act 36 of 1998 to undertake the following activities is applied for:

(a) taking water from a water resource;

(b) storing water;

ix Impacts to be mitigated in their respective phases

Table 15 below outlines the impacts to be mitigated

Table 15: Measures to rehabilitate the environment affected by the undertaking of any listed activity

<p>ACTIVITIES (E.g. For mining - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc E.g. For mining,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and excavations, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)</p>	<p>PHASE (of operation in which activity will take place. State; Planning and design, Pre-Construction' Construction, Operational, Rehabilitation, Closure, Post closure).</p>	<p>SIZE AND SCALE of disturbance (volumes, tonnages and hectares or m²)</p>	<p>MITIGATION MEASURES (describe how each of the recommendations in herein will remedy the cause of pollution or degradation and migration of pollutants)</p>	<p>COMPLIANCE WITH STANDARDS (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)</p>	<p>TIME PERIOD FOR IMPLEMENTATION Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regards to Rehabilitation, therefore state either:- Upon cessation of the individual activity or. Upon the cessation of mining, bulk sampling or alluvial diamond mining as the case may be.</p>
Literature Review	Planning	-	Mitigation not proposed	-	-

Geological Mapping	Planning	--	No mitigation proposed	-	-
Geophysical Mapping	Planning	-	<p>Farm owners will be consulted with regard to the access to the proposed prospecting site.</p> <p>Gates will be closed after entering and departing the proposed prospecting.</p> <p>No poaching will be allowed on site.</p>	<ul style="list-style-type: none"> • Compliance with EMPr • Compliance with Competent Authorities requests and regulation • EATC and ECO inspection 	Mitigation measures will be implemented when required.
Site establishment	Construction	8028.7077ha	<p>Existing tracks must be used as far as practicable.</p> <ul style="list-style-type: none"> • Avoid veld fires, • The prospecting area will be demarcated by means of fence. • The area for fuel storage will be demarcated by means constructing a cement slab with 	<p>The applicant will make sure that the employees comply with the standard laid out in the Environmental Management Programme and the Environmental</p>	<p>Mitigation measures will be implemented when required. However, other mitigations measures such as using of existing tracks will be implemented from the</p>

			<p>bund walls around.</p> <ul style="list-style-type: none"> • Sensitive areas like pans, valleys, gullies and dry wash will be avoided. • Large established trees and bushes will also be avoided. • If any fauna species is found during site establishment stage, they will be properly relocated to other portions of the farm. 	<p>Authorisation including their conditions and /or conditions identified by Competent Authority. This to be done by way of regular EATC (training) and regular Environmental inspection and auditing.</p>	<p>commencement of this activity until cessation of activity.</p>
Vegetation clearance	Construction & Operational	1 ha	<ul style="list-style-type: none"> • Existing tracks must be used as far as practicable. • Large trees and thick bushes to be left in situ as far as is practicably possible • Avoid veld fires, Where vegetation clearance is unavoidable, preferable to brush cut at surface level and retains root structure in place. • The individuals of any protected plant species should be retained <i>in situ</i> wherever possible. Permits 	<ul style="list-style-type: none"> • Compliance with EMPR • Compliance with Competent Authorities requests and regulation • EATC and ECO inspection 	<ul style="list-style-type: none"> • Mitigation measures to be in place prior to activity. • In event of an critical incident with environmental significance, remedial and mitigation to be Immediately

			have to be obtained from NCDENC and/or DAFF for the removal of protected species from the site.		carried out on site
Construction of access roads	Construction	200 m ²	<ul style="list-style-type: none"> • Avoid unnecessary construction of newly roads and use existing roads. • Dust suppression methods will be implemented. • limit a speed to 30kh/h • Limit road width to 3m • Avoid new road construction over listed trees and shrubs and other sensitively identified areas such as loose sands and dry wash areas. 	<ul style="list-style-type: none"> • Compliance with EMPR • Compliance with Competent Authorities requests and regulation • EATC and ECO inspection 	<ul style="list-style-type: none"> • Mitigation measures to be in place prior to activity. • In event of an critical incident with environmental significance , remedial and mitigation to be Immediately carried out on site
Temporary topsoil storage area	Construction	0.01ha	<ul style="list-style-type: none"> • Remove topsoil from all areas that will be subject to boreholes. • Topsoil will be stored on the high ground of the prospecting area 	<ul style="list-style-type: none"> • Compliance with EMPR • Compliance with Competent 	<ul style="list-style-type: none"> • Immediate when topsoil is grubbed and stockpiled

			<p>outside flood plain, stockpiles will be at the maximum of 2m in height to prevent crushing of seed stock and micro-organisms.</p> <ul style="list-style-type: none"> • Berms built around stockpile to divert storm water • Topsoil to be covered with shade cloth or netting to prevent wind removal and desiccation or • Topsoil stockpile will not be disturbed or used for construction/ maintenance of roads. 	<p>Authorities requests and regulation</p> <ul style="list-style-type: none"> • EATC and ECO inspection 		
Temporary office	Mobile	Construction & Operation	0.002 ha	<ul style="list-style-type: none"> • On removal and rehabilitation the compacted surface will be ripped to a depth of 300mm in order to allow regrowth. • When establishing the office and vegetation clearance is unavoidable, preferable to brush cut at surface level and retain root structure in place to bind and hold soil and to aid rehab after 	<ul style="list-style-type: none"> • Compliance with EMPr • Compliance with Competent Authorities requests and regulation 	<p>Immediate when office is installed on mine and after removal off site</p>

			removal of site office.		
Storage of dumps	Operational	0.02 ha	<ul style="list-style-type: none"> • After replacement of waste dumps into pit, the compacted surface will be ripped to a depth of 300mm in order to allow regrowth. • No permanent dump will be left on site. • Prior to establishment of waste dump the topsoil is to be grubbed and stored. • Boundary surrounding waste dump to be constructed to prevent veld encroachment. 	<ul style="list-style-type: none"> • Compliance with EMP • Compliance with Competent Authorities requests and regulation 	<ul style="list-style-type: none"> • Mitigation measures to be put in place prior to establishment of waste dump. • Ongoing mitigation and waste dump maintenance throughout life period of mine.
Ablution area	Construction & Operation	0.0010 ha	<ul style="list-style-type: none"> • The containers will be emptied by qualified applicant regularly to avoid health risk. • Doors will be kept locked at all times to prevent toilet paper from blowing into veld. • Facility will be locked during mine closure weekends when personnel on not on site 	<ul style="list-style-type: none"> • Compliance with EMPr • Compliance with Competent Authorities requests and regulation • EATC and ECO inspection 	ongoing and with weekly regularity throughout life of mine

Boreholes drilling and trenching	Operational	3 ha	<ul style="list-style-type: none"> • Concurrent rehabilitation will be implemented throughout the prospecting operation, meaning that each borehole will be rehabilitated before moving to the next drilling area. This method will also be applied when trenching. • All boreholes will be capped. • Trenches will be backfilled • This minimises open exposed borehole areas, thereby reducing soil and microbe loss and limiting erosion • The area will be rehabilitated close to its original state meaning that livestock grazing can continue as before. • Access control procedures must be agreed on with farm owners. • If any heritage site or resource is identified during the drilling period, it will be reported to SAHRA. 	<ul style="list-style-type: none"> • Compliance with EMP • Compliance with Competent Authorities requests and regulation 	throughout prospecting period and upon cessation of the individual activity
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			<ul style="list-style-type: none"> •Prospecting will be contained within the site and unnecessary disturbance of the site and surrounding environment and vegetation will be avoided. Boundary fencing is essential. •All care must be taken to avoid the establishment of alien invasive plants. Implement a monitoring program for the early detection of alien invasive plant species and a control program to combat declared alien invasive plant species should be continued during the operational phase. •Indigenous trees and shrubs should be retained around the footprint of the borehole because they form important food sources and habitats for various animal species. 		
Temporarily mobile storage container	Construction & operational	0.0025 ha	<ul style="list-style-type: none"> • Hydrocarbon will be stored within the sealed mobile 	<ul style="list-style-type: none"> • Compliance with EMPR 	Throughout Operational period of

			<p>containers.</p> <ul style="list-style-type: none"> • Drip trays will be placed under each stationary equipment or vehicles to avoid soil contamination which may lead to water pollution • Taking precautions on the refuelling point. • If any soil is contaminated during the life of the prospecting activities, it will be immediately scooped, bagged and stored in the enclosed containers or plastic to be removed with the industrial waste to a recognized licensed facility for further treatment. • Small spills will be treated on site using bio-sorb, bio-shock or oil cap. • No smoking signage to be in place at Fuel Safe Storage areas. Fire Hydrant to be in 	<ul style="list-style-type: none"> • Compliance with Competent Authorities requests and regulation. • EATC and ECO inspection. 	<p>the mine.</p>
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			place at Fuel Safe Storage areas and to be serviced, and charged.		
Final rehabilitation	Rehabilitation	8028.7077ha	<ul style="list-style-type: none"> • Drilled boreholes and trenches are to be capped and backfilled • Topsoil will be spread over the backfilled area in order to allow regrowth of vegetation. All machinery will be removed from the site. • Ripping of all compacted surface • Removal of all marked containers and disposed waste at a registered facility • All equipment and mobile infrastructure will be moved out of the prospecting area. 	<ul style="list-style-type: none"> • Compliance with EMPR • Compliance with Competent Authorities requests and regulation 	Upon cessation of prospecting, during rehabilitation phase.
Monitoring	Closure	8028.7077ha	Monitoring of all rehabilitated areas will be done to make sure if vegetation is growing and if not other mitigation measures as seeding of the area will be	<ul style="list-style-type: none"> • Compliance with EMPr • Compliance with Competent Authorities requests 	Post closure and post rehabilitation.

			considered. All invader species will be monitored and removed from all rehabilitated areas	and regulation	
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c) Impact Management Outcomes

(A description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated in paragraph)

The Impact Management Outcomes caused by prospecting activities are outlined in Table 16 below.

Table 16: A description of impact management outcomes

ACTIVITY (whether listed or not listed). (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and excavations, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	ASPECTS AFFECTED	PHASE In which impact is anticipated (e.g. Construction, commissioning, operational Decommissioning , closure, post-closure)	MITIGATION TYPE (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) E.g. <input type="checkbox"/> Modify through alternative method. <input type="checkbox"/> Control through noise control <input type="checkbox"/> Control through management and monitoring <input type="checkbox"/> Remedy through rehabilitation..	STANDARD TO BE ACHIEVED (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
Literature Review	None	N/A	Planning	No mitigation proposed	-
Geological Mapping	None	N/A	Planning	No mitigation proposed	-
Geophysical Mapping	Poor access control which may result into	fauna and people	Planning	Control through management and monitoring measure as follows:	Impact avoided

	livestock theft.			<p>Farm owners will be consulted with regard to the access to the proposed prospecting site.</p> <p>Gates will be closed and locked after entering and departing the proposed prospecting.</p> <p>No poaching will be allowed on site.</p>	
Site establishment	Vegetation loss	Environment & fauna	Construction	<ul style="list-style-type: none"> • Remedy through rehabilitation and re-vegetation. • Remedy through ripping of compacted ground 	<p>Rehabilitation standards.</p> <p>Site to be rehabilitated to former land use with similar biodiversity component as pre-prospecting and to acceptable visual standard.</p>
	Compaction of ground				
Vegetation clearance	Vegetation loss	Environment & fauna	Construction & operational	<ul style="list-style-type: none"> • Avoid unnecessary removal of vegetation Using existing roads as far as practicable Remedy through rehabilitation and re-vegetation. Control through dust suppression methods 	<p>Vegetation to be regenerated to resemble former species composition. Alien intrusion to be eradicated.</p>
	soil erosion				
Construction of access roads	Vegetation loss	Environment	Construction	<ul style="list-style-type: none"> • Using existing roads as far as practicable • Remedy through rehabilitation • Control through management and 	<p>Impact avoided, dust levels and rehabilitation standards.</p>
	Dust				

	Ground compaction	& animals	&operational	monitoring.	Avoid construction as far as practically possible Roads will be less than 3m width Roads to avoid sensitive areas and Listed Vegetation After rehab and closure new roads will be left in situ to aid landowner and provide improved farm infrastructure.
Topsoil removal and stockpiling	Erosion	Environment & people	Construction & operational	<ul style="list-style-type: none"> • Storm water control measures, • Dust control measures and monitoring • Remedy through ripping of compacted ground/surface 	Impacts control and dust levels
	Dust				
	Ground compaction				
Temporal office site	Mobile Ground compaction	Environment	Construction & operational	Remedy through ripping of compacted ground/surface	Surface under where structure was situated to be rehabilitated, to ensure vegetation will adequately regrow and biodiversity and former land use is re-

					established.
Storage of Waste Dumps	Ground compaction Visual impacts	Environment & animals	Construction	Remedy through rehabilitation	Surface under where structure was situated to be rehabilitated, to ensure vegetation will adequately regrow and biodiversity and former land use is re-established.
Ablution area	Health risk	Environment & people	Construction & Operational	Control through management and monitoring	Regular cleaning Maintain adequate health standard and compliance with O H & S. Keep doors closed
Borehole drilling and trenching	Vegetation loss	Environment and fauna	Operational phase	<ul style="list-style-type: none"> • Avoid unnecessary removal of vegetation • Using existing roads as far as practicable • Remedy through rehabilitation and re-vegetation. • Control through dust suppression methods. • Control through management and 	Impact avoided, noise levels, dust levels, rehabilitation standards and end use objectives) Land surface where trenching was situated to be rehabilitated, to
	-Surface disturbances	Environment and fauna			
	Biodiversity loss	Environment and fauna			
	Visual impacts	People			

	Soil pollution	Environment			
	Surface and ground Water pollution	Environment & people			
	Health risk to workers or general public	people			
	Heritage resource disturbances	Heritage sites			
	Soil erosion	Environment			
	Veld Fire	Environment, fauna and people			
	Domestic waste generation	Environment			
	Noise	People and fauna			
				<p>monitoring.</p> <ul style="list-style-type: none"> • Capping all boreholes to prevent fauna from falling into. • Concurrent rehabilitation or creation of bufferzone. • Using drip tray, taking precautions on the refuelling point. • If any soil is contaminated during the life of the prospecting activities, it will be immediately scooped, bagged and stored in the enclosed containers or plastic to be removed with the industrial waste to a recognized licensed facility for further treatment. • Small spills will be treated on site using bio-sorb, bio-shock or oil cap. • Avoid soil contamination throughout the life span of the mine. • Employees will be provided with proper personal protective equipment. • If any heritage site or resource is identified during the drilling period, it will be reported to SAHRA. 	<p>ensure vegetation will adequately regrow and biodiversity and former land use is re-established.</p>

				<ul style="list-style-type: none"> • Creation of berms, and proper storage of topsoil stockpiles. • Environmental awareness. • Rehabilitation and return the area to its original state, • Seeding of rehabilitated area if vegetation did not grow natural in order to attract fauna. • Marked containers will be utilise to store domestic waste. • Employees will be inducted on how to sort their waste. • Waste will be taken to the municipality dumping site on the weekly basis • Noise will be kept minimal on working hours and monitoring. • Ripping of road. • Avoid construction of newly roads and use existing roads. 	
Final rehabilitation	Dust	people	Decommissioning	<ul style="list-style-type: none"> • Topsoil will be spread over the rehabilitated soil in order to allow regrowth of vegetation. • All machinery will be removed from the 	Rehabilitation standard to be achieved. Former vegetation species and Biodiversity to be re-
	Noise	People and animals			
	Domestic	environment			

	waste			<p>site.</p> <ul style="list-style-type: none"> Ripping of all remaining compacted surface 	<p>instated as far as possible, alien infestation to be controlled. Former land use objectives standards to be re-instated to livestock grazing</p>
Monitoring	-	Environment	Closure and post closure	<ul style="list-style-type: none"> Monitoring of all rehabilitated areas will be done to make sure if vegetation is growing and if not other mitigation measures as seeding of the area will be considered. All invader species will be monitored and removed from all rehabilitated areas 	<p>Rehabilitation and end land use Rehabilitation standard to be achieved. Former vegetation species and Biodiversity to be re-instated as far as possible, alien infestation to be controlled. Former land use objectives standards to be re-instated to livestock grazing</p>

d) Impact management actions

(A description of impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (c) and (d) will be achieved)

Impact management actions are presented in Table 15

Table 17: A description of impact management actions

<p>ACTIVITY whether listed or not listed. (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and excavations, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).</p>	<p>POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)</p>	<p>MITIGATION TYPE (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) E.g. <input type="checkbox"/> Modify through alternative method. <input type="checkbox"/> Control through noise control <input type="checkbox"/> Control through management and monitoring Remedy through rehabilitation..</p>	<p>TIME PERIOD FOR IMPLEMENTATION Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:- Upon cessation of the individual activity or. Upon the cessation of mining, bulk sampling or alluvial diamond mining as the case may be.</p>	<p>COMPLIANCE WITH STANDARDS (A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)</p>
<p>Literature Review</p>	<p>None</p>	<p>No mitigation proposed</p>	<p>Planning Stage</p>	<p>The applicant will make sure that the employees or anyone who enter the</p>

				prospecting area must comply with the environmental management standards as stipulated on the environmental authorization and PWP.
Geological Mapping	None	No mitigation proposed	Planning Stage	The applicant will make sure that the employees or anyone who enter the prospecting area must comply with the environmental management standards as stipulated on the environmental authorization and PWP.
Geophysical Mapping	Poor access control which may result into livestock theft.	Farm owners will be consulted with regard to the access to the proposed prospecting site. Gates will be closed after entering and departing the proposed prospecting. No poaching will be allowed	Planning Stage	The applicant will make sure that the employees or anyone who enter the prospecting area must comply with the environmental management standards as stipulated on the environmental

		on site.		authorization and PWP.
Site establishment	<ul style="list-style-type: none"> • Vegetation loss • Compaction of ground 	<ul style="list-style-type: none"> • Remedy through rehabilitation and re-vegetation. • Remedy through ripping of compacted ground 	Mitigation measures will be implemented when required. However, other mitigations measures such as existing tracks will be implemented from the commencement of this activity until cessation of activity.	The applicant will make sure that the employees or anyone who enter the prospecting area must comply with the environmental management standards as stipulated on the environmental authorization and EMPr. The applicant will work in accordance with listed activity no.20 of NEMA regulations.
Vegetation clearance	<ul style="list-style-type: none"> • Vegetation loss • soil erosion 	<ul style="list-style-type: none"> • Avoid unnecessary removal of vegetation Using existing roads as far as practicable Remedy 	<ul style="list-style-type: none"> • Mitigation measures to be in place prior to activity. • In event of an critical incident with environmental 	The applicant will make sure that the employees or anyone who enter the prospecting area must

		through rehabilitation and re-Vegetation. Control through dust suppression methods	significance , remedial and mitigation to be Immediately carried out on site	comply with the environmental management standards as stipulated on the environmental authorization and EMPr. The applicant will work in accordance with listed activity no.20 of NEMA regulations.
Construction of access roads	<ul style="list-style-type: none"> • Vegetation loss • Dust • Ground compaction 	<ul style="list-style-type: none"> • Using existing roads as far as practicable • Remedy through rehabilitation • Control through management and monitoring. 	<ul style="list-style-type: none"> • Mitigation measures to be in place prior to activity. • In event of an critical incident with environmental significance , remedial and mitigation to be Immediately carried out on site 	The applicant will make sure that the employees or anyone who enter the prospecting area must comply with the environmental management standards as stipulated on the environmental authorization and EMPr. The applicant will work in accordance with listed activity no.20 of NEMA

				regulations.
Topsoil removal and stockpiling	<ul style="list-style-type: none"> • Erosion • Dust • Vegetation loss 	<ul style="list-style-type: none"> • Storm water control measures, • Dust control measures and monitoring • Remedy through ripping of compacted ground/surface 	<ul style="list-style-type: none"> • Immediate when topsoil is grubbed and stockpiled 	The applicant will make sure that the employees or anyone who enter the prospecting area must comply with the environmental management standards as stipulated on the environmental authorization and EMPr. The applicant will work in accordance with listed activity no.20 of NEMA regulations.
Temporal Mobile office site	<ul style="list-style-type: none"> • Surface compaction • Vegetation loss 	<ul style="list-style-type: none"> • Remedy through ripping of compacted ground/surface 	Immediate when office is installed on mine and after removal off site	The applicant will make sure that the employees or anyone who enter the prospecting area must comply with the environmental management standards as stipulated on the environmental

				authorization and EMPr. The applicant will work in accordance with listed activity no.20 of NEMA regulations.
Temporal Storage of dumps	<ul style="list-style-type: none"> • Visual impact • Surface compaction • Vegetation loss 	<ul style="list-style-type: none"> • Storm water control measures, • Dust control measures and monitoring • Remedy through ripping of compacted ground/surface 	<ul style="list-style-type: none"> • Mitigation measures to be put in place prior to establishment of waste dump. • Ongoing mitigation and waste dump maintenance throughout life period of mine. 	The applicant will make sure that the employees or anyone who enter the prospecting area must comply with the environmental management standards as stipulated on the environmental authorization and EMPr. The applicant will work in accordance with listed activity no.21 of NEMA regulations.
Ablution area	<ul style="list-style-type: none"> • Health risk 	<ul style="list-style-type: none"> • Control through management and monitoring 	ongoing and with weekly regularity throughout life of mine	The applicant will make sure that the employees or anyone who enter the prospecting area must

				comply with the environmental management standards as stipulated on the environmental authorization and EMPr. The applicant will work in accordance with listed activity no.20 of NEMA regulations.
Borehole drilling and trenching	<ul style="list-style-type: none"> • Vegetation loss • Surface disturbances • Biodiversity loss • Visual impacts • Soil pollution • Surface and ground Water pollution • Health risk to workers or general public 	<ul style="list-style-type: none"> • Avoid unnecessary removal of vegetation • Using existing roads as far as practicable • Remedy through rehabilitation and re-vegetation. • Control through dust suppression methods. • Control through management and monitoring. • Capping of all unused boreholes. 	Throughout prospecting period and upon cessation of the individual activity	The applicant will make sure that the employees or anyone who enter the prospecting area must comply with the environmental management standards as stipulated on the environmental authorization and EMPr. The applicant will work in accordance with listed activity no.20 of NEMA regulations.

	<ul style="list-style-type: none"> • Heritage resource disturbances • Soil erosion • Veld Fire • Domestic waste generation • Noise 	<ul style="list-style-type: none"> • Concurrent rehabilitation. • Using drip tray, taking precautions on the refuelling point. • If any soil is contaminated during the life of the prospecting activities, it will immediately be scooped, bagged and stored in the enclosed containers or plastic to be removed with the industrial waste to a recognized licenced facility for further treatment. • Small spills will be treated on site using bio-sorb or oil cap. • Avoid soil contamination throughout the life span of the mine. • Employees will be 		
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		<p>provided with proper personal protective equipment</p> <ul style="list-style-type: none">• If any heritage site or resource is identified during the drilling period, it will be reported to SAHRA.• Creation of berms, and proper storage of topsoil stockpiles.• Environmental awareness.• Rehabilitation and return the area to its original state,• Seeding of rehabilitated area if vegetation did not grow natural in order to attract fauna.• Marked containers will be utilised to store domestic waste.		
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		<ul style="list-style-type: none"> • Employees will be inducted on how to sort their waste. • Waste will be taken to the municipality dumping site on the weekly basis • Noise will be kept minimal on working hours and monitoring. • Ripping of road. • Avoid construction of newly roads and use existing roads. • Dust suppression methods will be implemented. 		
Vehicle maintenance	<ul style="list-style-type: none"> • Soil pollution 	No maintenance will be done on site	Immediate on repair of any vehicle or plant equipment	The applicant will make sure that the employees or anyone who enter the prospecting area must comply with the environmental management standards as stipulated on

				the environmental authorization and EMPr. The applicant will work in accordance with listed activity no.20 of NEMA regulations.
Vehicles movement within the prospecting area.	<ul style="list-style-type: none"> • dust • noise • Ground compaction 	<ul style="list-style-type: none"> • Noise levels must comply with OHS regulations. • Noise generating activities should be restricted to normal working hours. Mine is noted to be remote from any settlement and human habitation • Vehicle exhaust systems should be in good state of maintenance with standard noise suppression equipment. • Personnel will wear PPE, specifically ear muffs to suppress noise levels when using machinery. 	throughout prospecting period and upon cessation of the individual activity	The applicant will make sure that the employees or anyone who enter the prospecting area must comply with the environmental management standards as stipulated on the environmental authorization and EMPr. The applicant will work in accordance with listed activity no.20 of NEMA regulations.

		<ul style="list-style-type: none"> • Ripping of the compacted ground to 300m in order to allow vegetation growth <p>Dust suppression measure will be applied in order to control and manage dust.</p>		
Hydrocarbon storage	<ul style="list-style-type: none"> • Soil pollution • Water pollution 	<ul style="list-style-type: none"> • Pollution control measures • Hydrocarbon will be stored within the sealed mobile containers. • Drip trays will be placed under each stationary equipment or vehicles to avoid soil contamination which may lead to water pollution • Taking precautions on the refuelling point. • If any soil is contaminated during the life of the prospecting activities, it will be 	Throughout Operational period of the mine	The applicant will make sure that the employees or anyone who enter the prospecting area must comply with the environmental management standards as stipulated on the environmental authorization and EMPr. The applicant will work in accordance with listed activity no.20 of NEMA regulations.

		<p>immediately scooped, bagged and stored in the enclosed containers or plastic to be removed with the industrial waste to a recognized licenced facility for further treatment.</p> <ul style="list-style-type: none"> • Small spills will be treated on site using bio-sorb or oil cap. 		
Final rehabilitation	<ul style="list-style-type: none"> • Dust • Noise • Domestic waste 	<ul style="list-style-type: none"> • Topsoil will be spread over the rehabilitated areas in order to allow regrowth of vegetation. • All machinery will be removed from the site. • Ripping of all remaining compacted surface 	Upon cessation of prospecting, during rehabilitation phase.	The applicant will make sure that the employees or anyone who enter the prospecting area must comply with the environmental management standards as stipulated on the environmental authorization and EMPR. The applicant will work in accordance with listed activity no.20 of NEMA

				regulations.
Monitoring	-	<ul style="list-style-type: none"> Monitoring of all rehabilitated areas will be done to make sure if vegetation is growing and if not other mitigation measures as seeding of the area will be considered. All invader species will be monitored and removed from all rehabilitated areas 	Post closure and post rehabilitation.	The applicant will make sure that the employees or anyone who enter the prospecting area must comply with the environmental management standards as stipulated on the environmental authorization and EMPR. The applicant will work in accordance with listed activity no.20 of NEMA regulations.

(i) Financial provision

1. Determination of the amount of Financial Provision

a. Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under regulation 22 (2) (d) as described in 2.4 herein

The closure objectives are to create a post-prospecting state as close as possible to the pre-prospecting state of the environment. This can be accomplished by the correctness of rehabilitation and proper after-care activities.

- To prevent the sterilization of any ore reserves;
- To prevent the establishment of any permanent structures or features
- To manage and limit any environmental impact to the surface water and groundwater aquifers in such a way that an acceptable water quality and yield can still be obtained, when a closure certificate is issued;
- To safeguard the safety and health of humans and animals within the area;
- Capping of all drilled boreholes;
- Backfilling of all sample pits;
- Re-establishment of biodiversity;
- Re-establishment of vegetation species;
- Return the land to landowner possibly the same as the pre prospecting;
- To ensure that all fencing is left as it was in pre-prospecting status;
- The last closure objective is that the mine is closed efficiently, cost effectively and in accordance with relevant policies.

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

The EAP confirms that all mitigation measures and closure objectives were communicated and will still be communicated further with the interested and affected parties.

c. Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main mining activities, including the anticipated mining area at the time of closure.

The goal of rehabilitation with respect to the area where drilling took place is to leave the area similar to its previous state prior prospecting activity. All other equipment and material used during operation will be removed from the area. Removal of these materials shall be done on a continuous basis and not only at the final stage of rehabilitation and closure.

- All boreholes will be capped to prevent any injury to fauna;
- Rehabilitation of drilled boreholes and trenches will be done immediately after is completed to prevent degradation of the environment and to prevent injuries to animals;
- All compacted areas will be ripped to a depth of 300mm in order to allow vegetation to re-grow;
- Mobile equipment will be removed from the site;
- The area will be seeded with surrounding plant species if necessary, this will attract back local animal life into the area;
- Waste containers will be removed from the site;
- No latent or residual impact may be encountered after completion of rehabilitation and backfilling;
- The area will be returned to possibly its previous state.

d. Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives.

The main objectives of both rehabilitation plan and closure plans are aligned. The goal of rehabilitation with respect to the area where drilling and trenching took place is to leave the area similar to its previous state prior prospecting activity. All other equipment and material used during the lifespan of the prospecting will be removed from site, including other waste material. Removal of these materials shall be done on a continuous basis and not only at the final phase of rehabilitation and closure. To achieve this, the applicant has to practice concurrent rehabilitation from the commencement of the prospecting activities to the end. This could be accomplished by effectively implementing the EMPr condition and adhering to them at all times. The financial provision for rehabilitation and management of negative impact will assist to achieve the rehabilitation plan together with the closure objectives.

e. Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guidelines

Table 18 below shows how the final amount was derived

Table 18: Calculation of the quantum

CALCULATION OF THE QUANTUM							
Applicant: REDNAX INVESTMENT (PTY) LTD		DMR Ref No:		NC 30/5/1/1/2/12091 PR			
Evaluators: Ndi Geological Consulting Service (Pty) Ltd		Date:		30-05-18			
No.	Description	Unit	A	B	C	D	E=A*B*C*D
			Quantity	Master Rate	Multiplication factor	Weighting factor 1	Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	200	14.55	1	1	2910
2 (A)	Demolition of steel buildings and structures	m2	0	202.63	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	298.61	1	1	0
3	Rehabilitation of access roads	m2	1000	36.26	1	1	36260
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	351.93	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	191.96	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	405.26	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0.45	206254.16	0.52	1	48263.473
7	Sealing of shafts adits and inclines	m3	0	108.78	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0.04	141626.44	1	1	5665.0576
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	176393.17	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	512329.37	1	1	0
9	Rehabilitation of subsided areas	ha	0	118590.81	1	1	0
10	General surface rehabilitation	ha	0.05	112192.03	1	1	5609.6015
11	River diversions	ha	0	112192.03	1	1	0
12	Fencing	m	500	127.98	1	1	63990
13	Water management	ha	0	42658.57	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0.5	14930.5	1	1	7465.25
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
					Sub Total 1		170163.38
1	Preliminary and General		20419.6059	weighting factor 2			20419.606
					1		
2	Contingencies		17016.33825				17016.338
					Subtotal 2		207599.33
					VAT (14%)		29063.91
					Grand Total		236663

f. Confirm that the financial provision will be provided as

Rednax Investment hereby confirms that the financial provision to the amount of **R 236 663.20** will be provided as determined either by bank guarantee or cash deposit.

Mechanism for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon.

g. Monitoring of impact Management Actions

Monitoring of impact management actions will be monitored on a daily basis by either the Project Manager or Environmental Control Officer. Employees and appointed contractors will be work shopped for them to be able to identify, mitigate and minimise environmental impacts that maybe caused by the prospecting activities.

h. Monitoring and reporting frequency

Performance assessment or environmental report will be submitted annually to the Department of Mineral Resources. The Environmental Control Officer will prepare and submit weekly environmental report to the Site Manager and instruct mitigation measures to the identified deviation.

i. Responsible persons

Rednax Investment will appoint an Environmental Control Officer that will be responsible for the implementation of Environmental Management Programme.

j. Time period for implementing impact management actions

Implementation of Environmental Management Programme/ will be done throughout the prospecting period.

e) Mechanisms for monitoring compliances

Table 19 below shows how compliances will be monitored

Table 19: Mechanisms required for monitoring compliances

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
Vehicular movement	Dust	<ul style="list-style-type: none"> -Roads and dusty areas will be sprayed by water when there is a need. -This impact will be monitored throughout the day and where it is encountered it will be suppressed by means of spraying water. -Atmospheric Pollution Prevention Act will be followed at all times. -Dust fall-out buckets are properly located and this must also be monitored throughout the day. -Monitoring of dust exposure will includes use of active air sampling, passive dust collectors. -The National Environment Management: Air Quality Act, 2004 (Act No.39 of 2004) will be adhered to at all times. The Mine Health and Safety Act, 1996 (Act No. 29 of 1996) as amended and other legislation or regulations will also be 	Site Manager and Environmental Control Officer	<p>Daily and ongoing Reporting will be done weekly</p> <p>Time period for implementing impact management is immediately.</p>

		adhered to at all times to avoid air pollution.		
Contamination of soil as a result of Hydrocarbons storage and refuelling point	Soil & Water pollution	Vehicles and equipment will be monitored before the commencement of any daily Prospecting activity to avoid any soil contamination which may lead to ground water contamination. Surface water will be protected by adhering to The National Water Act, 1998 (Act No. 36 of 1998).	Environmental Control Officer will be responsible for all monitoring programmes. The site manager will be responsible overall monitoring programs.	Daily and ongoing Reporting will be done weekly Time period for implementing impact management is immediately.
Vehicles movement	Noise	Bureau of Standards Code of Practice for the Measurement and Assessment of Occupational Noise for Hearing Conservation Purposes, SABS 083 as amended, in any place at or in any mine or works where persons may travel or work, exceeds 82 dB (A), the site manager will take the necessary steps to reduce the noise below this level. Noise monitor machine will be used to monitor noise generated from the Prospecting activities if is exceeding the standard. The following will be adhered to: a) The Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) – Section 7. b) The Mine Health and Safety Act, 1996 (Act No. 39 of 1996) as amended.	Environmental Control Officer and Site Manager	Daily and ongoing Reporting will be done weekly Time period for implementing impact management is immediately.

		c)The Road Traffic Act, 1997 (Act No. 93 of 1997);		
Removal of vegetation and drilling	Interference with existing land use	<ul style="list-style-type: none"> -Inform landowners in writing of intent and comply with reasonable request to reduce the impact. -Negotiate compensation for interference with landowner/lawful occupier -Visual confirmation of rehabilitation -Approval of rehabilitation by landowner/lawful occupier 	Site Manager	<p>Daily and ongoing Reporting will be done weekly</p> <p>Time period for implementing impact management is immediately.</p>
Clearance of vegetation	Vegetation loss	<ul style="list-style-type: none"> -Site clearance to be kept to a minimum and avoid unnecessary removal of vegetation. -Visual inspection to make sure that vehicle utilise the existing tracks as possible. -No removal, disturbance or pruning of large to medium shrubs or tress -Visual marking of sensitive species 	Environmental Control Officer and Site Manager	<p>Daily and ongoing Reporting will be done weekly</p> <p>Time period for implementing impact management is 3 months.</p>
Movement of vehicles, poaching	Displacement, injury and death of local fauna;	<ul style="list-style-type: none"> -Site clearance to be kept to a minimum -Visual marking of sensitive species and areas -Visual inspection of fencing and/or other safety measures -On site log to be kept 	Site Manager	<p>Daily and ongoing Reporting will be done weekly</p> <p>Time period for implementing impact management is immediately.</p>
Removal of topsoil	Soil erosion;	Visual confirmation of soil erosion controls, soil profile disturbance and topsoil management where required.	Environmental Control Officer and Site Manager	Daily and ongoing monitoring

Waste generation and disposal	Land pollution	<ul style="list-style-type: none"> -Visual inspection that waste does not accumulate inside or outside drill site. -All waste such as oil spills must be stored separately and disposed of at a registered facility. -Proof of disposal must be kept on site. -EMP checklist will be compiled and utilised during the Prospecting period. 	Environmental Control Officer and Site Manager.	<p>Daily and ongoing Reporting will be done weekly basis.</p> <p>Time period for implementing impact management is immediately.</p>

f) Indicate the frequency of the submission of the performance assessment report

Environmental or performance assessment report will be submitted to the Department of Mineral Resources annually.

g) Environmental Awareness Plan

Document that will be guiding the awareness plan will be provided to the Site Manager by the Environmental Control Officer. By so doing employees will have to conduct daily Environmental talk before commencement of daily activity.

1. Manner in which the applicant intends to inform his or her employees of any environmental risk which may results from their work

Training will be provided to all employees. Initial environmental induction and or awareness will be conducted before commencement of any daily activity to all employees.

2. Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment.

Safety Health and Environmental talk will be done with employees by the Site Manager or the Environmental Control Officer with the employees and contractors on a daily basis. Visitors will be given induction before they can commence with the purpose of the visit.

h) Specific information required by the competent authority

- Rednax Investment (Pty) Ltd hereby confirms that the financial provision will be reviewed on an annual basis and the report of such review will be submitted to the Department of Mineral Resources.
- The Performance Assessment or Environmental Report will be compiled and submitted to the DMR annually or upon request by DMR.

2. UNDERTAKING

The EAP herewith confirms

- (a) the correctness of the information provided in the reports
- (b) the inclusion of comments and input from stakeholders and I&AP's
- (c) the inclusion of inputs and recommendations from the specialist report where relevant; and
- (d) the acceptability of the project in relation to the finding of the assessment and level of mitigation proposed;

Appendix 2.19.1

Heritage Specialist

Appendix 2.19.2

Botanical (Fauna/Flora) Specialist

Appendix 2.19.3

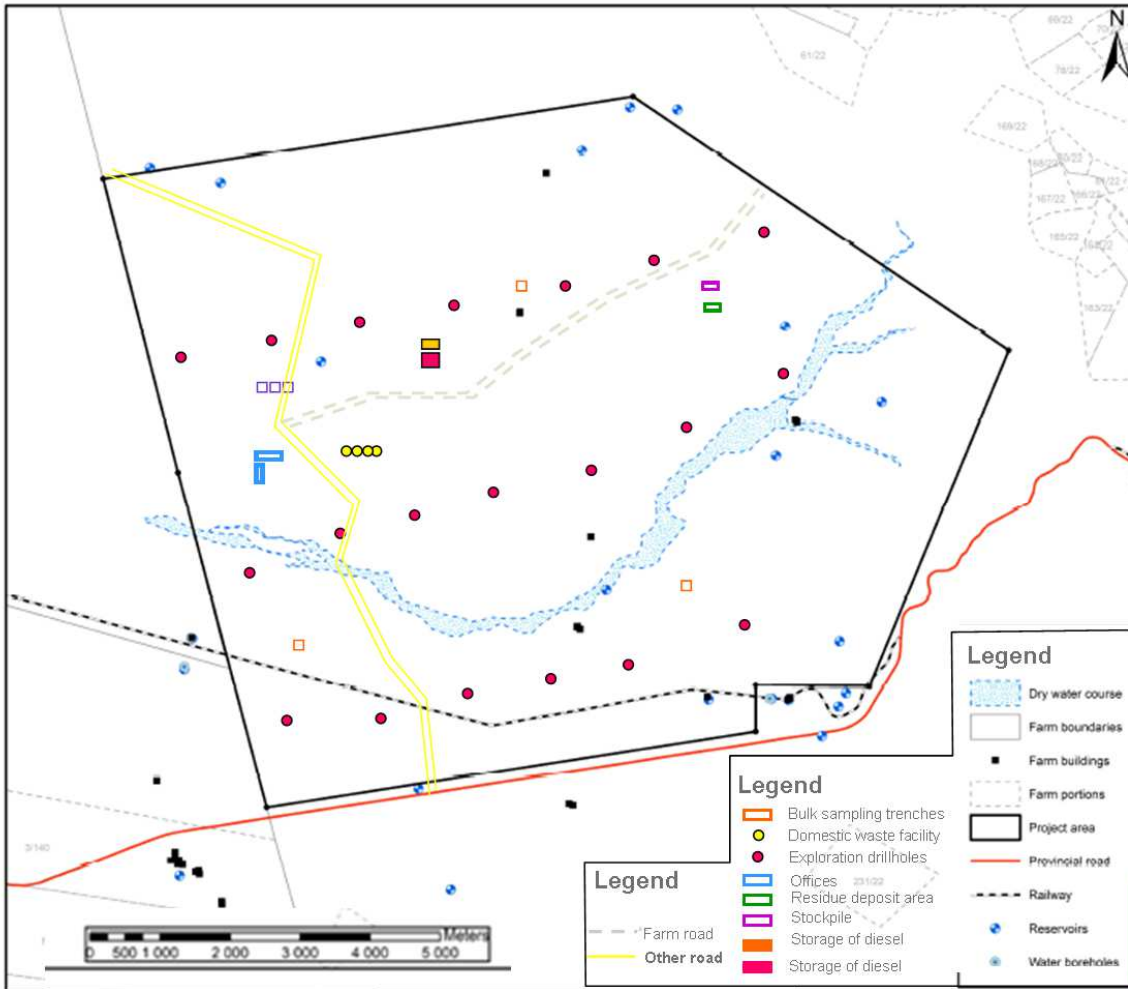
Geohydrological and hydrological specialist

Appendix 3

CV of EAP

Appendix 4

Site Plan



Project Details:	
STEINKOPF 22	
ENVIRONMENTAL FEATURE PLAN	
A portion of the Remainder of the farm Steinkopf 22.	
Office reference: LWC Date: 14 October 2017	
Applicant:	
Rednax Investments (Pty) Ltd	
Contact Details:	
P.O. Box 128 Sandrift 8200	
Cel: 083 520 4989	
Client Signature:	
Signed: _____	
Date: _____	
Scale: 1:50 000	
NDI GEOLOGICAL CONSULTING SERVICES PTY (LTD)	

Appendix 5

Public participation

Interested and affected parties. List the names of person consulted in this column, and mark with an X where those who must be consulted were in fact consulted		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant.	Section and paragraphs reference in this report where the issues and or response were incorporated
INTERESTED PARTIES					
Land owners					
Mr Nico Cloete	x	23 November 2017	Are you going to arrange another public participation meeting? As the adjacent farm owners and people residing within the application area are not present on this meeting	Definitely yes, It should be noted though that before we came here to this meeting we went to the proposed area to meet with the two families that are staying within the proposed application area unfortunately they were both absent. Further communication with be done directly with them	Public participation section
Community Member	x	23 November 2017	How to apply for the ownership of the Farm	It should be noted that we are not an expert when it comes to the application of owning Farms, but if a prospecting right is applied in a specific Farm it does not necessarily mean the applicant owns that Farm.	-
Community Member	x	23 November 2017	How are much are we going to be paid on a monthly basis	Salaries will be adjusted to market related by Rednax Investment themselves.	-
Heinrich	x	24 November 2017	I would like to register as an interested party in the EIA process of REDNAX INVESTMENT. We are a guest lodge situated in	The community member will be registered as an interested and affected party as requested. Rednax investment might want to utilise the guest lodge depending on the occasion but	-

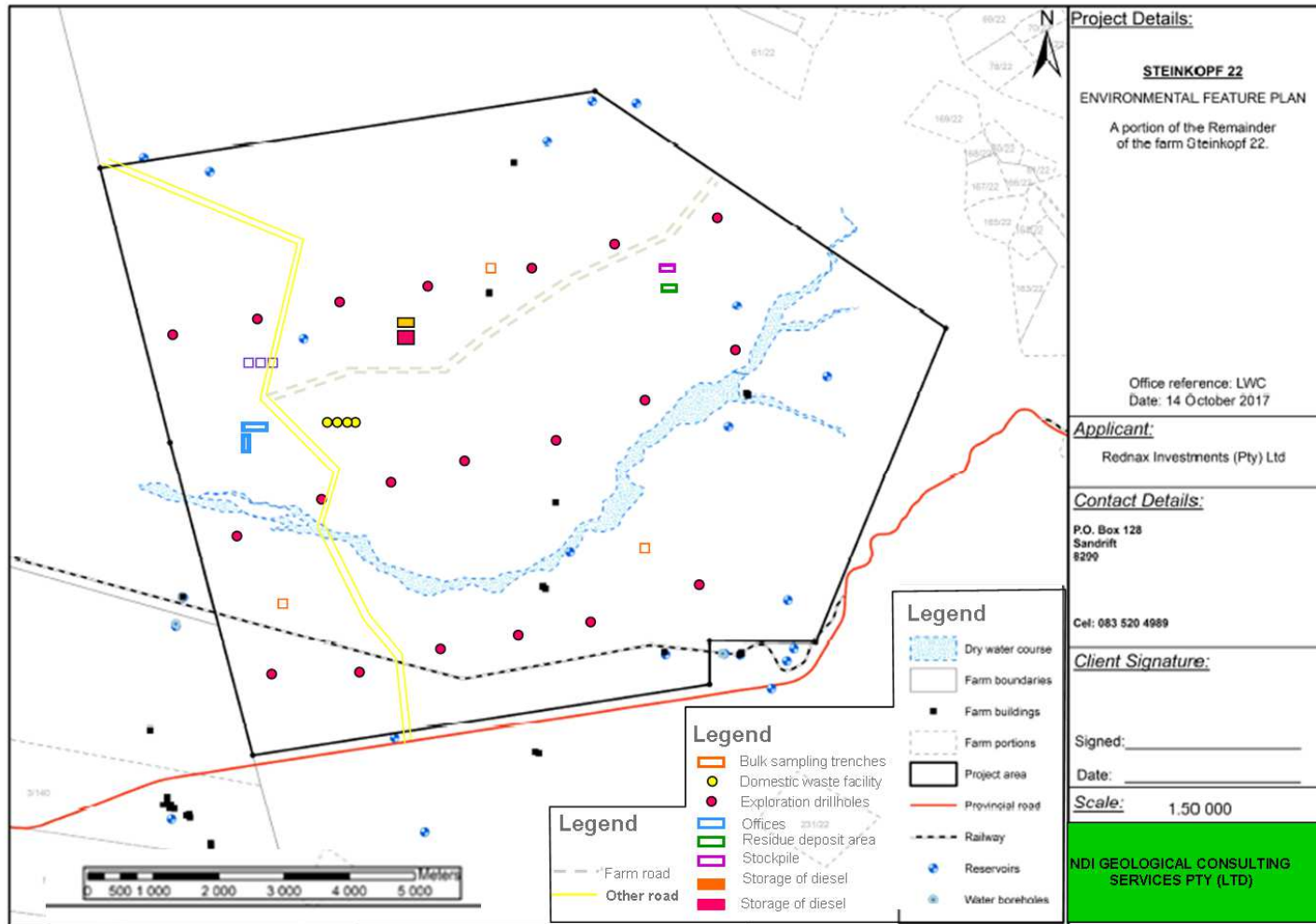
			Steinkopf and we want to offer our services to your company and clients. We understand that your company have ongoing projects in our region and we want to know if there is a possibility of using our accommodation facilities in the near future.	this will however be decided by the Rednax management themselves.	
Van Wyk Stephanie	x	May 2018	Werkskepping kan geskiet aangesien die werkloosheids syfer baie hoog is in dorp.	Noted	Public participation section
Angela Young	x	May 2018	Het geen probleem daarmee nie sien net dat daar erkskepping gaan kom daarvan.	Noted	-
Peddy	x	January 2018	No objection. welcome the project.	Noted	-
Piet	x	January 2018	No objection. welcome the project.	Noted	--
Municipality	x	7 June 2018	No comment received.	No comment received.	
Organs of state	x				
Department of Agriculture, land reform and development.	x	7 June 2018	No comment received.	No comment received.	
Department: Environment and Nature Conservation	x	7 June 2018	No comment received.	No comment received.	
DMR		31 May 2018	No comment received.	No comment received.	
Department of Agriculture, Forestry and Fisheries	x	5 July 2018	NCNCA legislation was not consulted. Many provincially protected; specially protected, endemic and biogeographically important taxa are found in the affected NamaqualandKlipkoppeShrubland; Namaqualand Shale Shrubland and	Botany report has been amended. The amendment of the National Forest Act of 1998 as suggested will be implemented in order to relocate all the protected species which forms part of conserving rare species.	

			<p>Namaqualand Blomveld. Vegetation will be cleared for bulk sampling and drilling, therefore a flora permit must be carried out by a suitably qualified botanist to relocate affected succulents of conservation concern after obtaining the necessary permit to do so.</p> <p>Page 30 of the draft EIR stated that a “huge drainage system passes through the mountain hills” Page 58 of the same report stated that “no river or any flowing streams will be affected by the proposed prospecting activities as there is no river close by the application area”. These statements seem to contradict each other. Please clarify.</p> <p>Page 60 of the Draft EIA Report refers to vegetation loss stated “where the firebreak will be created, the vegetation will be disturbed and/or destroyed.” The development must take note of section 16 of the NATIONAL Veld and Forest Act, Act 101 of the 1998 (NVFFA) as amended, which refers to the prohibition on damaging protected plants. The NVFFA stated the owner must transplant any plant which is protected in terms of any; or where it is safe and feasible</p>	<p>In this study within the proposed mining area is within drainage system that identified and evident indicate that the drainage it only flow when there is heavy rains within the catchment.</p> <p>Mitigation measures will be developed and be in place in case of the fire out break as part of complying with the Section 16 (a) and (b) of the national veld and forestry fire act.</p>	
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		<p>position the firebreak as to avoid such plant or tree.</p> <p>Page 9 of the draft EIR refers to an application area of 8 028, but the botany report refers to a development area of 37 000 ha. Please clarify.</p>	<p>The size of the proposed activity covered area has been addressed although it was error from the typist.</p>	
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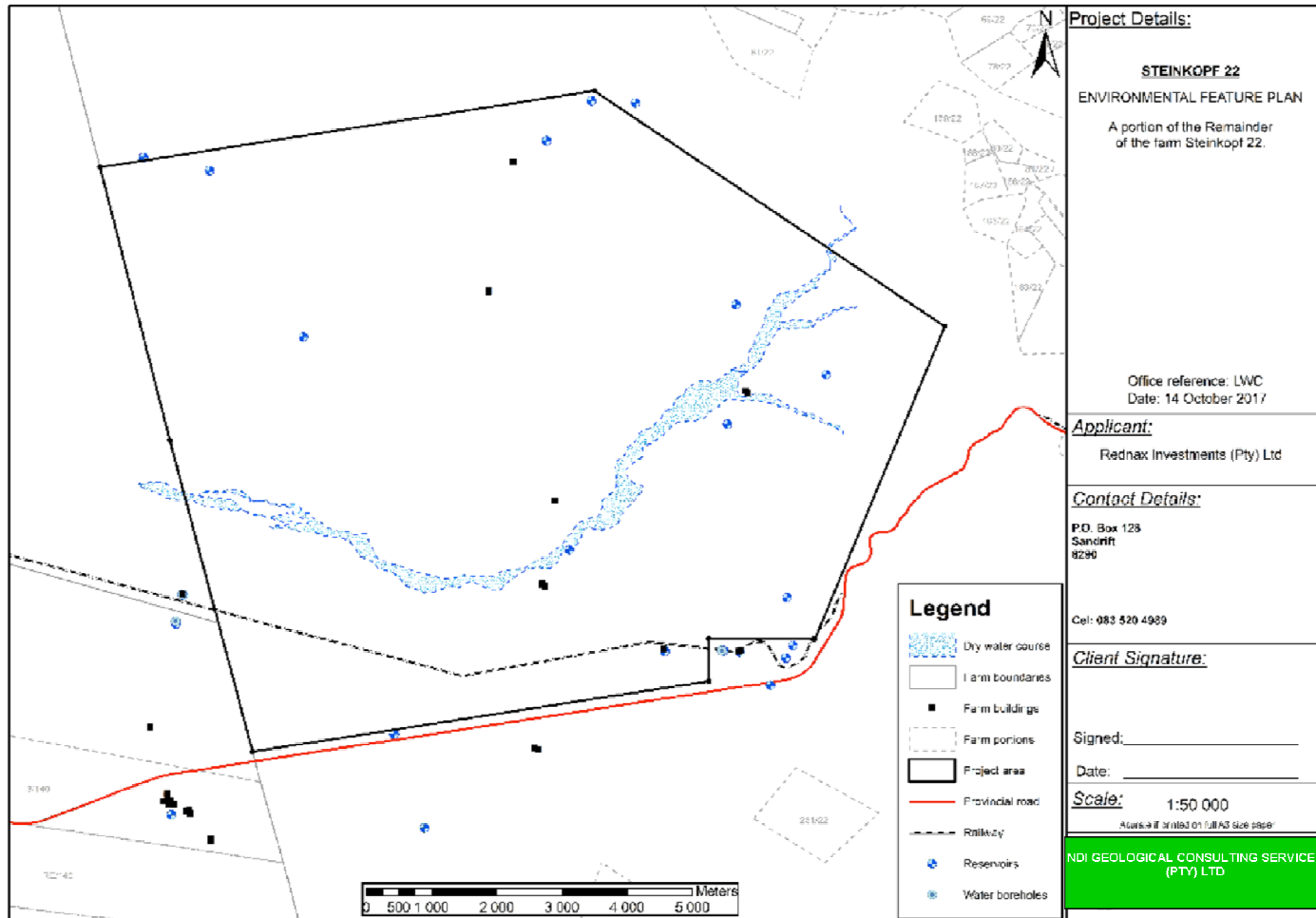
Appendix 6

Composite map



Appendix 7

Final map



Final Google map

