National Treasure Minerals (PTY) LTD

Klipbanksfontein prospecting project

DRAFT

Basic Assessment Report (BAR) and Environmental Management Programme (EMPR)

Compiled in terms of Appendix 1 and Appendix 4 of the amended Environmental Impact Assessment Regulations, 2014 (Government Notice No. 326) (EIA Regulations, 2014) and submitted as contemplated in Regulation 19 of Chapter 4 of the EIA Regulations, 2014

For

The application for an Environmental Authorization in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), Environmental Impact Assessment Regulations 2014, Government Notice No. 327 - Listing Notice 1 of 2014

DMRE Reference No.: NC 30/5/1/1/2/ (12844) PR

July 2021

Basic Assessment Report (BAR) and Environmental Management Programme (EMPR)

National Treasure Minerals (Pty) Ltd:

BAR AND EMPR FOR THE KLIPBANKSFONTEIN PROSPECTING PROJECT

July 2021

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EXECUTIVE SUMMARY

National Treasure Minerals (Pty) Ltd submitted an application for a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2004 (Act 28 of 2004). National Treasure Minerals (Pty) Ltd proposes to prospect for manganese and iron ore over a portion of the remaining extent of the farm Klipbanksfontein No. 607, namely Klipbanksfontein prospecting project.

Klipbanksfontein prospecting project will be undertaken in different phases i.e. literature review (available data interpretation and deciding whether to commence with drilling), field mapping and geophysical survey, positioning of drilling sites, diamond core drilling, logging/sampling of borehole cores and rehabilitation of the drilling site.

The commencement of the proposed Klipbanksfontein prospecting project will results in the undertaking of activities that are considered as listed activities in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) as amended (NEMA). In terms of the above-mentioned legislation, an application for an environmental authorisation must be submitted to the competent authority which application must be granted before the commencement of the proposed listed activities. In addition to the above, an environmental impact assessment must be undertaken in support of the environmental authorisation application for the proposed listed activities. In view of the above, National Treasure Minerals appointed Geovicon Environmental (Pty) Limited, an independent environmental consulting company, to undertake and manage the environmental authorisation application and the environmental impact assessment for the proposed Klipbanksfontein prospecting project. An application for an environmental authorisation for the proposed Klipbanksfontein prospecting area was submitted to the Department of Mineral Resources, Mpumalanga Regional Office (Competent Authority) for their consideration. The application has been accepted and a Basic Assessment Report (BAR) together with an EMPr must be compiled and submitted in terms of the requirements of the EIA Regulations, 2014.

This document (BAR and EMPR), which concerns assessment of environmental impacts and an programme for management of the environmental impacts for the proposed activities at the Klipbanksfontein prospecting project, was compiled in terms of the EIA Regulations, 2014 for review by interested and affected parties including the commenting and competent authority.

Environmental baseline data used in this report has been obtained through desktops assessments for surface water quantities and qualities, geohydrological data, topographical analyses, soil surveys, vegetation surveys, wetland surveys and geological conditions and the socio-economic aspects. Weather data was acquired from the South African Weather Service. Current land use was determined through available Google Earth imagery. The data accumulated and analysed is therefore deemed sufficient to gain a baseline indication of the present state of the environment. The use of this baseline data for impact assessments is thus justified, and reliable conclusions could be made. The impacts that could arise during and after the proposed prospecting activities at the Klipbanksfontein prospecting project were determined and ranked according to their significance. Based on the impact assessment, recommendations were made for the mitigation of significant negative environmental impacts that will result from the proposed Klipbanksfontein prospecting project.

PART A

SECTION ONE

Introduction

1. INTRODUCTION

1.1 WHO IS DEVELOPING THE BAR AND EMPR?

1.1.1 Name and contact details of the EAP who prepared the BAR and EMPR

EAP: Mr. Ornassis Tshepo Shakwane (Pr. Nat. Sc.)

Professional Body Registration Numbers

SACNASP: 117080

EAPASA: 2019/1763

IAIA Membership No.: 3847

Company: Geovicon Environmental (Pty) Limited

Postal Address:

P.O. Box 4050

MIDDELBURG, 1050

Tel: (013) 243 5842

Fax: (086) 632 4936

Cell No.: 0824981847

Email: tshepo@geovicon.co.za

1.1.2 Expertise of the EAP who prepared the BAR and EMPR

Geovicon Environmental (Pty) Limited is an independent geological and environmental consulting company. The company was formed during 1996, and currently has twenty-five years' experience in the geological and environmental consulting field. Geovicon Environmental (Pty) Limited has successfully completed consulting areas in the Mining sector (coal, gold, base metal and diamond), Quarrying sector (sand, aggregate and dimension stone), Industrial sector and housing sector. Geovicon Environmental (Pty) Limited has undertaken contracts within all the provinces of South Africa, Swaziland, Botswana and Zambia. During 2001 Geovicon Environmental (Pty) Limited entered the field of mine environmental management and water monitoring.

Geovicon Environmental (Pty) Limited is a Black Economically Empowered Company with the BEE component owning 60% of the company. Geovicon Environmental (Pty) Limited has three members i.e. O.T Shakwane, J.M. Bate and T.G Tefu.

Mr. O.T Shakwane obtained his BSc (Microbiology and Biochemistry) from the University of Durban Westville in 1994, and completed his honours degree in Microbiology in 1995. Mr O.T Shakwane has also completed short courses on environmental law and environmental impact assessment with the University of North West's Centre for Environmental Management. He has worked with the three state departments tasked with mining and environmental management i.e. Department of Water and Sanitation (Gauteng and Mpumalanga Region), Department of Mineral Resources and Energy (Mpumalanga Region) and Department of Agriculture, Conservation and Environment (Gauteng

Region). Mr. Shakwane has been in the consulting field since 2004 and has completed various areas similar to the proposed Klipbanksfontein prospecting project as an environmental assessment practitioner. Mr Shakwane is the registered environmental assessment practitioner for the environmental impact assessment for the proposed Klipbanksfontein prospecting project. He is registered with the South African Council for Natural Scientific Professions as a Professional Natural Scientist in terms of the section 20(3) of the Natural Scientific Professions Act, 2003 (Act 27 of 2003) and with the Environmental Assessment Practitioner Association of South Africa as an Environmental Assessment Practitioner in terms the National Environmental Management Act, 1998 (Act 107 of 1998). He is also a member of the International Association for Impact Assessment, South Africa.

Over the past years Geovicon Environmental (Pty) Limited has formalised working relationships with companies that offer expertise in the following fields i.e.Geohydrology, Civil and Geotechnical Engineering, Geotechnical Consultancy, Survey and Mine Planning and Soil & Land Use Consultancy. Geovicon Environmental (Pty) Limited is an independent consulting company, which has no interest in the outcome of the decision regarding the Klipbanksfontein prospecting project's basic assessment process.

1.2 WHO WILL EVALUATE AND APPROVE THE BAR AND EMPR?

Before the proposed prospecting project can proceed, an Environmental Assessment Practitioner (EAP) must compile an application for an environmental authorisation for the proposed area. An impact assessment (basic assessment process) must be undertaken in support of the application for an environmental authorisation. The basic assessment process will determine the potential environmental impacts that may result from the proposed area and an environmental management programme will be compiled to provide measures for mitigation against the identified impacts. The above-mentioned application must be made to the competent authority and in terms of section 24D (1) of NEMA, the Minister responsible for mineral resources is the responsible competent authority for this application. In view of the above, the application for the environmental authorisation for the proposed area was submitted to the Department of Mineral Resources and Energy (DMRE), Northern Cape Regional Office for their consideration and decision making.

In the spirit of co-operative governance and in compliance with the requirements of NEMA and the MPRDA, the competent authority may, during the processing for the environmental authorisation application, consult with other organs of state that administers laws that relate to matters affecting the environment relevant to this application. Note that during the public participation process for the proposed area, the EAP will also consult with the below listed state authorities.

The organs of state that are to be consulted may include the following:

Department of Mineral Resources and Energy (Kimberly Branch), Department of Water and Sanitation (Kimberly Branch).

Note however that this list is not exhaustive as more organs of state may be identified by the competent authority and EAP during the public participation process.

1.3 DETAILS OF THE APPLICANT

1.3.1 Name of the Applicant

National Treasure Minerals (Pty) Ltd

1.3.2 Name of the Area

Klipbanksfontein prospecting project

1.3.3 Postal Address of Applicant

P. O. Box 90512

Garsfontein

Gauteng

0181

1.3.4 Responsible Person

Mr. Mojalefa Douglas Mongwe

1.3.5 Contact Person

Bongani Zulu

Cell No. 074 548 9726

1.4 DESCRIPTION OF THE PROPERTY (LOCATION OF THE AREA)

1.4.1 Regional Setting

Refer to

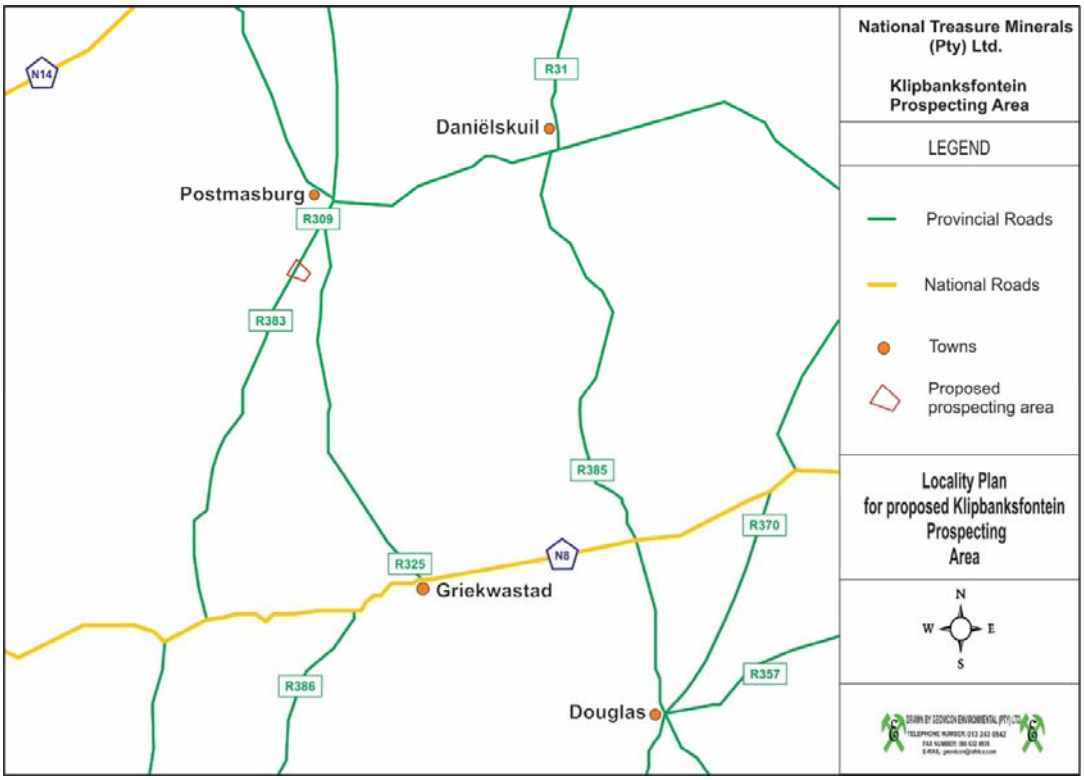


Figure **2** for the locality plan for the Klipbanksfontein prospecting project.

1.4.2 Physical Address and Farm Name of the Prospecting Area

A portion of the Remaining Extent of the farm Klipbanksfontein No. 607.

1.4.3 Magisterial District & Regional Services Council

Magisterial: Postmasburg

District Municipality: Siyanda District Municipality

Local Municipality: Tsantsabane Local Municipality

1.4.4 Direction and Distance to Nearest Towns

Table 1: Direction and Distance to Nearest Towns.

TOWN	DIRECTION	DISTANCE (KM)
Postmasburg	Northeast	13km

Griekwastad	Southeast	52km
Daniëlskuil	Northeast	60 km

1.4.5 Land Tenure and Use of Immediate and Adjacent Land

Land tenure for the properties within and immediately around the proposed Klipbanksfontein prospecting project is indicated on **Figure 1** and described in Table 2. Land use within the proposed area include rivers, wells/livestock pens, grazing/natural land, roads (R383) provincial, and private gravel roads.

Table 2: Schedule of properties listing surface ownership within and immediately around Klipbanksfontein Prospecting Right Area

FARM NAME AND NUMBER	21 DIGIT SURVEYOR GENERAL CODE	DESCRIPTION OF SUB-DIVISION	SURFACE OWNER
KLIPBANKSFONTEIN 607	C03100000000060700000	RE*	Christiaan Deitlief Bredenkamp
KAMEEL FONTEIN 490	C03100000000049000000	RE	Johan De Klerk Van Zyl
STRYDFONTEIN 614	C03100000000061400000	RE	Sishen Iron Ore Pty Ltd.
KLIP BANK FONTEIN 489	C03100000000048900004	RE	Sishen Iron Ore Pty Ltd

*= Klipbanksfontein prospecting project lies on this portion, refer to Appendix 1 of the Regulation 2 (2) plan.

1.4.6 Locality Plan

Refer to **Figure 2** for the locality plan of the Klipbanksfontein prospecting project.

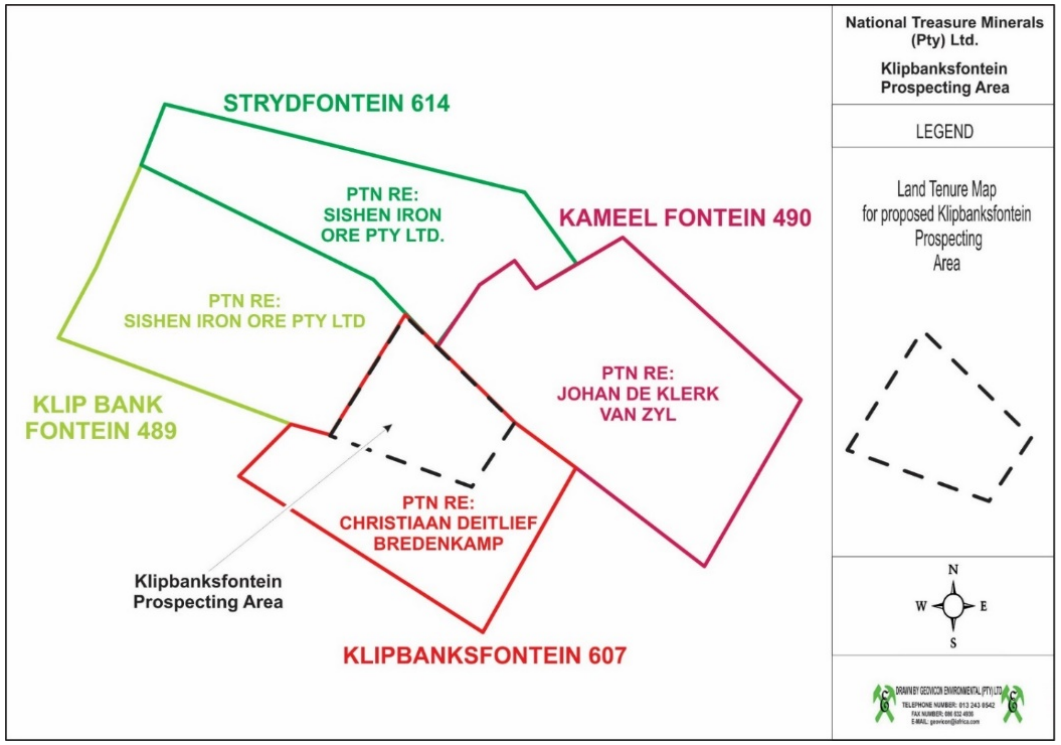


Figure 1: Land Tenure Plans for the Klipbanksfontein prospecting project

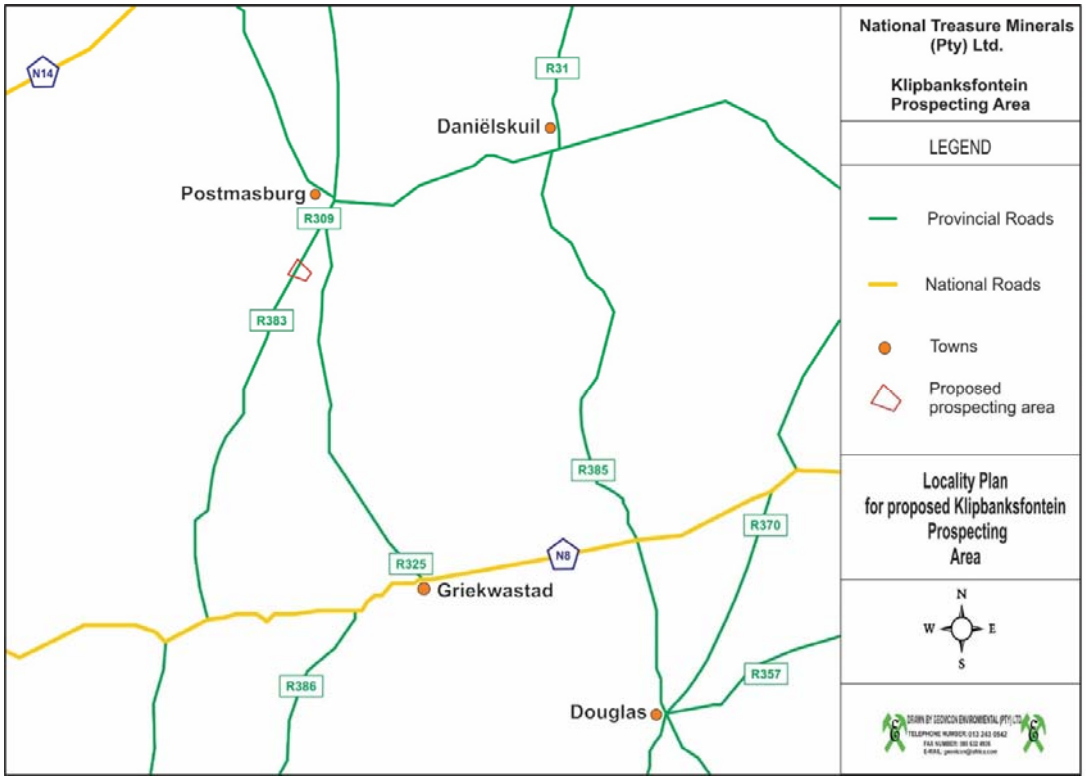


Figure 2: Locality Plan

SECTION TWO

Description of the Scope of the Proposed Area

2 DESCRIPTION OF THE SCOPE OF THE PROPOSED AREA

2.1 LISTED ACTIVITIES AND SPECIFIED ACTIVITIES

Before the proposed Klipbanksfontein prospecting area can be commenced with, an environmental authorisation must be obtained by National Treasure Minerals (Pty) Ltd. In view the above, National Treasure Minerals (Pty) Ltd has applied for an environmental authorisation for listed activities within the proposed project. This section will indicate the activities that were included in this environmental authorisation application. **Table 3** is compiled as prescribed by the DMRE BAR and EMPr template and reflect all Klipbanksfontein prospecting area activities applied for.

2.2 DESCRIPTION OF THE PROPOSED KLIPBANKSFONTEIN PROSPECTING PROJECT

Klipbanksfontein prospecting area will be undertaken in different phases i.e. literature review (available data interpretation and deciding whether to commence with drilling), field mapping and geophysical survey, positioning of drilling sites, diamond core drilling, logging/sampling of borehole cores and rehabilitation of the drilling site.

Table 3: Proposed Klipbanksfontein prospecting project listed Activities

NAME OF ACTIVITY	AERIAL EXTENT OF THE ACTIVITY	LISTED ACTIVITY	APPLICABLE LISTING NOTICE
PROPOSED KLIPBANKSFONTEIN PROSPECTING PROJECT-LISTED AND SPECIFIC ACTIVITIES			
NATIONAL ENVIRONMENTAL MANAGEMENT ACT			
Prospecting - site camp, ablution facility, field mapping, geophysical survey, drilling, wireline logging, geological modelling and evaluation.	0.5 ha (prospecting right area).	Activity No. 20	NO. 327

2.2.1 Target Mineral

Manganese and iron ore found within the Hothazel formation.

2.2.2 Prospecting Method Used at the Klipbanksfontein prospecting project

The proposed Klipbanksfontein prospecting project area will be explored in three phases i.e. literature review, field mapping and drilling. Drilling phase has a potential for environmental impacts, hence will be described in this section of the report.

Field mapping include the description of the structural geometry of a deformed field area, simultaneously conducting geophysical survey. A geological map will be produced and subsequent to that borehole will be positioned.

Drilling phase will involve the drilling of the positioned boreholes using a diamond core drilling technique. A sump will be constructed at each drilling site for the storage of water used to cool the drill rig. The sump will be constructed to be one square meter in size and have a maximum depth of one metre. Any soils removed from the sump (approximately one cubic meters) will be placed adjacent the drilling site and used for rehabilitation of the site.

Boreholes will be drilled at pre-planned sites. The boreholes will be drilled to intersect all the expected coal seams and will be logged by the geologist. The coal samples will be sent to the laboratory for quality analyses. This data will form the basis for the geological modelling and financial evaluation.

Please note that the borehole layout can only be determined once the Prospecting Right is granted, thereafter it will be sent in to the Department of Mineral Resources and Energy.

2.2.3 Planned Life of Area

The current estimated life of the proposed Klipbanksfontein prospecting project is five years.

2.3 KLIPBANKSFONTEIN PROSPECTING PROJECT SURFACE INFRASTRUCTURE DESCRIPTION

2.3.1 Access Roads

There are various main & minor roads passing over the proposed area. Some of these roads will be used to access the proposed Klipbanksfontein prospecting area. Where no roads exist, tracks will be used to access the drilling sites.

2.3.2 Power line Infrastructure

Diesel powered vehicles and machinery will be used for the proposed project.

2.3.3 Water Supply Infrastructure

Water will be supplied from the landowner's borehole or any farm dam that might exist on the property. Water will be trucked with a water cart to all drill sites. Water that will be required is for the operation of machinery and domestic use within the campsite and drilling sites.

2.3.4 Workshops and Buildings

No workshops and office buildings will be required for this area. All machinery will be maintained at an offsite workshop. Should emergency repairs be required the repairs will be conducted on site on areas covered with tarpaulins.

2.3.5 Waste Management

2.3.5.1 Waste Identification and Management

Hazardous Waste

Hazardous waste to be generated includes hydrocarbon wastes (oil and liquid fuel wastes) and sewage waste. Oil waste and liquid fuels waste include used oils from mine machinery and vehicles and diesel/petrol waste.

General Waste

General waste to be generated from the proposed area is domestic waste. Domestic waste will include old food, old stationary, discarded PPE and old clothing generated from the drilling and campsites.

2.3.5.2 Waste Management Facilities

Hazardous Waste

Hydrocarbon waste will be collected in 210 litre drums for storage. The removal of the drums or any other appropriate receptacle will be undertaken by a waste disposal company, for disposal at a registered licensed waste disposal site. The drums will be placed on protected ground.

Chemical toilets will be used for the management of sewage waste generated on site.

2.4 KLIPBANKSFONTEIN PROSPECTING PROJECT METHOD STATEMENT

In terms of DMRE BAR and EMPR template, National Treasure Minerals (Pty) Ltd must describe the methods and technology to be employed for the proposed area. In view of the above, a method statement for each phase of the proposed project has been provided. This identifies all actions, activities or processes associated with the proposed prospecting operation.

2.4.1 Offsite Prospecting Activities (Literature Survey)

2.4.1.1 Data gathering

Relevant information regarding the potential of the identified prospecting area will be sourced from institutions like the Council for Geoscience and through the interpretation of the available geological and aeromagnetic maps.

2.4.1.2 Data interpretation

The interpretation of the said data will result in compiling a preliminary potential area report. The said report will give indication as to what processes (in order of priority) to follow to complete the prospecting activities.

2.4.1.3 Decision to commence with prospecting activities

Once all factors are gathered, physical inspection of the terrain will be conducted to verify certain aspects, such as, type of the terrain involved, type of methods to be used, etc. The important point to note is that a decision on whether or not to proceed with prospecting depends not only on the scientific and reliability of the methods under consideration, but also upon many less tangible factors, such as restrictions that might be imposed by the relevant Department when granting a prospecting right.

2.4.2 Construction Phase

Construction phase will involve the establishment of access to the drilling sites (tracks and/or existing roads) and establishment of campsite (a caravan/tents and chemical toilet).

2.4.2.1 Establishment of access

A number of existing farm roads lie in close proximity to the proposed prospecting area, hence access to the site will be through these roads. Where necessity arises for access to the drilling sites, tracks will be established as access to the drilling site. These tracks will be established to be more than hundred meters away from any sensitive landscapes. Vegetation clearance will be avoided during the establishment of the access tracks.

2.4.2.2 Establishment of campsite

The campsite will be established as close as possible to existing dwelling places with proper infrastructure. Where such structures are not available, a proper campsite will be established,

depending on the company, tents and/or caravans will be provided for employees. Clearing of vegetation will be avoided during the establishment of the campsite.

2.4.2.3 Detailed site survey and investigation

Demarcation of sensitive and protected areas will be conducted by physical survey of the proposed area by a suitability qualified person. This should be done before establishment of access to the site, campsites and drilling of exploration boreholes.

2.4.2.4 Geophysical surveys and data interpretation

Geophysical methods will be used to perform the geophysical survey over the proposed prospecting site.

2.4.2.5 Pegging of drill sites

All exploration borehole sites will be staked by a suitably qualified person. The sites will thereafter be plotted on a plan drawn to an appropriate scale.

2.4.3 Operational Phase

2.4.3.1 Diamond drilling for boreholes and sump Construction

Geological boreholes will be drilled on a predetermined grid. During drilling of each borehole, a sump of approximately 1.0 x 1.0 x 1.0 m will be excavated for storing water from the drilling operation.

24.3.2 Topsoil storage site

The tops and sub soils removed from the sump and drilling boreholes will be stockpiled in close proximity to the sump. The sumps will be backfilled manually by spade, once drilling and sampling of boreholes is completed.

2.4.3.3 Logging and sampling of the Core

This involves the physical description of the rocks intersected by the drilling process. The interpretation of these rock descriptions will assist in establishing the general stratigraphy of the area. Sampling will be taken at the desired horizons and sent to the laboratory for analyses.

2.4.3.4 Site Rehabilitation

Concurrent rehabilitation (Plugging and levelling) of disturbed areas will be undertaken as drilling continues.

2.4.4 Decommissioning phase

2.4.4.1 Final Rehabilitation

Except for farm roads, no tracks and infrastructure related to the prospecting operation will remain in place after the decommissioning phase. Where tracks have resulted in more damage, such tracks will be ripped at 90° to the inherent slope, and seeded with the recommended seed mix. The sumps will be rehabilitated in such a manner to return the area to as close as possible to its pre-drilling environment.

Post closure, the prospecting area will consist of re-vegetated areas with vegetation cover comparable to the surrounding areas. No prospecting related infrastructure will remain on the prospecting site. The area will conform to the pre-prospecting topography. The areas affected by prospecting will be stable and erosion free.

2.4.4.2 Pre-feasibility study

This involves the compilation of a final geological report, reserve determination and pre-feasibility studies.

2.4.4.3 Mining feasibility study

This involves the conducting of a mining feasibility study, market research, sales agreements etc.

2.4.5 After Closure Phase

The rehabilitated area will be monitored on a quarterly basis to ensure that the site returns to an acceptable state. In the event that such an acceptable state is not achieved, the area will be seeded. After the decommissioning of the site and if it can be determined that the site is stable, an environmental authorisation for the decommissioning of the site and a closure certificate will be applied for in terms of the relevant laws.

Please note that the borehole layout can only be determined once the Prospecting Right is granted, thereafter it will be sent in to the Department of Mineral Resources and Energy.

SECTION THREE

Policy and legislative context

3 POLICY AND LEGISLATIVE CONTEXT

3.1 CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA, 1996 (ACT NO. 108 OF 1996)

Section 24 of the Constitution of the Republic of South Africa (Act No. 108 of 1996) states that everyone has the right:

a) to an environment that is not harmful to their health or well-being; and

b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that;

(i) prevent pollution and ecological degradation;

(ii) promote conservation; and

(iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

In terms of Section 24 of the Constitution of the Republic of South Africa (Act No. 108 of 1996), everyone has the right to an environment that is not harmful to their health or well-being. In addition, people have the right to have the environment protected, for the benefit of present and future generations, through applicable legislations and other measures that prevent pollution, ecological degradation and promote conservation and secure ecological sustainable development through the use of natural resources while prompting justifiable economic and social development. The needs of the environment, as well as affected parties, should thus be integrated into the overall area in order to fulfil the requirements of Section 24 of the Constitution. In view of the above, a number of laws pertaining to environmental management were promulgated to give guidance on how the principles set out in section 24 of the Constitution of the Republic of South Africa (Act No. 108 of 1996) would be met. Below are laws applicable to the proposed area that was promulgated to ensure that section 24 of the Constitution of the Republic of South Africa (Act No. 108 of 1996) is complied with.

3.2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998)

Section 24(1) of the NEMA states:

“In order to give effect to the general objectives of integrated environmental management laid down in this Chapter [Chapter 5], the potential consequences for or impacts on the environment of listed activities or specified activities must be considered, investigated, assessed and reported on to the competent authority or the Minister of the Department of Mineral Resources and Energy, as the case may be, except in respect of those activities that may commence without having to obtain an environmental authorisation in terms of this Act.”

In order to regulate the procedure and criteria as contemplated in Chapter 5 of NEMA relating to the preparation, evaluation, submission, processing and consideration of, and decision on, applications for environmental authorisations for the commencement of activities, subjected to environmental impact assessment, in order to avoid or mitigate detrimental impacts on the environment, and to optimise

positive environmental impacts, and for matters pertaining thereto, Regulations (EIA Regulations, 2014) were promulgated. These Regulations took effect from the 4th of December 2014.

In addition to the above, Section 28 of the NEMA includes a general "Duty of Care" whereby care must be taken to prevent, control and remedy the effect of significant pollution environmental degradation. This section stipulates the importance to protect the environment from degradation and pollution irrespective of the operations taking places or activities triggered / not triggered under NO. 327, NO. 325 and NO.324.

In view of the above, an environmental impact assessment is being undertaken to comply with the requirements of the NEMA and the NEMA EIA Regulations, 2014. The NEMA EIA Regulations of December 2014 determines requirements to be met in order to obtain an environmental authorisation. This report has therefore been compiled in compliance with the above regulations.

3.3 National Environmental Management Air Quality Act, 2004 (Act No. 39 2004)

The National Environmental Management: Air Quality Act (Act No. 39 of 2004) (NEM: AQA) focuses on reforming the law regulating air quality in South Africa in order to protect the environment through the provision of reasonable measures protecting the environment against air pollution and ecological degradation and securing ecological sustainable development while promoting justifiable economic and social developments. This Act provides national norms and standards regulating air quality management and control by all spheres of government. These include the National Ambient Air Quality Standards (NAAQS) and the National Dust Control Regulations (NDCR). The standards are defined for different air pollutants with different limits based on the toxicity of the pollutants to the environment and humans, number of allowable exceedances and the date of compliance of the specific standard.

On 22 November 2013 the list of activities which result in atmospheric emissions which have or may have a significant detrimental effect on the environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage was published under GN R893 in Governmental Gazette No 37054, in terms of Section 21(1)(b) of the NEM: AQA.

The proposed will not trigger any of the activities listed under the above-mentioned Regulations, however National Treasure Minerals (Pty) Ltd must ensure that emissions from their activities complies with the standards as set in the above-mentioned regulations.

3.4 The National Heritage Resources Act, 1999 (Act No. 25 of 1999)

The National Heritage Resources Act (Act No. 25 of 1999) (NHRA) focuses on the protection and management of South Africa's heritage resources. The governing authority for this act is the South African Heritage Resources Agency (SAHRA). In terms of the NHRA, historically important features such as graves, trees, archaeology and fossil beds are protected as well as culturally significant symbols, spaces and landscapes. Section 38 of the NHRA stipulates the requirements a developer must undertake prior to development. In terms of Section 38 of the NHRA, SAHRA can call for a Heritage Impact Assessment (HIA) where certain categories of development are proposed.

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development thereon.

The Act also makes provision for the assessment of heritage impacts as part of an EIA process and indicates that if such an assessment is deemed adequate, a separate HIA is not required. An assessment of the proposed area will be done during the drilling programme to determine if there are any sites that require protection. Any sites identified will be marked and no drilling will be undertaken in close proximity of such a site.

3.5 National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA)

The National Environmental Management: Biodiversity Act (Act No. 10 of 2004) (NEMBA) provides for the management and protection of South Africa's biodiversity within the framework established by NEMA. The Act aims to legally provide for biodiversity conservation, sustainable, equitable access and benefit sharing and provides for the management and control of alien and invasive species to prevent or minimize harm to the environment and indigenous biodiversity. The Act imposes obligations on landowners (state or private) governing alien invasive species as well as regulates the introduction of genetically modified organisms. The Act encourages the eradication of alien species that may harm indigenous ecosystems or habitats. The NEMBA ensures that provision is made by the site developer to remove any aliens which have been introduced to the site or are present on the site.

The NEMBA also provides for listing of threatened or protected ecosystems, in one of four categories: critically endangered, endangered, vulnerable or protected. The purpose of listing protected ecosystems is primarily to conserve sites of exceptionally high conservation value.

The Act supports South Africa's obligations under sanctioned international agreements regulating international trade in specimens of endangered species, and ensures that the utilization of biodiversity is managed in an ecological sustainable way.

The BAR and EMPR has been complied to ensure that all applicable requirements prescribed in the NEMBA are complied with.

3.6 Northern Cape Nature Conservation Act, 2009 (Act No. 9 of 2009)

The Northern Cape Nature Conservation Act, No. 9 of 2009, aims to provide for the sustainable utilisation of wild animals, aquatic biota and plants, to provide for the implementation of the Conservation on International Trade in Endangered Species of Wild Fauna and Flora, to provide for offences and penalties for contravention of the Act, to provide for the appointment of nature conservators to implement the provisions of the Act, to provide for the issuing of permits and other authorisations and to provide for matters connected therewith. Measures will be undertaken to ensure that requirements in terms of the Act are complied with where necessary.

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

The Department of Mineral Resources and Energy (DMRE) is responsible for regulating the mining and minerals industry to achieve equitable access to the country's resources and contribute to sustainable development. The Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) (MPRDA) requires that an EIA be conducted and that the EMP be drafted for the mitigation of impacts identified during the environmental impact assessment for a mining area. During December 2014, the "One

Environmental System" was implemented by Government which initiated the streamlining of the licensing processes for mining, environmental authorisations and water use. Under the One Environmental System, The Minister of Mineral Resources and Energy, will issue environmental authorisations and waste management licences in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), and the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEMWA), respectively, for mining and related activities. The Minister of Environmental Affairs will be the appeal authority for these authorisations. In view of the above the application for the environmental authorisation for the proposed area was submitted to the Department of Mineral Resources and Energy as the competent authority.

3.8 NATIONAL WATER ACT, 1998 (ACT NO. 36 OF 1998 NWA)

The National Water Act (Act No. 36 of 1998) (NWA) is the primary regulatory legislation, controlling and managing the use of water resources as well as the pollution thereof in South Africa. The NWA recognises that the ultimate aim of water resource management is to achieve sustainable use of water for the benefit of all users and that the protection of the quality of water resources is necessary to ensure sustainability of the nation's water resources in the interests of all water users. The NWA presents strategies to facilitate sound management of water resources, provides for the protection of water resources, and regulates use of water by means of Catchment Management Agencies, Water User Associations, Advisory Committees and International Water Management. The National Government has overall responsibility for and authority over water resource management, including the equitable allocation and beneficial use of water in the public interest. Further, an industry can only be entitled to use water if the use is permissible under the NWA. The enforcing authority on water users is the Department of Water and Sanitation (DWS).

Further, Regulation 704 of the NWA deals with the control and use of water for mining and related activities aimed at the protection of water resources.

No water use licence application will be submitted to the Department of Water and Sanitation for their consideration. However measures will be undertaken to ensure that requirements in terms of the NWA and the GN 704 are complied with where necessary.

3.9 NATIONAL ENVIRONMENTAL MANAGEMENT, 2008 (ACT NO. 59 OF 2008 WASTE ACT)

The National Environmental Management: Waste Act (NEMWA) requires that all waste management activities must be licensed. According to Section 44 of the NEMWA, the licensing procedure must be integrated with an EIA process in terms of the NEMA.

The objectives of NEMWA involve the protection of health, wellbeing and the environment. The NEMWA provides measures for the minimisation of natural resource consumption, avoiding and minimising the generation of waste, reducing, recycling and recovering waste, and treating and safely disposing of waste.

No waste management activities are triggered by the proposed area, hence no application in terms of the NEMWA was submitted to the Department of Mineral Resources and Energy.

3.10 EIA GUIDELINES

A number of national and provincial EIA guidelines were published by different departments. These guidelines are mainly aimed at assisting relevant stakeholders by providing information and guidance and giving recommendations on a number of aspects relating to the environmental impact assessment process. The guidelines can be used by the competent authority, applicant and the EAP during the EIA process. It is therefore important that the EAP and the person compiling a specialist report must have relevant expertise when conducting the environmental impact assessments.

A number of guidelines were consulted during the compilation of this report and these include amongst them the following i.e., Guidelines on the Need and Desirability, Department of Environmental Affairs and Tourism Integrated Environmental Management Guidelines, Department of Water and Sanitation's Best Practice Guidelines and the Western Cape Provincial Department of Environmental Affairs and Development Planning Guidelines on Public Participation.

SECTION FOUR

Need and desirability of the proposed activities

4 NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES

In terms of the EIA Regulations the need and desirability of any development must be considered by the relevant competent authority when reviewing an application. The need and desirability must be included in the reports to be submitted during the environmental authorisation application processes.

This section of the BAR and EMPr will indicate the need and desirability for the proposed Klipbanksfontein Prospecting Project.

Assessment of the geological minerals applied for reserves. In order to ascertain the above and determine the nature, location and extent of the minerals applied for within the proposed prospecting project, it will be necessary that prospecting be undertaken. The prospecting will also determine if there are any features that may have an impact on the economic extraction of the minerals applied for.

The information that will be obtained from the prospecting to be done will be necessary to determine how and where the minerals applied for will be extracted and how much economically viable reserves are available within the proposed prospecting area.

National Treasure Minerals (Pty) Ltd expects that substantial benefits from the project will accrue to the immediate project area, the sub-region and the Province of Northern Cape. These benefits must be offset against the costs of the project, including the impacts to land owners.

The potential benefits of the proposed project are:

Potential reduction in crime because of short-term job creation during construction (providing farm safety and security measures are implemented), but also in the long-term in the region, as a result of job creation.

Local growth in the economy of the towns of Postmasburg and surrounding areas, and for local businesses including those that supply accommodation, transport etc.

Economic benefits for contractors and other suppliers of goods and services.

Economic opportunities and other potential benefits for land owners from compensation for impacts.

Based on the environmental assessment conducted as described in this Report, there are no environmental impacts associated with the proposed project that cannot be mitigated.

All issues raised by the interested and affected parties will be recorded and addressed in the BAR and EMPr.

SECTION FIVE

Motivation for the preferred development footprint

5 MOTIVATION FOR THE PREFERRED DEVELOPMENT FOOTPRINT

5.1 CONSIDERATION OF ALTERNATIVES

The National Environmental Management Act 107 of 1998, Environmental Impact Assessment Regulations, 2014 requires a BAR and EMPR to identify alternatives for areas applied for. In terms of the above-mentioned regulations an alternative in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to the (a) the property on which or location where it is proposed to undertake the activity; (b) the type of activity to be undertaken; (c) the design or layout of the activity;(d) the technology to be used in the activity;(e) the operational aspects of the activity; and (f) the option of not implementing the activity.

National Treasure Minerals (Pty) Ltd intends on undertaking exploration for manganese and iron ore to determine whether or not the area consist of these commodities and if they are available whether the ore reserves are found quantities that have economic value. The proposed activity will include the drilling of exploration boreholes. The associated activities/infrastructure will include, an access to the site and a campsite.

5.1.1 Location Alternatives

The location alternative considered for the proposed area include the prospecting sites and associated campsite location and access routes. The location alternatives were selected based on a number of criteria, which include the environmental considerations (how sensitive is the area in terms of soils, wetlands, groundwater etc.), sensitive receptors (proximity to communities and farmsteads) and the dependency of the area to the required infrastructure.

5.1.2 Prospecting Sites and Access Routes

No alternatives were considered for the prospecting area and the access routes, since the area where prospecting will be conducted was selected based on sound geological information.

5.1.3 Campsite Location

Regarding the location of the campsite, three alternatives were considered. These locations included a static location closer to the main access point i.e. R383 Provincial Road, static location closer to the farm dwellings and a mobile campsite (caravans/tents).

Since the site closer to the farm dwellings may result in undesirable impacts on the residents and a static location to the main access point, i.e., R383 Provincial Road may results in unforeseen impacts due to the unavailability of other necessary services next to the road. These two alternatives were discarded.

Regarding the other alternative (mobile campsite), would be suitable for the project, since the mobile campsite will move with the drilling team from site to site during the execution of the drilling programme.

5.1.3 Design/Layout Alternatives

Since no complicated surface infrastructure will be required for this area no design and layout alternatives for the proposed area were determined.

5.1.4 Technology Alternatives

Manganese and iron exploration is less cumbersome; hence the normal manganese and iron exploration technologies will be used. In view of the above, no technology alternatives were considered for this project.

5.1.5 Input Material Alternatives

As mentioned above, current water sources used by the landowners and currently available energy will be used for the operation. In view of the above, no in-put material alternatives were considered for this project. Note that no new building facilities will be constructed at the project site since movable facilities will be used for the proposed project.

5.1.2 Operational Alternatives

5.1.2.1 Exploration Drilling Methods

Drilling of manganese and iron ore is used to determine the depth, thickness and quality of the manganese and iron ore at any point across a prospecting area. Drilling is also used to determine the strata with which the manganese and iron ore are associated. Drilling can either be done by non-core drilling or core drilling techniques.

Non-Core Drilling Methods

Non-core drilling techniques mostly use the rotary drilling methods. In this technique, a string of metal rods is rotated axially and a bit at the base of the string is forced downward, under controlled pressure, breaking up the ground and advancing the depth of the hole. Cuttings are swept away from the bit and lifted to the surface either by means of pumped circulating water or by jets of compressed air.

Logging of the hole drilled by non-core drilling methods is mainly based on the cuttings obtained as the drill progresses. In view of the difficulty and error bound logging, this method of drilling was discarded and may be used only for infill drilling wherever necessary.

Core-Drilling Methods

Core drilling techniques uses diamond drilling methods. In this technique, a hollow cylindrical drill bit impregnated with industrial diamonds is attached to a series of metal drill rods and rotated under controlled downward pressure. A circle of rock is ground away, the cutting removed by water flushing and a cylindrical core remains in the hollow centre of the drill string.

Core drilling is the only satisfactory means of obtaining representative samples of depth and for quality determination.

5.1.2.2 Transportation

No transportation of material will take place during prospecting activities.

5.1.3 No Go Option

National Treasure Minerals (Pty) Limited intends on exploring the proposed area in order to determine availability of manganese and iron ore. If it can be determined that the area ore of economic value, potential mining operations will contribute to job creation within the Local Municipality. Potential mining operations will also assist with the establishment of small/medium businesses, infrastructure development, community development and poverty eradication in the surrounding previously disadvantaged communities. Since the proposed prospecting process itself will have very low environmental impacts, as detailed in the EMPr, investigating the feasibility of future mining operations should be considered.

5.2. DETAILS OF THE PUBLIC PARTICIPATION PROCESS FOLLOWED AND RESULTS THEREOF

Public participation is the cornerstone of any EIA process. The principles of the NEMA govern many aspects of EIA's, including public participation. The general objectives of integrated environmental management laid down in the NEMA include to "ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment". The National Environmental Management Principles include the principle that "The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary to achieve equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured", which basically means that the person responsible for the application (EAP) must ensure that provision of sufficient and transparent information on an ongoing basis to stakeholders are made to allow them to comment, and to ensure that the participation of previously disadvantaged people like women and the youth are undertaken.

In terms of the amended NEMA EIA Regulations, 2014, when applying for environmental authorisation, the Environmental Assessment Practitioner managing the application must conduct at least a public participation process where all potential or registered interested and affected parties, including the competent authority, are given a period of at least 30 days to submit comments on the basic assessment report and EMPr.

This section of the BAR and EMPr will give an explanation of the public participation process to be taken in order to comply with the above-mentioned requirements. A number of public participation guidelines were published in a bid to assist persons responsible for the environmental authorisation applications. As much of the available guidelines were used in determining the public participation process, in guiding the public participation process of the proposed area.

National Treasure Minerals (Pty) Ltd is applying for an environmental authorisation for the proposed Klipbanksfontein prospecting project. The application for the environmental authorisation is undertaken in terms of the process as laid out in part 2 of Chapter 4 under the NEMA EIA Regulations, 2014. The above- mentioned regulations requires that an applicant for an environmental authorisation submit a BAR and EMPr to the competent authority after having subjected the reports to a public participation process.

In view of the above, a public participation process was initiated for the proposed Klipbanksfontein Prospecting area. The public participation process for the proposed area is designed to provide sufficient and accessible information to interested and affected parties (I&APs) in an objective manner to assist them to:

- raise issues of concern and make suggestions for enhanced benefits;
- contribute local knowledge and experience;
- verify that their issues have been captured;
- verify that their issues have been considered in the technical investigations; and
- comments on the findings of the EIA.

The following are and will be conducted in undertaking of the public participation process for the proposed area.

5.2.1 Registration and BAR Phase

The public participation process has commenced by providing potential interested and affected parties (I&AP's) 30 days to register as interested and affected parties and to comment on the draft BAR and EMPR. The registration and commenting process started on the 30th of July 2021 and ended on the 30th of August 2021. Note that all parties were provide enough time (at least 30 days) to comment on the reports.

5.2.1.1 Notification of potential interested and affected parties

The following methods of notification were used to notify the potential interested and affected parties of the opportunity to register during the public participation process for the proposed area:

- Notices inviting potential interested and affected parties to register and comment on the draft BAR and EMPr for the proposed Klipbanksfontein prospecting project (from the 30th of July 2021 to the 30th August 2021) were fixed at two sites. The notices were compiled to comply with the requirements of Regulation 41(3) of the amended NEMA EIA Regulations, 2014.
- Written notices were sent to all surface owners and lawful occupiers of the land on which the proposed area will be undertaken, owners/lawful occupiers of land immediately adjacent to the proposed project area, the municipal councillors of the ward in which the proposed project is situated, representatives of the municipalities which has jurisdiction over the proposed project area (Tsansabane Local Municipality and Siyanda District Municipality). These notices were used to invite the parties to comments on the draft BAR and EMPR.
- The draft BAR and EMPr was submitted to all the commenting authorities for their comments.
- A copy of the draft BAR and EMPr was placed in the Postdene Library for the public to peruse and make comments on the report.
- On the 30th of July 2021, notices were posted at Kathu Gazette which is also distributed in Kathu, Olifantshoek, Postmansburg, Black Rock, Upington, Hotazel, Kuruman, Debeng, Daniëlskuil, Keimoes, Kimberly and Kumba Kolomela Mine, Lime Acres and Kumba Sishen Mine, informing the public that the BAR and EMPr is available for comments at the Postdene library. The notices were compiled in compliance with the requirements of Regulation 41(3) of the EIA Regulations, 2014.

5.2.1.2 Registered Interested and Affected Parties

The following are currently registered as interested and affected parties for the Klipbanksfontein prospecting project:

- Department of Mineral Resources and Energy (Kimberly Branch),
- Department of Water and Sanitation (Kimberly Branch)
- Northern Cape Tourism Authority
- Department Agriculture Land Reform & Rural Development
- Northern Cape Tourism and Parks Agency (Commenting Authority)
- Tsantsabane Local Municipality
- Ward Councillor 7 (Tsantsabane Local Municipality)
- Land owners and lawful occupiers within the Klipbanksfontein prospecting project area
- Land owners and lawful occupiers immediately adjacent to the Klipbanksfontein prospecting project area

5.2.1.3 Proof of Consultation

Proof of the above-mentioned consultation and the results thereof, will be available in the final BAR.

5.2.1.4 Finalisation of Interested and Affected Party Database

On expiry of registration period, the database of interested and affected parties were finalised. All parties who indicated the interest of being registered as interested and affected parties were added to the list of interested and affected parties.

Note: All organs of state, which have jurisdiction in respect of any aspect of the proposed area and the competent authority are automatically registered interested and affected parties.

5.3 DRAFT BASIC ASSESSMENT REPORT

The draft BAR and EMPR is made available for comment to all relevant stakeholders during the above-mentioned registration phase of the proposed area public participation process.

5.3.1 Comments, Issues and Responses on the Draft Basic Assessment Report and EMPr

On lapsing of the commenting period, all comments and issues received from the interested and affected parties will be recorded and responses to the comments made. All reactions to the responses to the comments and issues raised will also be recorded.

The comments and issues raised by the interested and affected parties, their responses and reaction to the response will be presented in the final BAR and EMPr.

5.4 ENVIRONMENTAL ATTRIBUTES (BASELINE INFORMATION)

5.4.1 Climate

The proposed Klipbanksfontein prospecting project has been described based on the climate via desktop assessment as follows:

Postmasburg Thornveld (SVk14)

Climate Summer and autumn rainfall with very dry winters. MAP about 250–350 mm. Frost frequent in winter. Mean monthly maximum and minimum temperatures for Sishen 37.0°C and –2.2°C for December and July, respectively.

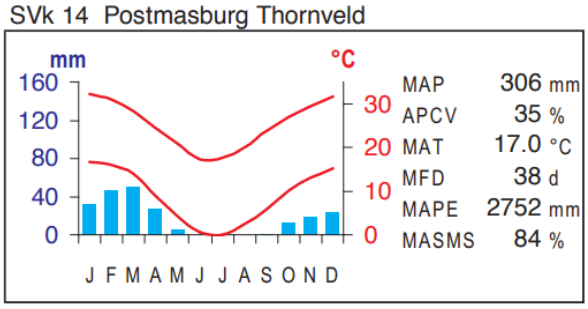


Figure 3: Climate Diagram representing Postmasburg Thornveld (SVk 14)

Northern Upper Karoo (NKu3)

Climate: Rainfall peaks in autumn (March). MAP ranges from about 190 mm in the west to 400 mm in the northeast. Mean maximum and minimum monthly temperatures for Britstown are 37.9°C and –3.6°C for January and July, respectively. Corresponding values are 37.1°C and –4.8°C for De Aar and 39.0°C and –2.3°C for Kareekloof (northwest of Strydenburg).

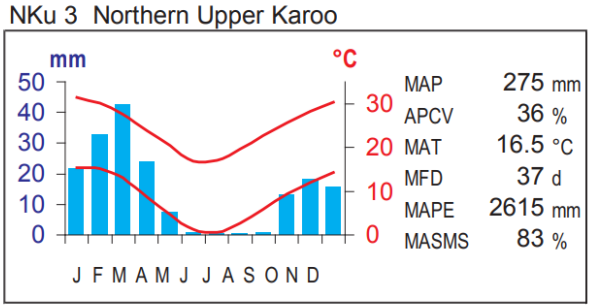


Figure 4: Climate Diagram representing Northern Upper Karoo (NKu 3)

5.4.2 Regional Geological Setting

The prospecting area is located within the Kalahari Manganese Field. The manganese ores of the Kalahari Manganese Field are contained within sediments of the Hotazel Formation of the Griqualand West Sequence, a subdivision of the Proterozoic Transvaal Supergroup. The N'Chwaning deposit

consists of a gently dipping and regular strata bound body of high-grade ore, which has undergone a hydrothermal upgrading associated with faulting.

The base of the Hotazel Formation consists of a bright-red banded iron-formation bed (varying from massive to fine-grained specularite and/or euhedral magnetite crystals) overlying volcanic glass breccias and lavas of the Ongeluk Formation.

The banded iron-formation units' grade into microcrystalline kutnohoritic ovoid-rich braunite rock. The kutnohorite in this area is concentrated in ovoids, which represent partially compacted, early diagenetic concretions in hematite and braunite rock. The braunite rock bed of the lower section of the lowest of the three sedimentary cycles present in the Hotazel Formation is between 5 and 45m thick. This is the major ore unit of the Kalahari manganese field with a manganese content varying between 20 and 48 weight percent.

The middle manganese-bearing unit (cycle 2) is a maximum of 2m thick and is not economically viable. The top manganese ore body was mined in previous years. It rarely exceeds 5m thickness. Grey hematitic and manganese minnesotaite rocks are found between the lower and the middle manganese ore bodies. About 1300 million years ago a widespread hydrothermal event occurred in the north-western portion of the Kalahari manganese field which reached temperatures up to 450°C in the Wessels, N'Chwaning and Black Rock Mines. This event decarbonated and desilicated portions of the Hotazel Formation to the north-west and thus upgraded the manganese content of the ore. Furthermore, the hydrothermal event is of great significance from the collectors' point of view as a wide range of rare as well as unusual mineral combinations where produced.

The manganese ore bodies in the north-western part of the Kalahari manganese field (Wessels, Black Rock, and N'Chwaning Mines) have been termed Wessels-type ore. These ore bodies contrast markedly to the primary Mamatwan-type ore. The ore has been hydrothermally altered and metamorphosed. This resulted in a manganese ore with a coarser grain size with higher manganese content. This ore is braunite-rich and contains other major minerals such as braunite II, bixbyite, hausmannite, marokite, and hematite together with minor amounts of calcite. The overall carbonate content of the Wessels-type ore is lower than that of the Mamatwan-type ore. Andradite and barite are common gangue minerals. Additionally, minor minerals such as tephroite and rhodochrosite as well as aegirine (in the iron formation above the ore layers) are associated with this ore type. Most of the Wessels, Black Rock, N'Chwaning II and parts of N'Chwaning I ores are of this type.

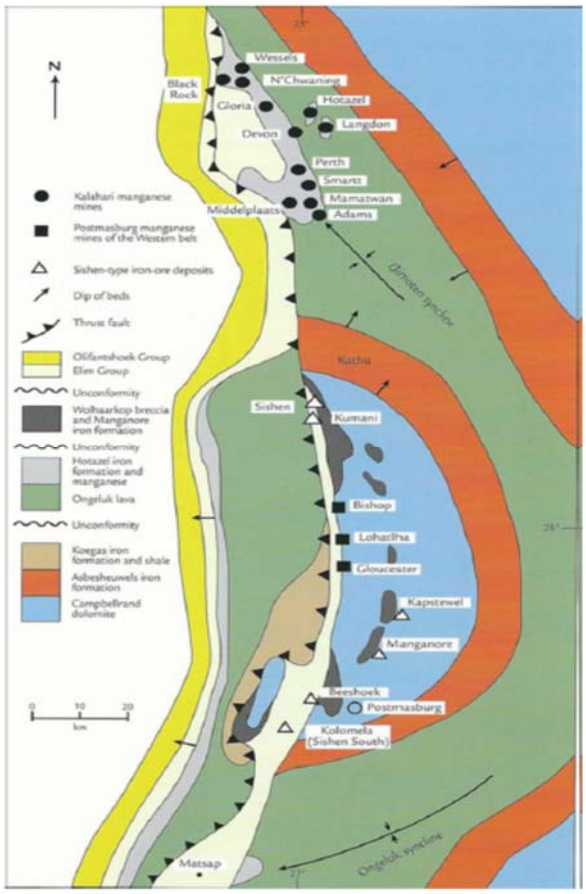


Figure 5: Illustrates the Manganese bearing formation

5.4.3 Topography

The proposed Klipbanksfontein prospecting project has been described based on the topography identified via desktop assessment as follows:

Postmasburg Thornveld (SVk14)

Topography: Limited area around Postmasburg along the short valley of the Groenwaterspruit to the northeast and southwest, west to Bermolli and around Heuningkrans. Altitude 1 180–1 440 m.

Northern Upper Karoo (NKu3)

Northern Cape and Free State Provinces: Northern regions of the Upper Karoo plateau from Prieska, Vosburg and Carnarvon in the west to Philipstown, Petrusville and Petrusburg in the east. Bordered in the north by Niekerkshoop, Douglas and Petrusburg and in the south by Carnarvon, Pampoenpoort and De Aar. A few patches occur in Griqualand West. Altitude varies mostly from 1 000–1 500 m.

5.4.4 Soils

The proposed Klipbanksfontein prospecting project has been described based on the vegetation types identified over the project via desktop assessment. Two land types with associated soil forms were identified over the project area i.e.:

Postmasburg Thornveld (SVk14)

Red aeolian sand of the Kalahari Group overlying the volcanics and sediments of the Griqualand West Supergroup that outcrop in places. Deep soils are of the Hutton form. Dominant land type Ag.

Northern Upper Karoo (NKu3)

Shales of the Volksrust Formation and to a lesser extent the Prince Albert Formation (both of the Ecca Group) as well as Dwyka Group diamictites form the underlying geology. Jurassic Karoo Dolerite sills and sheets support this vegetation complex in places. Wide stretches of land are covered by superficial deposits including calcretes of the Kalahari Group. Soils are variable from shallow to deep, red-yellow, apedal, freely drained soils to very shallow Glenrosa and Mispah forms. Mainly Ae, Ag and Fc land types.

5.4.5 Current Land Use

Within the prospecting right area, the land use include rivers, grazing/natural land, wells/livestock pens, farmsteads, roads which include the Provincial Road (R383), national, secondary and private gravel roads and a opencast mining site (see **Figure 6**).

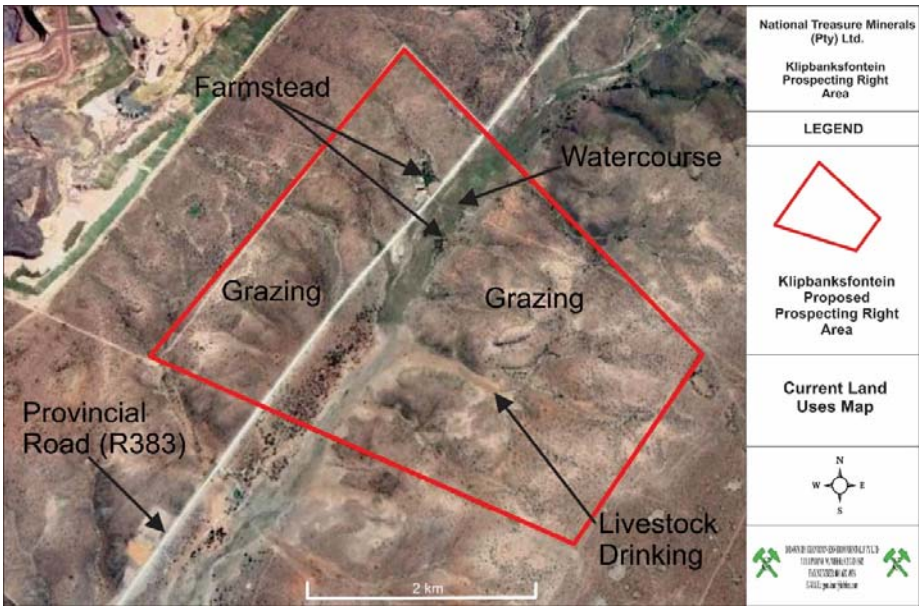


Figure 6: Land uses within Klipbanksfontein prospecting project

5.4.6 Natural Vegetation/Plant Life

The proposed Klipbanksfontein prospecting right area is situated in the Postmasburg Thornveld vegetation type (SVk 14) / ecosystem within the Eastern Kalahari Bushveld Bioregion of the Savanna Biome and the and the Northern Upper Karoo vegetation type (NKu3) within the Upper Karoo Bioregion of the Nama- Karoo Biome. See **Figure 7** for a visual indication (South African National Biodiversity Institute – SANBI; VEGMAP 2018).

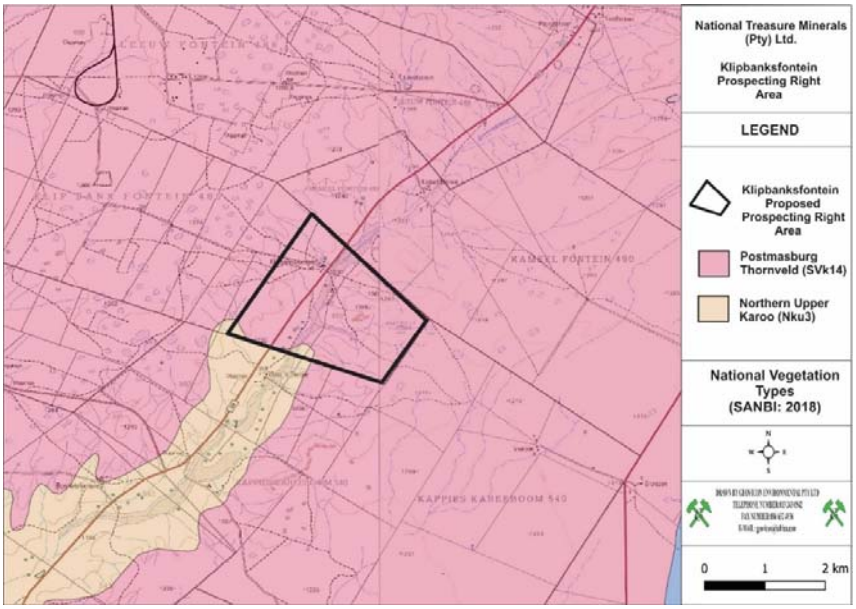


Figure 7: National vegetation units / ecosystems over the proposed Klipbanksfontein prospecting project

Postmasburg Thornveld (SVk14)

This ecosystem is not a threatened ecosystem.

Vegetation: Flats surrounded by mountains supporting open, shrubby thornveld characterised by a dense shrub layer and often lacking a tree layer; the grass layer is very sparse. Shrubs are generally low and with a karroid affinity.

Important Taxa:

Tall Tree: *Acacia erioloba*

Small Trees: *Acacia karroo* (d), *A. tortilis* subsp*. heteracantha* (d), *Rhus lancea* (d), *Ziziphus mucronata* (d).

Tall Shrubs: *Rhus tridactyla* (d), *Diospyros lycioides* subsp. l*ycioides*, *Ehretia rigida* subsp. *rigida*, *Grewia flava*, *Tarchonanthus camphoratus*.

Low Shrubs: *Acacia hebeclada* subsp. *hebeclada* (d), *Felicia muricata*, *Gomphocarpus fruticosus* subsp. *fruticosus*, *Lantana rugosa*, *Melolobium microphyllum*, *Sutera halimifolia*..

Succulent Shrubs: *Kalanchoe rotundifolia*, *Lycium cinereum*.

Graminoids: *Digitaria eriantha* a subsp. *eriantha* (d), *Enneapogon scoparius* (d), *Eragrostis lehmanniana* (d), *Aristida adscensionis*, *A. congesta*, *A. diffusa*, *Eragrostis superba*, *Heteropogon contortus*, *Melinis repens*, *Schmidtia pappophoroides*, *Stipagrostis uniplumis*

Herbs: *Dicoma anomala*, *Geigeria filifolia*, *G. ornativa*, *Hibiscus pusillus*, *Jamesbrittenia aurantiaca*, *Selago densiflora*, *Tripteris aghillana*.

Geophytic Herbs: *Boophone disticha*

Biogeographically Important Taxon:

(Griqualand West endemics)

Succulent Shrub: *Euphorbia bergii.*

Graminoid: *Digitaria polyphylla*.

Conservation: Least threatened. Target 16%. None of the unit is conserved in statutory conservation areas, but very little has been transformed. Erosion is very low.

Remark: In contrast to eastern parts of the unit, *Tarchonanthus camphoratus* is conspicuously absent in the western parts. Reference Smit (2000).

Northern Upper Karoo (Nku3)

This ecosystem is not a threatened ecosystem.

Vegetation: Shrubland dominated by dwarf karoo shrubs, grasses and *Acacia mellifera* subsp. *detinens* and some other low trees (especially on sandy soils in the northern parts and vicinity of the Orange River).

Important Taxa:

Small Trees: *Acacia mellifera* subsp. *detinens* (d), *Boscia albitrunca* (d)

Tall Shrubs: *Lycium cinereum* (d), *L. horridum*, *L. oxycarpum*, *L. schizocalyx*, *Rhigozum trichotomum*.

Low Shrubs*: Chrysocoma ciliata* (d), *Gnidia polycephala* (d), *Pentzia calcarea* (d), *P. globosa* (d), *P. incana* (d), *P. spinescens* (d), *Rosenia humilis* (d), *Amphiglossa triflora*, *Aptosimum marlothii*, *A. spinescens*, *Asparagus glaucus*, *Barleria rigida*, *Berkheya annectens*, *Eriocephalus ericoides* subsp. *ericoides*, *E. glandulosus*, *E. spinescens*, *Euryops asparagoides. Felicia muricata*, *Helichrysum lucilioides*, *Hermannia spinosa*, *Leucas capensis*, *Limeum aethiopicum*, *Melolobium candicans*, *Microloma armatum*, *Osteospermum leptolobum*, *O. spinescens*, *Pegolettia retrofracta*, *Pentzia lanata*, *Phyllanthus maderaspatensis*, *Plinthus karooicus*, *Pteronia glauca*, *P. sordida*, *Selago geniculata*, *S. saxatilis*, *Tetragonia arbuscula, Zygophyllum lichtensteinianum*.

Succulent Shrubs: *Hertia pallens*, *Salsola calluna*, *S. glabrescens*, *S. rabieana*, *S. tuberculata*, *Zygophyllum flexuosum*.

Semiparasitic Shrub: *Thesium hystrix* (d)

Herbs: *Chamaesyce inaequilatera*, *Convolvulus sagittatus*, *Dicoma capensis*, *Gazania krebsiana*, *Hermannia comosa*, *Indigofera alternans*, *Lessertia pauciflora*, *Radyera urens*, *Sesamum capense*, *Sutera pinnatifida*, *Tribulus terrestris*, *Vahlia capensis*.

Succulent Herb: *Psilocaulon coriarium*

Biogeographically Important Taxa:

Herb (western distribution limit): *Convolvulus boedeckerianus*

Tall Shrub (southern limit of distribution): *Gymnosporia szyszylowiczii* subsp. *namibiensis*.

Small Tree: *Acacia luederitzii* var. *luederitzii*.
Graminoids: *Anthephora argentea*, *Megaloprotachne albescens*, *Panicum kalaharense*.
Herb: *Neuradopsis bechuanensis*.
Endemic taxa:
Succulent Shrubs*:Lithops hookeri*, *Stomatium pluridens*
Low Shrubs: *Atriplex spongiosa*, *Galenia exigua*
Herb: *Manulea deserticola*

Conservation Least threatened.

Target 21%. None conserved in statutory conservation areas.

About 4% has been cleared for cultivation (the highest proportion of any type in the Nama-Karoo) or irreversibly transformed by building of dams (Houwater, Kalkfontein and Smart Syndicate Dams). Areas of human settlements are increasing in the northeastern part of this vegetation type (Hoffman et al. 1999). Erosion is moderate (46.2%), very low (32%) and low (20%).

Prosopis glandulosa, regarded as one of the 12 agriculturally most important invasive alien plants in South Africa, is widely distributed in this vegetation type (Hoffman et al. 1999). *Prosopis* occurs in generally isolated patches, with densities ranging from very scattered to medium (associated with the lower Vaal River drainage system and the confluence with the Orange River) to localised closed woodland on the western border of the unit with Bushmanland Basin Shrubland.

Remark: This Karoo unit is found on floristic and ecological gradients between the Nama-Karoo, arid Kalahari savanna and arid highveld grasslands. References Acocks (1953, 1988), Werger (1980), Palmer (1990).

5.4.7 Surface Water

For the purpose of the National Water Resource Strategy, a requirement of the National Water Act (Act 36 of 1998), Department of Water Affairs and Forestry has delineated the entire country into representative water management areas with respective drainage regions i.e., primary, secondary, tertiary and quaternary drainage regions. The proposed Klipbanksfontein prospecting right area is situated over the quaternary catchment D73A (Figure 8).

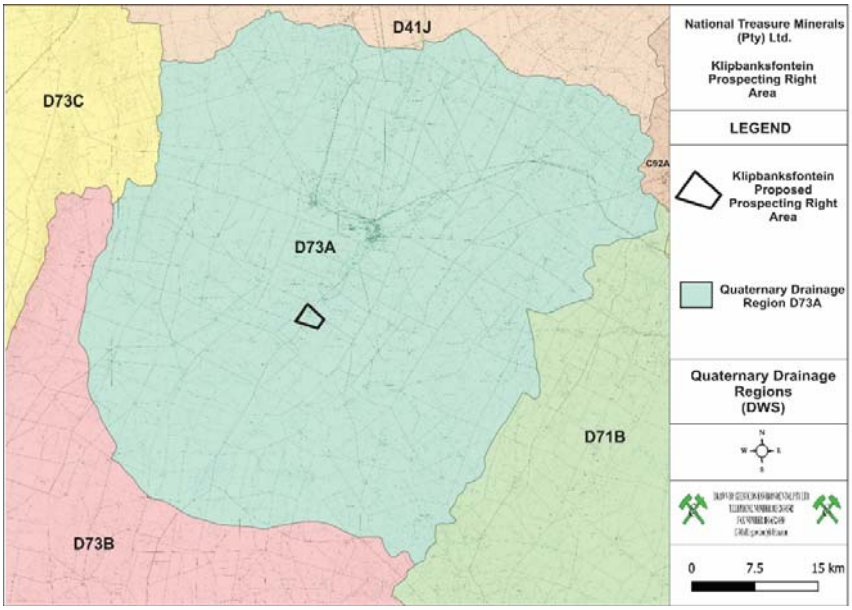


Figure 8: DWS quaternary drainage regions in the vicinity of the Klipbanksfontein prospecting project

Table 4: Information regarding the above-mentioned quaternary catchment areas

	D73A
Drains into	Orange River
Size in km²	3236
Mean annual precipitation (mm)	322.70
Evaporation (mm)	2 7321.0
Mean annual surface runoff (mm)	18.20

5.4.8 Sensitive Landscapes

National Treasure Minerals (Pty) Ltd recognises that all streams, rivers and wetlands should be treated as sensitive landscapes. To this extent, Geovicon Environmental (Pty) Limited, an independent consultant, undertook a desktop study over the prospecting right area to determine the presence of sensitive landscape.

The proposed Klipbanksfontein Prospecting right area is situated in a River, Freshwater Ecosystem Priority Area –Freshwater Ecosystem Priority Area meaning that these areas should remain in a good condition in order to contribute to national biodiversity goals and support sustainable use of water resources (**Figure 9**).

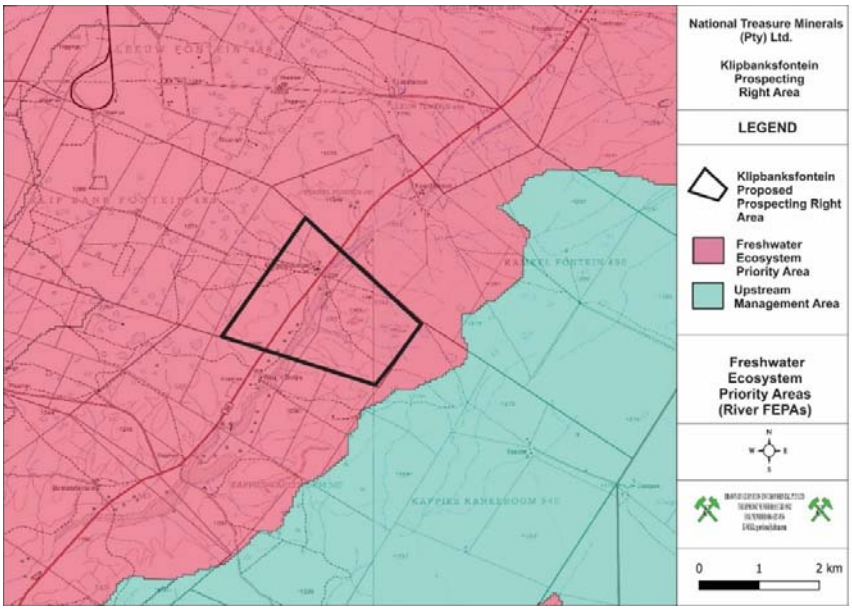


Figure 9: National Freshwater Ecosystem Priority Areas (NFEPA's) – Rivers, in the vicinity of the Klipbanksfontein prospecting project

The proposed Klipbanksfontein prospecting right area is situated in the vicinity of wetlands comprising out of several pans as well as a river (**Error! Reference source not found.**).

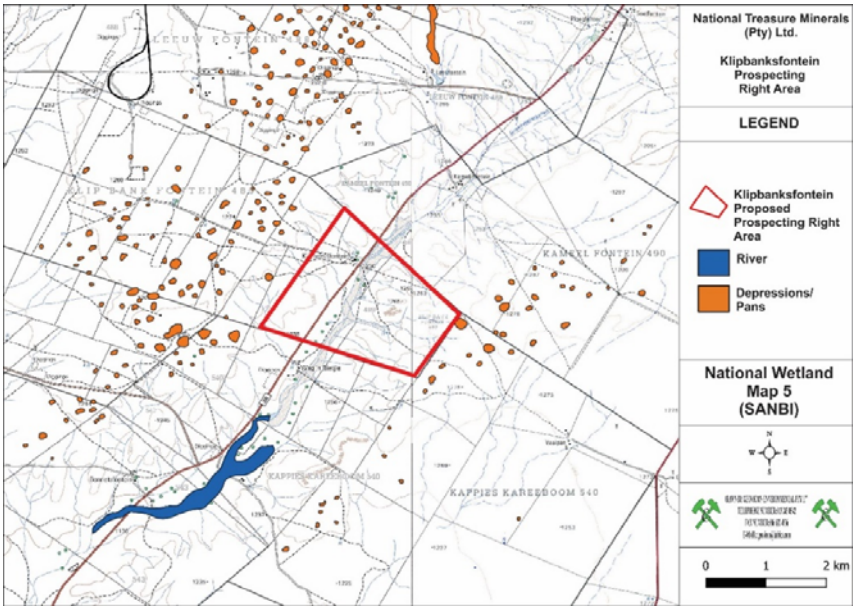


Figure 10: National wetland areas in the vicinity of the Klipbanksfontein prospecting project (SANBI, National Wetlands Map 5)

The proposed Klipbanksfontein prospecting right area is situated in the Eastern Kalahari Bushveld Group 3 wetland vegetation type within the Eastern Kalahari Bushveld Bioregion of the Savanna Biome and the and the Upper Nama Karoo wetland vegetation type within the Upper Karoo Bioregion of the Nama- Karoo Biome. See **Figure 11** for a visual indication (South African National Biodiversity Institute – SANBI;2018).

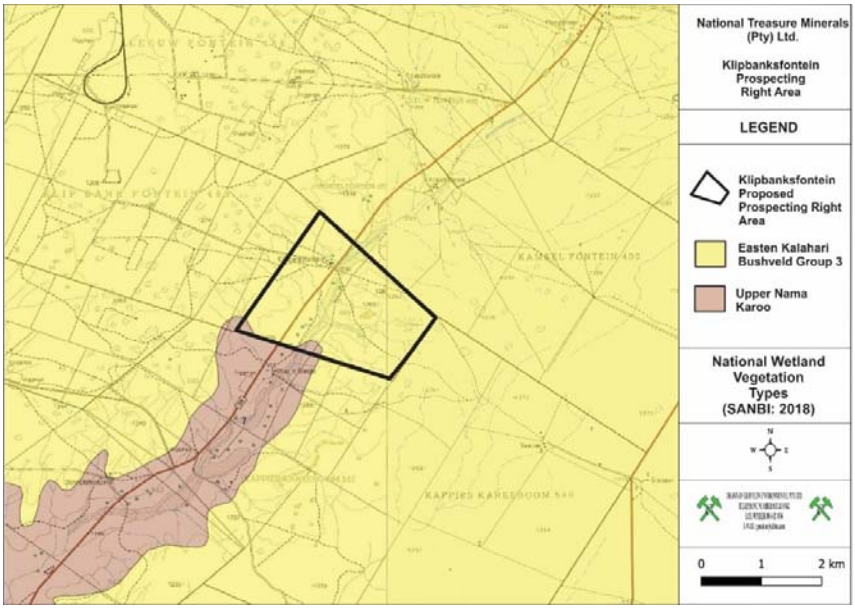


Figure 11: National wetland vegetation types in the vicinity of the Klipbanksfontein prospecting project

The proposed Klipbanksfontein prospecting right area is mostly situated in the terrestrial categories of Other Natural Areas and Critical Biodiversity Area One. The area outside of the project area comprise out of some Ecological Support Areas as well as a Critical Biodiversity Area Two.

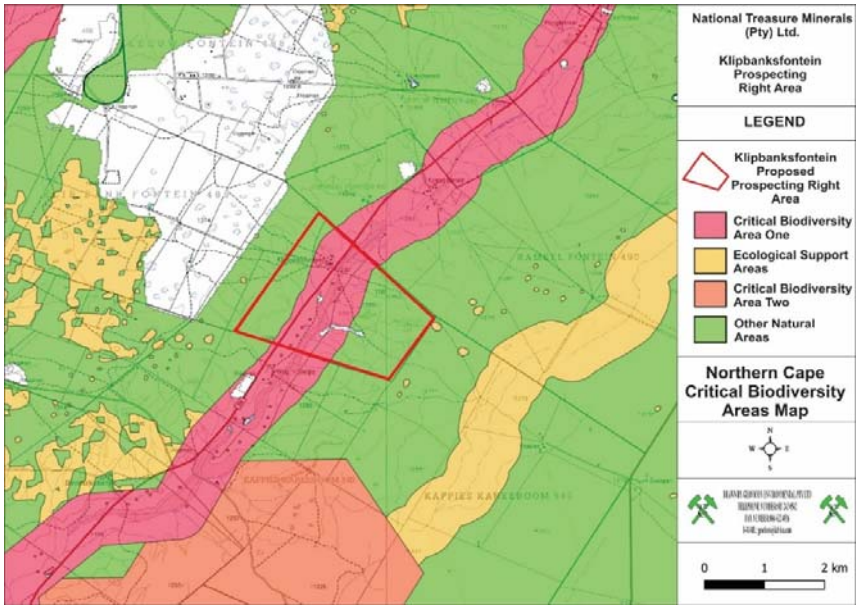


Figure 12: Critical Biodiversity Areas and Ecological Support Areas in the vicinity of the Klipbanksfontein prospecting project area

Figure 12 indicates the CBA and ESA in the vicinity of the proposed Klipbanksfontein Prospecting right area. The CBA map reason layer, provides the reason that these areas were earmarked as CBA and ESA areas. The reasons are: it is situated in an area where natural wetlands occur, where rivers occur and where catchments of freshwater ecosystem priority areas (FEPA's) occur. The area also contain landscape

structural elements (rocky outcrops, koppies, dolerite dykes, boulder fields, woody vegetation on outwash plains etc).

5.4.9 Air Quality

Potentially air pollution from human activities may arise as a result of particulates entering the atmosphere. The sources of air pollution from human activities comprise of three broad categories i.e., stationary sources (agriculture, mining, quarrying, manufacturing, mineral products and industries), community sources (homes or buildings, municipal waste and sewage sludge incinerators, fireplaces, cooking facilities, laundry services and cleaning plants) and mobile sources combustion-engine vehicles and fugitive emissions from vehicle traffic). Air pollutants are generally classified into suspended particulate matter (dust, fumes, mists and smokes), gaseous pollutants (gases and vapours) and odours.

Assessment of the proposed prospecting right area has determined that all three categories of air pollution sources are found at the proposed area.

5.4.10 Noise

The proposed area is predominantly a grazing area. Potential noise sources from the area may therefore be emanating from the following sources i.e.: roads and surrounding land use activities.

5.4.11 Socio-Economic Status

Tsantsabane Local Municipality is located within the north-eastern parts of the Northern Cape Province, and falls within the boundaries of the Siyanda District Municipality.The Municipality comprises over an area of 18,333km².

The nearest business centre is Kimberley, which is about 200km away. The municipality's main town is Postmasburg

Economically Tsantsabane is known for being rich in minerals, and for its mining, agriculture, manufacturing and farming sectors. Tsantsabane has reinvented itself over the years as one of the leading investment hotspots in the Northern Cape.

According to census 2011, there are 35 093 people in the municipality. Of these, 52,8% are African black, 37,6% are coloured, and 8,4% are white. Other population groups make up the remaining 1,2% of the population.

Of those aged 20 years and older, 13,9% had some primary schooling, 5,3% had completed primary, 35,4% had some secondary, and 25,4 had matric. Only 6,4% had a higher qualification, and 13,7% had no form of schooling.

Economically Tsantsabane is known for being rich in minerals, and for its mining, agriculture, manufacturing and farming sectors. Tsantsabane has reinvented itself over the years as one of the leading investment hot spots in the Northern Cape. The construction of the Anglo American Kumba Iron Ore's Kolomela mine has brought an implosion of development to the area.

6 ENVIRONMENTAL IMPACT ASSESSMENT

6.1 ENVIRONMENTAL IMPACT ASSESSMENT PROCESS FOLLOWED

6.1.1 Approach to Environmental Impact Assessment

The term 'environment' is used in the broadest sense in an EIA. It covers the physical, biological, social, economic, cultural, historical, institutional and political environments.

An Environmental Impact Assessment is a good planning tool. It identifies the environmental consequences of a proposed area from the beginning and helps to ensure that the area, over its life cycle, will be environmentally acceptable and integrated into the surrounding environment in a sustainable way.

6.1.2 Environmental Impact Assessment Process Followed

Under Section 24 of the National Environmental Management Act (NEMA), the Minister promulgated the regulations pertaining to environmental impact assessments (EIA Regulations, 2014) under Government Notice NO. 326 in Government Gazette 38282 of 4 December 2014. These EIA regulations repealed the 2010 EIA regulations and therefore any process relating to environmental authorisations must be undertaken under the EIA Regulations, 2014.

Chapter 4 of the EIA Regulations, 2014 deals with the provisions for application for environmental authorisation. In view of the above, National Treasure Minerals (Pty) Ltd is obliged to comply with provisions of Chapter 4 for the intended environmental authorisation application for the activities (listed activities) within the proposed area.

Part 2 of chapter 4 of the EIA Regulations, 2014 contemplate process to be undertaken for the application for environmental authorisation for the proposed area, which is the BAR process. The process to be followed is describe below.

6.1.2.1 Pre-application consultation with the Competent Authority

In terms of section 24D (1) of the National Environmental Management Act, 1998 (Act 107 of 1998), the Minister responsible for mineral resources is the competent authority for environmental matters relating to mining and associated activities. In view of the above, the application for the environmental authorisation for the proposed area was submitted to the Department of Mineral Resources and Energy (DMRE), Northern Cape Regional Office for their consideration and decision making.

6.1.2.2 BAR Phase

In compliance with Regulation 19 of the EIA Regulations, 2014, the BAR and EMPR will be submitted to the competent authority within 90 days after the acknowledgement of the environmental authorisation application.

As part of the public participation, the draft BAR and EMPR is made available to the competent authority, potential and registered interested and affected parties for their comment for a period of 30 days during the EIA phase.

6.1.2.3 Information Gathering

Environmental baseline data has been obtained, pertaining to surface water, geohydrological data, topographical analyses, soil surveys, vegetation surveys, wetland surveys and geological conditions. Weather data was acquired from the South African Weather Service. Historic land use was determined through available data and by visual observations made during various field studies. The data accumulated and analysed is sufficient to gain a baseline indication of the present state of the environment. The use of this baseline study for impact assessments is thus justified and reliable conclusions could be made.

6.1.2.4 Decision on the BAR & EMPR application

In compliance with Regulation 20 of the EIA Regulations, 2014, the competent authority will within 107 days of receipt of the BAR and EMPR grant or refuse the environmental authorisation.

6.2 ENVIRONMENTAL IMPACT ASSESSMENT METHODOLOGY

The following prediction and evaluation of impacts is based on the proposed Klipbanksfontein prospecting project and associated activities.

The evaluation distinguishes between significantly adverse and beneficial impacts and allocates significance against national regulations, standards and quality objectives governing:

- Health & Safety;
- Protection of Environmentally Sensitive Areas;
- Land use; and
- Pollution levels.

Irreversible impacts are also identified.

The significance of the impacts is determined through the consideration of the following criteria:

Probability	:	likelihood of the impact occurring
Area (Extent)	:	the extent over which the impact will be experienced.
Duration	:	the period over which the impact will be experienced.
Intensity	:	the degree to which the impact affects the health and welfare of humans and the environment (includes the consideration of unknown risks, reversibility of the impact, violation of laws, precedents for future actions and cumulative effects).

The above criteria are expressed for each impact in tabular form according to the following definitions:

Probability	Definition
Low	There is a slight possibility (0 – 30%) that the impact will occur.
Medium	There is a 30 –70% possibility that the impact will occur.
High	The impact is definitely expected to occur (70% +) or is already occurring.
Area (Extent)	**Definition**
Small	0 – 40 ha
Medium	40 – 200 ha
Large	200 + ha
Duration	**Definition**

Short	0 – 5 years
Medium	5 – 50 years
Long	51 – 200 years
Permanent	200 + years

Intensity	Definition
Low	Does not contravene any laws. Is within environmental standards or objectives. Will not constitute a precedent for future actions. Is reversible. Will have a slight impact on the health and welfare of humans or the environment.
Medium	Does not contravene any laws. Will not constitute a precedent for future actions. Is not within environmental standards or objectives. Is not irreversible. Will have a moderate impact on the health and welfare of humans or the environment.
High	Contravene laws. May constitute a precedent for future actions. Is not within environmental standards or objectives. Is irreversible. Will have a significant impact on the health and welfare of humans or the environment.

Significance and Risk Category	Definition
Negligible	The impact/risk is insubstantial and does not require management
Low	The impact/risk is of little importance, but requires management
Medium	The impact/risk is important; management is required to reduce negative impacts to acceptable levels
High	The impact/risk is of great importance, negative impacts could render options or the entire area unacceptable if they cannot be reduced or counteracted by significantly positive impacts, and management of these impacts is essential
Positive (No risk identified)	The impact, although having no significant negative impacts, may in fact contribute to environmental or economical health

6.3 RESULTS OF THE ENVIRONMENTAL IMPACT ASSESSMENT

6.3.1 Assessment of the National Treasure Minerals prospecting project impacts/risks

6.3.1.1 Construction Phase

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
PRE-CONSTRUCTION AND CONSTRUCTION PHASES							
Site Establishment: Establishment of the access (tracks) to the prospecting site, Establishment of the campsite, Site physical surveying and Pegging of drilling sites							
The establishment of access routes, campsites and the surveying with pegging of the drilling sites may result in the stripping of soils during site establishment. Should the above not be properly conducted, the activities will result in the loss of soils and can cause erosion that may render the area unusable. During site establishment, machinery and vehicles used for the prospecting operation may result in hydrocarbon leakages, which may result in the contamination of the soils within the access routes (roads and tracks), campsite and drilling sites.	Soil/Land capability	Without mitigation					Establishment of the site will be undertaken according to the approved prospecting method statement. No soil stripping will be allowed during site establishment. Ensure minimal disturbance of soil when conducting geophysical surveys and geological mapping (if necessary). Any area that may result into the disturbance of the soils must be rehabilitated immediately on discovery. Machinery to be used for the operation will be of good working conditions. Any hydrocarbon spill from the site establishment will be remediated as soon as possible.
		S	L	S	M	M	
		With mitigation					
		S	L	S	L	L	

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
PRE-CONSTRUCTION AND CONSTRUCTION PHASES							
Current land use over the area to be used for site establishment will cease completely. This may have an impact on the land owners' livelihood should they not be able to use the land. Drilling activities may infringe the livelihood and operations of activities occurring within and immediately adjacent the prospecting right area.	Land use	Without mitigation					Use sites that are unused and that are in the degraded state for the proposed development. This will be done in agreement with the land owners. The sitting of the boreholes will be conducted to ensure that rocky ridges, sensitive grass lands, indigenous trees and shrubs, sites of geological importance and farmlands actively used for farming are avoided.
		S	M	S	M	M	
		With mitigation					
		S	L	S	L	L	
The establishment of the site (access, campsite and drilling sites) may result in the removal of vegetation cover if the establishment is not done correctly. This may render the land unusable to the land owners after completion of the area.	Natural vegetation	Without mitigation					Use sites with most disturbed vegetation cover for the development. No strip of topsoil and vegetation will be allowed during site establishment. Ensure minimal disturbance of vegetation when conducting geophysical surveys and geological mapping. Any area that may result into the disturbance of the vegetation cover must be rehabilitated immediately on discovery. Pictures of possible plant species that may be present in the prospecting right area will be made available to the drilling crew for easy identification and avoidance. A species survey during the sitting of drilling boreholes will be undertaken.
		S	L	S	L	L	
		With mitigation					
		S	L	S	L	N	

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
PRE-CONSTRUCTION AND CONSTRUCTION PHASES							
Animal burrows and habitats remaining within the proposed development site may be destroyed during construction. This may result in the migration of remaining animal life away from the affected areas. Poaching of wild animals and livestock by the labourers will result in the loss of wild live and loss of livestock to the land owner.	Animal Life	Without mitigation					Establishment of the site will be undertaken according to the prospecting method statement. No soil stripping will be allowed during site establishment. Any area that may result into the disturbance of the soils must be rehabilitated immediately on discovery. Use sites with most degraded environment for the site development. Poaching will be prohibited at the prospecting site.
		S	L	S	L	L	
		With mitigation					
		S	L	S	L	N	
Exposure of soils during construction by the stripping of vegetation and soils may cause erosion, which may lead to increased silt loads in surface water runoff. This may result in the contamination of the clean water environment. Waste generated from the site may result in the contamination of surface and ground water should management of such waste not be undertaken.	Surface and Ground Water	Without mitigation					Site establishment will not be undertaken within sensitive landscapes, which sites will be avoided. A distance of 100 meters will be created between the sites and the sensitive landscapes. Avoid stripping of areas within the construction sites. Rehabilitate areas that may have been mistakenly stripped. Storm water upslope of the campsite and drill sites should be diverted around these areas. Proper waste management facilities will be put in place at the campsite and drilling site.
		S	L	S	M	M	
		With mitigation					
		S	L	S	L	L	

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
PRE-CONSTRUCTION AND CONSTRUCTION PHASES							
							Any hydrocarbon spill from the site establishment will be remediated as soon as possible.
Construction activities during the establishment of the site will include material loading and hauling. These activities will result in the mobilisation of particulates that will migrate away from the site to the nearby local residents. This may be a nuisance to the communities and will result in aesthetic impacts associated with fugitive dust emissions. On-site dust fall may have health and nuisance implications to employees at the existing offices.	Air Quality	Without mitigation					Ensure that source specific management measures for Klipbanksfontein prospecting project are complied with.
		S	L	S	L	L	
		With mitigation					
		S	L	S	L	N	
The noise level generated from the construction activities may exceed the SANS 10103 Levels for Residential areas and may exceed the maximum rating levels for ambient noise indoors. This may have an impact in the surrounding residents and employees using/delivering the machinery.	Noise	Without mitigation					Ensure that proper management measures as well as technical changes are undertaken to reduce the impacts on surrounding residents and employees. This include ensuring that less noisy equipment are used, that equipment is kept in good working order and that the equipment must be fitted with correct and appropriate noise abatement measures and where possible use white-noise generators instead of tonal reverse alarms on heavy vehicles operating on roads.
		S	L	S	L	L	
		Without mitigation					
		S	L	S	L	N	
	Visual Aspects	Without mitigation					

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
PRE-CONSTRUCTION AND CONSTRUCTION PHASES							
The activities undertaken during construction and associated infrastructure will be visible from the nearby roads and properties. However, due to the undulating topography, visibility for the most part will most probably be restricted to short distances.		S	L	S	L	L	Inform the land owner on the type of machinery and equipment to be used at the prospecting site. Ensure that lighting is conducted in manner that will reduce the impacts on visual aspects at night times.
		With mitigation					
		S	L	S	L	N	
The site may be located in close proximity to a heritage site and may result in the destruction of the identified heritage site.	Sites of Archaeological and Cultural Importance	Without mitigation					The establishment of the construction activities will be such that the development is always away from the any heritage sites. A buffer of more than fifty meters will be created between the grave yards and the proposed site development. A management plan will be drafted for the sustainable preservation of the grave yard should graveyards be identified on site. Any grave site must have access for descendants.
		S	M	S	H	H	
		With mitigation					
		S	L	S	L	L	
The commencement of the proposed area may result in an influx of ‘outsiders’ seeking jobs, which may be caused by increase in local unemployment levels. This may result in the have potential increase in crime. It must however be noted that prospecting activities would unlikely attract job seeker due to its small nature of its scale.	Socio economic aspects	Without mitigation					Recruitment will not be undertaken on site. Farm labourers will not be employed unless agreed to with the farm owners.
		S	L	S	L	L	
		With mitigation					
		S	L	S	L	N	

6.3.1.2 Operational Phase

NATURE OF THE IMPACT	ENVIRONMENTAL COMPONENT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
OPERATIONAL PHASE							
Drilling and rehabilitation of the exploration boreholes							
Topsoil removal, storage and replacement during the excavation of the sumps will result. This will result in the disruption of the soils profile.	Soils	Without mitigation					Ensure that topsoil is properly stored, away from the streams and drainage areas. The soils must be used for the backfilling and rehabilitation of the sumps. The rehabilitated sump must be seeded with recommended seed mix.
		S	M	S	L	L	
		With mitigation					
		S	L	S	L	N	
		S	L	S	L	L	
The use of vehicles during the siting, pegging and drilling of the exploration boreholes may result in the spillages of hydrocarbon liquids from the vehicles and machinery. This will result in the contamination of the vegetation cover and soils.	Natural Vegetation and Soils	Without mitigation					Ensure that the drilling of the exploration boreholes are done in such a manner that the environment is protected from probable spillages. All boreholes and sumps will be rehabilitated to pre-drilling conditions. Tarpaulins will be placed on the ground to prevent oil, grease, hydraulic fluid and diesel spills during emergency repairs. All oil spills will be remedied using approved methodologies. The contaminated soils will be removed and disposed of at a licensed waste disposal facility.
		S	M	S	M	M	
		With mitigation					
		S	L	S	L	L	

NATURE OF THE IMPACT	ENVIRONMENTAL COMPONENT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
OPERATIONAL PHASE							
							Pictures of possible plant species that may be present in the prospecting right area will be made available to the drilling crew for easy identification and avoidance. Plant species identification will be undertaken during the sitting of the exploration boreholes. All waste generated from the drilling sites and the campsite will be collected in proper receptacles and removed to a registered disposal facilities e.g., sewage treatment plant, solid waste disposal site or hydrocarbon recycling or treatment facilities.
Animal burrows and habitats will be destroyed by the preparation of the backfilling sites. This will further result in the migration of animals away from these areas of disturbance.	Animal Life	Without mitigation					The rehabilitation of the disturbed areas must be conducted such that the rehabilitated areas will encourage the migration of animals back into the rehabilitated areas. Poaching of wild animals and livestock will be prohibited.
		S	L	S	L	L	
		Without mitigation					
		S	L	S	L	N	
The drilling operations may result in the generation of surface water runoff contaminated with drilling muds and cuttings should spillages occur. The	Surface Water	Without mitigation					No prospecting operations will be undertaken within 100 metres from the nearby steams and wetland areas. The sumps will be excavated for the collection mud and excess
		S	L	S	M	L	

NATURE OF THE IMPACT	ENVIRONMENTAL COMPONENT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
OPERATIONAL PHASE							
sedimentation will have negative impacts on the surrounding clean water environment. This will cause an increase in the turbidity of the water in the streams, which will affect the aquatic habitat of the wetland, hence important habitats may be lost.		With mitigation					water from the drilling sites. The sump will be sized such that it will be able to contain the water and mud that will be generated during the prospecting operation. Storm water generated around the drilling site will be diverted away to the clean water environment. No concrete mixing and vehicle maintenance will be allowed on site. All hydrocarbons will be stored on protected storage areas away from the streams.
		S	L	S	L	L	
The prospecting operations will require the drilling of boreholes. The boreholes may result in the drawdown, which may affect the yield to the surrounding groundwater users. Material used for backfilling may leach pollutants that will result in the pollution of the surrounding groundwater regime. This may even spread beyond the backfilling site via plume migration.	Groundwater	Without mitigation					Ensure that the land owners' borehole yield is observed during the drilling operation. Should it be proven that the operation is indeed affecting the quantity and quality of groundwater available to users and surrounding water resources, the affected parties must be compensated.
		S	L	S	L	L	
		With mitigation					
		S	L	S	L	N	
The prospecting operation will require vehicular movement. This will result in the generation of dust by movement of vehicles and due to blowing winds. Vehicles and machinery will also generate diesel or petrol fumes. Generated dust will migrate towards	Air Quality	Without mitigation					Dust suppression must be conducted during the operational phase of the area should excessive dust be generated. Correct speed will be maintained at the proposed area site.
		S	L	S	L	L	
		With mitigation					

NATURE OF THE IMPACT	ENVIRONMENTAL COMPONENT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
OPERATIONAL PHASE							
the predominant wind direction and may settle on surrounding properties including nearby vegetation.		S	L	S	L	N	Vehicle maintenance must be conducted regularly to avoid excessive diesel fumes.
Noise generated from prospecting operations activities may add to the current noise levels. This may have impacts on surrounding property owners and occupiers.	Noise	Without mitigation					Ensure that proper management measures as well as technical changes are undertaken to reduce the impacts on surrounding residents and employees. This include ensuring that less noisy equipment is use, that equipment is kept in good working order and that the equipment must be fitted with correct and appropriate noise abatement measures and where possible use white-noise generators instead of tonal reverse alarms on heavy vehicles operating on roads. Correct speed will be maintained at the proposed area site. Limit operation of machinery and vehicle movement between sunrise and sunset.
		S	L	S	M	L	
		With mitigation					
		S	L	S	L	L	
The drill rigs and towers used during the drilling operations will be visible from the nearby residents and properties.	Visual Aspects	Without mitigation					Ensure that the period used for the drill rigs is optimised to ensure that the drill rigs are moved from one site to another over short periods.
		S	L	S	L	L	
		With mitigation					
		S	L	S	L	N	

NATURE OF THE IMPACT	ENVIRONMENTAL COMPONENT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
OPERATIONAL PHASE							
Operation may affect the day to day operation of the land owners hence result in direct impact on their livelihood.	Socio economic aspects	Without Mitigation					Ensure that all safety measures (EMPR) are implemented to prevent the impacts on the property owners. Ensure that negotiations on compensation are undertaken before the drilling programme can commence. This will include any other conditions that the landowner may deem necessary for the prospecting operation.
		S	L	S	L	L	
		With Mitigation					
		S	L	S	L	N	
Operation will result in the employment of locals and support on local businesses.	Socio economic aspects	Positive					The applicant will ensure that as far as possible locals will be used during the operation of the prospecting area.
The drilling operation may result in the destruction of graves and any other heritage sites during operational phase of the area.	Sites of archaeological and cultural importance	Without Mitigation					Locate exploration borehole more than one hundred meters from the identified heritage sites. Should any cultural or heritage materials be identified, these areas will be demarcated and treated as no-go areas during the prospecting activities. Detailed heritage studies would then be undertaken if it is deemed that these sites would be affected by the prospecting activities. Any finds will be reported to the nearest National Monuments office to comply with the National Heritage Resources Act (Act No 25 of 1999) and to DEA. Local museums as well as the South African Heritage Resource Agency (SAHRA) will be informed if any
		S	M	S	H	H	
		With Mitigation					
		S	S	S	L	L	

NATURE OF THE IMPACT	ENVIRONMENTAL COMPONENT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
OPERATIONAL PHASE							
							artefacts are uncovered in the affected area. The prospecting workforce will be made aware of the necessity of reporting any possible historical or archaeological finds to the ECO so that appropriate action can be taken. Any discovered artefacts shall not be removed under any circumstances. Any destruction of a site can only be allowed once a permit is obtained and the site has been mapped and noted. Permits shall be obtained from the South African Heritage Resources Association (SAHRA) should the proposed site affect any world heritage sites or if any heritage sites are to be destroyed or altered.

6.3.1.3 Decommissioning and Closure Phases

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
DECOMMISSIONING AND CLOSURE PHASES							
Decommissioning of prospecting site (Site Rehabilitation)							
The removal of the campsite equipment and the rehabilitation of the drilling sites and associated access infrastructure will result in the affected soil and land use being restored. This will also result in the resumption of the use of the land since the infrastructure would have been removed.	Soils, Land Capability and Land Use	Positive impact					Ensure that rehabilitation is conducted in accordance with a rehabilitation method statements approved by the mine management. See description of the rehabilitation plan and management actions in the EMPR. Ensure that contamination of the rehabilitate area by carbonaceous material and hydrocarbon liquids are prevented.
Positive impacts will result due to the reduction in areas of disturbance and the return of land use of the affected areas and making available an area that was covered by the campsite and drilling sites.	Land Use	Positive impact					
		Without mitigation					

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
DECOMMISSIONING AND CLOSURE PHASES							
The use of vehicles/machinery during the rehabilitation of the exploration sites may result compaction of soils and in the spillages of hydrocarbon liquids from the vehicles and machinery. This will result in the contamination and destruction of the vegetation cover and soils.	Soils and Natural Vegetation	S	M	S	M	M	Ensure that the rehabilitation work is done in such a manner that the environment is protected from probable spillages. All boreholes and sumps will be rehabilitated to pre-drilling conditions. Tarpaulins will be placed on the ground to prevent oil, grease, hydraulic fluid and diesel spills during emergency repairs. All oil spills will be remedied using approved methodologies. The contaminated soils will be removed and disposed of at a licensed waste disposal facility. All waste generated from the rehabilitation sites will be collected in proper receptacles and removed to registered disposal facilities e.g., sewage treatment plant, sold waste disposal site or hydrocarbon recycling or treatment facilities.
		With mitigation					
		S	L	S	L	L	
During the decommissioning and closure phases equipment will be removed, stockpiled soils will be used for rehabilitation, remaining sumps will be backfilled, levelled, topsoiled and the area re-seeded. During the process of rehabilitation surface water runoff from the rehabilitation site may have elevated silt load, which may cause pollution of the nearby water environment.	Surface Water	Without mitigation					Ensure that water leaving the site do not have elevated silt load. Ensure that the rehabilitated areas are free draining and that water from these areas is clean.
		S	L	S	L	L	
		With mitigation					
		S	L	S	L	N	

NATURE OF THE IMPACT	ENVIRONMENTAL ASPECT	IMPACT ASSESSMENT					MITIGATION MEASURES
		E	P	D	I	S	
DECOMMISSIONING AND CLOSURE PHASES							
Rehabilitation and removal of the prospecting sites and equipment will require vehicular movement. This will result in the generation of dust by movement of vehicles and due to blowing winds. Vehicles and machinery will also generate diesel or petrol fumes. Generated dust will migrate towards the predominant wind direction and may settle on surrounding properties including nearby vegetation.	Air Quality	Without mitigation					Dust suppression must be conducted during the decommissioning phase of the area whenever excessive dust is generated. Correct speed will be maintained at the proposed area rehabilitation sites. Vehicle maintenance must be conducted regularly to avoid excessive diesel fumes.
		S	L	S	L	L	
		With mitigation					
		S	L	S	L	N	
Noise will be generated during the removal of equipment and rehabilitation of the sites. This noise is not expected to exceed occupational noise limits and will be short lived.	Noise	Without mitigation					Where necessary, provide employees with ear plugs and employees must be instructed to use the ear plugs. Ensure that equipment is well maintained and fitted with the correct and appropriate noise abatement measures.
		S	L	S	L	L	
		With mitigation					
		S	L	S	L	N	

6.4 SUMMARY OF SPECIALIST REPORTS

Since desktop information was used, no specialist studies were conducted for the proposed area.

6.5 ENVIRONMENTAL IMPACT STATEMENT

National Treasure Minerals (Pty) Ltd has applied for a prospecting right over the Klipbanksfontein prospecting project. The prospecting operation will involve the exploration for manganese and iron ore within the prospecting right area. Diamond core drilling will be used or the exploration and a campsite will be established on site. Each drilling site will have an access route in the form of a track or existing road and a sump for the collection of waste water generated during the drilling operation.

6.5.1 Description of affected environment

The proposed area is situated within the Hotazel formation. The proposed area is situated in area encompasses flat rocky plains and some sloping hills, rolling hills with generally gentle to moderate slopes and hill pediment areas, including surface water features such as rivers, streams and pan depressions. A variety of soil types were identified within the area, which include recharge, interflow and responsive soils. The land uses over the area correspond to the soils found in the area and include mainly grazing, wells/livestock pens roads and rivers.

6.5.2 Summary of key findings of the environmental impact assessment

During the proposed prospecting operation significant impacts may occur on soils, natural vegetation, surface water, groundwater, sensitive landscapes, air quality, noise, visual aspects, and sites of archaeological and cultural importance. Alternatives considered for the location campsite and drilling sites has shown that the selected locations would be the most favourable. National Treasure Minerals (Pty) Ltd will undertake measures to ensure that the identified impacts are minimised. Assessment of the impacts with the proposed mitigation measures has shown the significance of the impacts on all affected environmental aspects to be reduced from to low and negligible significance.

Land use will not change. Several landowners and land occupiers within the proposed area may be affected although on a temporary basis due to the need to access the sites and establishment and use of the campsite. Measures such as safety along the roads and dust suppression will be undertaken to ensure that the impacts on the land owners and land occupiers are minimised.

Storm water runoff from the dirty water areas of the drilling sites, its associated surface infrastructure (campsite) may have a detrimental impact on the surrounding water environment should this water be released to the environment. In order to prevent the occurrence of the above-mentioned impacts, dirty water collection sump will be used to collect all dirty water from the drilling site. The water collected from the sump will re-used, evaporated and the sump will be rehabilitated once the drilling is completed. Sediments generated created from the site during the construction, operational and decommissioning phase, which may impact negatively on the surrounding water environment, will be treated should they contain hydrocarbon waste.

All workers will be housed in the campsite to be established on site. The employees will be given strict instruction not to undertake activities that will affect the environment and that may have an impact on the landowner. Waste generated from the site will be collected in proper receptacle and disposed off in registered waste disposal sites. Agreements will be reached with landowners where the campsite will be sited.

6.5.3 Final Master Layout Plan

The final maps showing the layouts of the proposed area will be submitted to the DMRE on granting of the prospecting right. The map will be developed to superimpose the proposed prospecting area together and associated infrastructure with the environmental sensitivities within the proposed area site.

6.6 ASPECTS FOR INCLUSION AS CONDITIONS OF THE ENVIRONMENTAL AUTHORISATION

In authorising the proposed Klipbanksfontein prospecting project, the following conditions should form part of the environmental authorisation:

- National Treasure Minerals (Pty) Ltd may not alter the location of any of the area activities included in this environmental impact assessment without obtaining the required environmental authorisation to do so under NEMA.
- National Treasure Minerals (Pty) Ltd will not undertake any new activity that was not part of this environmental impact assessment and that will trigger a need for an environmental authorisation without proper authorisation.
- National Treasure Minerals (Pty) Ltd must, where necessary, undertake specialists studies, management procedures and method statement should the need arise.
- The EMPR must be implemented fully at all stages of the proposed area
- National Treasure Minerals (Pty) Ltd must limit night-time operations. This would be relevant for all work taking place at night within 150m from the closest receptors in this community. If night work is conducted, such must be conducted in agreement with the land owners and affected parties (lawful land occupier and labours).

6.7 DESCRIPTION OF ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE

The EIA Regulations, 2014 outline specific requirements that a description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures must be provided in the BAR.

The assessments undertaken are based on conservative methodologies and these methods attempts to determine potential negative impacts that could occur on the affected environmental aspects. These impacts may however be of smaller magnitude than predicted, while benefits could be of a larger extent than predicted.

This section outlines various limitations to the specialist studies that have been undertaken and indicates, where appropriate, the adequacy of predictive methods used for the assessment. This has been done to provide the authorities and interested and affected parties with an understanding of how much confidence can be placed in this impact assessment.

The EIA has investigated the potential impact on key environmental media relating to the specific environmental setting for the site. A number of desktop assessment were undertaken and result thereof and are presented in this report.

The information provided in this BAR and EMPR is therefore considered sufficient for decision-making purposes.

6.8 Reasoned Opinion as to Whether the Proposed Area should or should not Continue

6.8.1 Reason why the activity should be authorised or not

According to the impact assessment undertaken for the proposed area, the key impacts of the area are on soils, natural vegetation and land owners/occupiers.

The area will also have positive impacts due to the employment to be created although for a short term.

The public will also be requested for their comments. All comments to be received during Public Participation Process will be included in this BAR and EMPR. These comments will be addressed the as far as possible to the satisfaction of the interested and affected parties.

The management of the impacts identified in the impact assessment for all phases of the proposed area will be undertaken through a range of programmes and plans contained in the EMPR. In consideration of the programmes and plans contained within the EMPR, layouts and method statements compiled for the area, which is assumed will be effectively implemented, there will be significant reduction in the significance of potential impacts.

Based on the above, it is therefore the opinion of the EAP that the activity should be authorised.

6.8.2 Conditions that must be included in the authorisation

See section 6.6 above.

6.9 Period for which the Environmental Authorisation

Based on the prospecting method statement, the environmental authorisation should be given for five years.

6.10 Undertaking

The signed undertaking will be presented to the DMRE on execution of the prospecting right.

6.11 Financial Provision

According to Appendix 3 of the EIA Regulations, 2014, where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts must be provide in the BAR and EMPR. In order to avoid duplication, the financial provision for the proposed area has only been provided under the relevant section of the EMPR.

6.12 Other Information Required by the Competent Authority

Aside from the BAR and EMPR no other information has been requested by the competent authority

6.13 Other Matters Required in Terms of Section 24 (4) (a) and (b) of the Act

Any matter required in terms of the above section of the Act will be complied with by National Treasure Minerals (Pty) Ltd.

PART B

Environmental Management Programme

7 DETAILS OF THE EAP

The details of the EAP are provided in section 1.1 of part A of this document

8 DESCRIPTION OF THE ASPECTS OF THE ACTIVITY

The requirements to describe the aspects of the activity are covered by the environmental management programme and are included in PART A of the document under section 1. The reader is therefore referred to section 1 of PART A of this document.

9 COMPOSITE MAP

The map superimposing the proposed area, its associated structures and infrastructure on the environmental sensitivities of the preferred site will be provided on approval of the EMPR. Note that all areas that must be avoided due to their environmental sensitivity will be indicated in the map.

10 DESCRIPTION OF THE MANAGEMENT OBJECTIVES INCLUDING MANAGEMENT STATEMENTS

10.1 General Closure Principles and Objectives

The following are the closure objectives, general principles and objectives guiding closure of the Klipbanksfontein prospecting project closure planning:

- Rehabilitation of areas disturbed as a consequence of prospecting to a land capability that will support and sustain a predetermined post-closure land uses;
- Removal of all infrastructure/equipment that cannot be beneficially re-used, as per agreements established, and returning the associated disturbed land to the planned final land use;
- Removal of existing contaminated material from affected areas;
- Establishment of final landforms that are stable and safe in the long run;
- Establishment and implementation of measures that meet specific closure related performance objectives;
- Treatment of mine-affected water to ensure compliance with all relevant standards and supply
- Monitoring and maintenance of rehabilitated areas forming part of site closure to ensure the long-term effectiveness and sustainability of measures implemented.

10.2 MANAGEMENT OF ENVIRONMENTAL DAMAGE, ENVIRONMENTAL POLLUTION AND ECOLOGICAL DEGRADATION CAUSED BY THE KLIPBANKSFONTEIN PROSPECTING PROJECT ACTIVITIES

The following actions will be undertaken by National Treasure Minerals (Pty) Ltd to ensure that the closure objectives are attained.

10.2.1 Infrastructure Areas

- All infrastructure and equipment used during the prospecting operation will be removed from the site.
- All tracks that were used for access the drilling sites will be allowed to re-establish to its pre-prospecting condition. Should unsatisfactory results be noted, the area will be physically rehabilitated.
- All rehabilitated areas will be maintained for a period of 2 years, where after the frequency will be reassessed. Where necessary, vegetation cover will be maintained by annual application of fertiliser.
- Maintenance with respect to erosion will be conducted on a minimum three monthly basis if and where required.

10.2.2 Buildings (Offices, Workshops and Stores)

Mobile structures will be used and such structures will be removed from the sites during decommissioning of the site.

10.3 POTENTIAL RISK OF ACID MINE DRAINAGE

No potential risk of acid mine drainage.

10.4 STEPS TAKEN TO INVESTIGATE, ASSESS AND EVALUATE THE IMPACTS OF THE ACID MINE DRAINAGE

Since there is no risk of acid mine drainage, there will be no need for steps to be taken to investigate, assess and evaluate the impacts of acid mine drainage.

10.5 ENGINEERING AND DESIGNS SOLUTIONS TO BE IMPLEMENTED TO AVOID OR REMEDY ACID MINE DRAINAGE

Since there is no risk of acid mine drainage, there will be no need for engineering and designs solutions to be implemented to avoid or remedy acid mine drainage.

10.6 MEASURES TO REMEDY RESIDUAL OR CUMULATIVE IMPACTS FROM ACID MINE DRAINAGE

Since there is no risk of acid mine drainage, there will be no need for measures to remedy residual or cumulative impacts from acid mine drainage.

10.7 Volumes and Rates of Water Use Required for the Proposed Area

Since there is no risk of acid mine drainage, this section will not applicable.

10.8 Water Use Licence Application

No water use activities will be undertaken during the proposed prospecting operation, hence no water use licence will be applied for. The applicant must apply for a GA before drilling within 500m of nearby streams and/or wetlands.

11. ENVIRONMENTAL MANAGEMENT PROGRAMME

Table 5: Environmental Management Programme for the proposed Klipbanksfontein prospecting project.

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions and Interventions	Responsibility for Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
PRE-CONSTRUCTION AND CONSTRUCTION PHASES								
Establishment of access, to prospecting sites, establishment of the campsite, physical surveying of the site and pegging of drilling boreholes								
		To ensure that the activities in the development of the prospecting sites and associated infrastructure do not have detrimental impacts on the soils, land use and land capability.	Ensure that the establishment of the prospecting sites is undertaken in accordance with the approved EMPr. All instituted buffer zones will be respected and adhered to.	Establishment of the site will be undertaken according to the approved prospecting method statement.	Appointed contractor and site manager.	Visual monitoring through inspections.	Environmental Control Officer (ECO) during construction.	During construction phase.
				No soil stripping will be allowed during site establishment.	Appointed contractor.	Visual monitoring and inspections	ECO monthly.	During construction phase.
				Should it be necessary to conduct geophysical surveys and geological mapping, ensure minimal disturbance of soil.	Appointed contractor.	Visual monitoring and inspections.	ECO monthly.	During construction phase.
Loss of soils, erosion of the soils and impacts on land owner's livelihood.	Soils, Land Use and Land Capability			Any area that may result into the disturbance of the soils must be rehabilitated immediately on discovery.	Appointed contractor and the appointed site manager.	Visual monitoring and inspections.	ECO monthly.	During construction phase.
				Machinery to be used for the operation will be of good working conditions. Any hydrocarbon spill from the site establishment will be remediated as soon as possible.	Appointed contractor.	Visual monitoring and inspections	ECO monthly.	During construction phase.
				Use sites that are unused and that are in the degraded state for the proposed development. This must be done in agreement with the land owner. The sitting of the boreholes must be conducted such that ensure that rocky ridges, sensitive grass lands, indigenous trees and shrubs, sites of	Appointed contractor.	Undertake regular inspections.	ECO monthly.	During construction phase.

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions and Interventions	Responsibility for Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
				geological importance and farmlands actively used for crop farming are avoided.				
Loss of natural vegetation in the affected areas.	Flora	To ensure that the establishment of the prospecting site and associated infrastructure/equipment do not have detrimental impact on the area's flora.	The management of the impact will comply with the company's biodiversity management plan. Ensure that protected species should they be identified are not destroyed.	Use sites with most disturbed vegetation cover for the development.	Appointed contractor and site manager.	Visual monitoring and inspections.	ECO monthly.	During construction phase.
				No strip of topsoil and vegetation will be allowed during site establishment.	Appointed contractor and site manager.	Visual monitoring and inspections.	ECO monthly.	During construction phase.
				Ensure minimal disturbance of vegetation when conducting geophysical surveys and geological mapping.	Appointed contractor and site manager.	Visual monitoring and inspections.	ECO monthly.	During construction phase.
				Any area that may result into the disturbance of the vegetation cover must be rehabilitated immediately on discovery.	Appointed contractor and site manager.	Visual monitoring and inspections.	ECO monthly.	During construction phase.
				Before the drilling activities can commence, a biodiversity specialist must do a site inspection on the proposed marked drilling sites (proposed boreholes) to assess if there are no protected and/or critical natural vegetation. If any protected and/or critical natural vegetation occurs, the location of the proposed boreholes must be changed.	Appointed specialist.	A report with recommendations will be produced by the specialist.	Once the drilling sites are sited and study conducted.	During phase of the drilling programme where the sitting of drilling sites is undertaken.
Migration of animal life due to disturbance caused proposed area	Animal Life	Ensure that the animal life within in the area is not affected by the proposed area.	Maintenance of the current status on animal life within the area.	Establishment of the site will be undertaken according to the approved prospecting method statement.	Appointed contractor and site manager.	Visual monitoring and inspections.	ECO monthly.	During construction phase.
				No soil stripping will be allowed during site establishment. Any area that may result into the disturbance of the soils must be rehabilitated immediately on discovery.	Appointed contractor and site manager.	Visual monitoring and inspections.	ECO monthly.	During construction phase.
				Use sites with most degraded environment for the site development.	Appointed contractor and site manager.	Visual monitoring and inspections.	ECO monthly.	During construction phase.

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions and Interventions	Responsibility for Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
				Poaching will be prohibited at the prospecting site. Before the drilling activities can commence, a biodiversity specialist must do a site inspection on the proposed marked drilling sites (proposed boreholes) to assess if there are no animal burrows and habitats. If any burrows or habitat exist, the location of the proposed boreholes must be changed.	Appointed contractor and site manager. Appointed specialist.	Visual monitoring and inspections. A report with recommendations will be produced by the specialist.	ECO monthly. Once the drilling sites are sited and study conducted.	During construction phase. During phase of the drilling programme where the sitting of drilling sites is undertaken.
Deterioration of water quality in in the nearby steams and within the groundwater regime.	Surface and Ground Water	Ensure that the establishment of the area and its associated infrastructure does not have detrimental impact on nearby stream and the groundwater regime.	The quality of streams and groundwater within the site will comply with the target DWS target water quality objectives. Construction will be in compliance with the regulations under the GN704.	Site establishment will not be undertaken within sensitive landscapes. These areas will be avoided. A distance of 100 meters will be created between the sites and the sensitive landscapes, which include all watercourses. Avoid stripping of areas within the construction sites.	Appointed contractor and site manager.	Regular inspections	ECO monthly.	During construction phase.
				Rehabilitate areas that may have been mistakenly stripped.	Appointed contractor and site manager.	Regular inspections	ECO monthly.	During construction phase
				Storm water upslope of the campsite and drill sites will be diverted around these areas.	Appointed contractor and site manager.	Regular inspections	ECO monthly.	During construction phase
				Proper waste management facilities will be put in place at the campsite and drilling site. Any hydrocarbon spill from the site establishment will be remediated as soon as possible.	Appointed contractor and site manager.	Regular inspections	ECO monthly.	During construction phase.
				The applicant must also apply for a GA before drilling within 500m of nearby streams and/or wetlands.	Appointed contractor	General Authorisation report/license	Once the drilling sites are sited and GA applied for.	During construction phase.

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions and Interventions	Responsibility for Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
Wetland destruction and loss of habitat.	Sensitive Landscapes	Ensure that the construction activities do not have detrimental impacts on the sensitive landscapes.	Maintain the current state of the sensitive landscapes within the area (farm dams and seepage zone).	Construction activities will be limited to be more than hundred meters from the edge of the dams and seepage zone. The applicant must also apply for a GA before drilling within 500m of nearby streams and/or wetlands.	Appointed contractor and site manager. Appointed contractor	Inspection to ensure compliance with the action plan will be conducted at the construction site. General Authorisation report/license	ECO will conduct the inspections monthly. Once the drilling sites are sited.	Whenever construction is undertaken near the sensitive landscapes. Whenever construction is undertaken near the sensitive landscapes.
Air pollution through air pollutants' emissions, from the construction site.	Air quality	Ensure that all operations during the construction phase do not result in detrimental air quality impacts.	The construction will be undertaken such that the ambient air quality does not exceed the National Air Quality Standards.	Wet suppression will be conducted at areas with excessive dust emissions. Traffic will be restricted to demarcated areas and traffic volumes and speeds within the construction site will be controlled.	Appointed contractor and site manager. Appointed contractor and site manager.	Visual inspections of areas with possible dust emissions. Regular inspections.	ECO monthly. ECO monthly.	Throughout the construction phase. Throughout the construction phase.
Increased noise levels.	Noise aspects	Ensure that the noise levels emanating from the construction sites will not have detrimental effects on the mine employees and surrounding communities/land owners.	The noise levels from the construction sites will be managed and measures will be taken to ensure that noise levels are below the National Noise Control Regulations, SANS10103:2008 guidelines.	Limit the maximum speed to 60 km/h or less, subject to risk assessment. Well maintained equipment that are kept in good working order will be used. These equipment will be fitted with correct and appropriate noise abatement measures. Ensure that the employees are issued with earplugs and that they are instructed to use them. Educate employees on the dangers of hearing loss due to mine machinery noise.	Appointed contractor and site manager. Site manager. Site manager.	Undertake site checks on speeds used. Speed checking will be conducted. Use of earplugs will be checked and reported.	Site manager. Site manager checking as regularly as possible. Site manager will check the use of the earplugs as regularly as possible.	Throughout the construction phase. Throughout the duration of the construction phase Throughout the duration of the construction phase.
Visual impacts on the surrounding communities and	Visual aspects	Ensure that all operations during the construction phase do not result in detrimental	Measures will be undertaken by the mine to ensure that the visual	The land owner will be informed on the type of machinery and equipment to be used at the prospecting sites.	Applicant and site manager.	The constructed perimeter berms will be inspected	Mine Engineer on a monthly basis.	Throughout the construction phase.

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions and Interventions	Responsibility for Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
road users from the construction.		visual impacts on surrounding properties, communities and road users.	aspects from the site are complying with the relevant visual standards and objectives.	Lighting will be conducted in manner that will reduce the impacts on visual aspects at night times.	Appointed contractor.	for compliance with the design specifications. Night time inspection of the site will be undertaken.	The site manager once	During construction phase.
Damage or destruction of sites with archaeological and cultural significance.	Sites of archaeological and cultural importance	Ensure that the construction activities do not have detrimental impacts on the heritage sites.	The construction will be undertaken in compliance with the requirements of the National Heritage Resources Act, 1999 (Act 25 of 1999) and recommendations from the specialist.	The establishment of the sites will be away from any identified grave site or heritage sites. A buffer of hundred meters will be created between the sites and the proposed camp and drilling sites.	Appointed contractor and site manager.	The site will be monitored for any damages on a regular basis.	ECO monthly	Throughout the construction phase when activities are in close proximity to the heritage sites.
Impact from the influx of job seekers and employment of farm labourers.	Socio-economic aspects	Ensure that measures are taken to discourage influx of job seekers and employment of farm labourers.	Measures taken will be in line with the company's recruitment policies.	Recruitment will not be undertaken on site. Farm labourers will not be employed unless agreed to with the farm owners.	Appointed contractor and site manager.	Visual monitoring.	Site manager	Throughout the pre-construction and construction phase.
OPERATIONAL PHASE								
Diamond Core drilling of the exploration boreholes, use of campsite and rehabilitation of the drilling sites								
Soil profile disruption, contamination of soils, destruction of natural vegetation and loss of land use.	Soils, Natural Vegetation, Land Use and Land Capability.	Ensure that the operation of the drilling sites and use of campsite and rehabilitation of drilling site do not have detrimental impacts on the soils, natural vegetation and current land use.	The land use and capability of the sites where the operations will be undertaken will continue after the proposed area.	Ensure that the drilling of the exploration boreholes are conducted in such a manner that the environment is protected from possible spillages. All boreholes and sumps will be rehabilitated to pre-drilling conditions. Tarpaulins will be placed on the ground to prevent oil, grease, hydraulic fluid and diesel spills during emergency repairs. All oil spills will be remedied using approved methodologies. The contaminated	Appointed contractor and site manager. Appointed contractor. Appointed contractor.	Regular inspections. Regular inspections. Regular inspections.	ECO monthly. ECO monthly. ECO monthly.	During the operational phase of the area. During the operational phase of the area. During the operational phase of the area.

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions and Interventions	Responsibility for Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
				soils will be removed and disposed of at a licensed waste disposal facility. All waste generated from the drilling sites and the campsite will be collected in proper receptacles and removed top registered disposal facilities e.g., sewage treatment plant, solid waste disposal site or hydrocarbon recycling or treatment facilities. Before the drilling activities can commence, a biodiversity specialist must do a site inspection on the proposed marked drilling sites (proposed boreholes) to assess if there are no protected and/or critical natural vegetation. If any protected and/or critical natural vegetation occurs, the location of the proposed boreholes must be changed.	Appointed contractor Appointed specialist	Inspection of the site will be conducted. A report with recommendations will be produced by the specialist.	ECO monthly. Once the drilling sites are sited and study conducted.	During the operational phase of the area. During operational phase.
Migration of animal life due to disturbance caused proposed area	Animal Life	Ensure that the animal life within the area is not affected by the proposed area.	Maintenance of the current status on animal life within the area.	Sites will be operated according to the approved prospecting method statement. As much as possible sites with degraded environment will be used for the drilling purposes. Poaching will be prohibited at the prospecting site. Before the drilling activities can commence, a biodiversity specialist must do a site inspection on the proposed marked drilling sites (proposed boreholes) to assess if there are no animal burrows and habitats. If any burrows or habitat exist, the location of the proposed boreholes must be changed.	Appointed contractor and site manager. Appointed contractor and site manager. Appointed contractor and site manager. Appointed specialist	Visual monitoring and inspections. Visual monitoring and inspections. Visual monitoring and inspections. A report with recommendations will be produced by the specialist.	ECO monthly. ECO monthly. ECO monthly. Once the drilling sites are sited and study conducted.	During operational phase. During operational phase. During operational phase. During operational phase

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions and Interventions	Responsibility for Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
The drilling operation and use of campsite may result in the generation of surface water runoff contaminated with silt (sedimentation) and possibly hydrocarbon fluids should spillages occur.	Surface and Ground Water.	Ensure that the drilling operation does not have detrimental impacts on the surface and ground water environment.	Clean surface and ground water environment/regime will not be affected.	No prospecting operations will be undertaken within 100 metres from the nearby streams. The sumps will be excavated for the collection of mud and excess water from the drilling sites. The sump will be sized such that it will be able to contain the water and mud that will be generated during the prospecting operation. Storm water generated around the drilling site will be diverted away to the clean water environment. No concrete mixing and vehicle maintenance will be allowed on site. All hydrocarbons will be stored on protected storage areas away from the streams. Ensure that the land owners' borehole yield are observed during the drilling operation. Should it be proven that the operation is indeed affecting the quantity and quality of groundwater available to users and surrounding water resources, the affected parties must be compensated. The applicant must also apply for a GA before drilling within 500m of nearby streams and/or wetlands.	Appointed contractor and site manager. Appointed contractor and site manager. Appointed contractor and site manager. Appointed contractor and site manager. Appointed contractor	Visual monitoring and inspections. Visual monitoring and inspections. Visual monitoring and inspections. Regular meetings with landowners. General Authorisation report/license	ECO monthly. ECO monthly. ECO monthly. Site manager Once the drilling sites are sited.	During operational phase. During operational phase. During operational phase. During operational phase. Whenever drilling is taking place near sensitive landscapes.
Generation of dust and fuel fumes by vehicular movement.	Air quality.	Ensure that the air quality in the vicinity of the prospecting sites and sites' access routes are not detrimentally altered.	The air quality in the vicinity of the drilling sites and sites' access routes will be maintained to stay within the national air quality standards.	Dust suppression must be conducted during the operational phase of the area. Correct speed (60 km/h or less) will be maintained at the proposed area site.	Appointed contractor and site manager. Appointed contractor and site manager.	Visual inspections of areas with possible dust emissions. Regular speed checks.	ECO monthly. Site manager monthly.	Throughout the operational phase. Throughout the operational phase.

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions and Interventions	Responsibility for Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
				Vehicle maintenance must be conducted regularly to avoid excessive diesel fumes.	Appointed contractor and site manager.	Regular inspections.	ECO monthly.	During operational phase.
Wetland destruction and loss of habitat.	Sensitive Landscapes.	Ensure that the drilling operation does not have detrimental impacts on the farms dams and identified seepage zone.	Maintain the current state of the wetlands within the area.	Operation of the drilling site will be limited to be more than hundred meters from the edge of the sensitive landscapes. The applicant must also apply for a GA before drilling within 500m of nearby streams and/or wetlands.	Appointed contractor. Appointed contractor	Inspection to ensure compliance with the action plan. General Authorisation report/license	ECO monthly. Once the drilling sites are sited.	During operational phase. Whenever drilling is taking place near sensitive landscapes.
Increased noise levels.	Noise aspects.	Ensure that the noise levels emanating from the operational sites will not have detrimental effects on the mine employees and surrounding communities/land owners.	The noise levels from the sites will be managed and measures will be taken to ensure that noise levels are below the National Noise Control Regulations, SANS10103:2008 guidelines.	Limit the maximum speed to 60 km/h or less, subject to risk assessment. Less noisy equipment will be used, the equipment will be kept in good working order and the equipment will be fitted with correct and appropriate noise abatement measures. Ensure that the employees are issued with earplugs and that they are instructed to use them. Educate employees on the dangers of hearing loss due to mine machinery noise.	Appointed contractor and site manager. Site manager. Appointed contractor.	Site checks regularly. Regular monitoring and site check. Use of earplugs will be checked and reported.	Site manager. Site manager. Site manager.	During operational phase. During operational phase. During operational phase.
Visual impacts on the surrounding communities and road users from the construction.	Visual aspects.	Ensure that the drilling operations do not result in detrimental visual impacts on surrounding properties, communities and road users.	Measures will be undertaken by the mine to ensure that the visual aspects from the site are complying with the relevant visual standards and objectives.	The land owner will be informed on the type of machinery and equipment to be used at the prospecting sites. Lighting will be conducted in manner that will reduce the impacts on visual aspects at night times.	Applicant and site manager. Appointed contractor.	The constructed perimeter berms will be inspected for compliance with the design specifications. Night time inspection of the site will be undertaken.	Mine Engineer on a monthly basis. The site manager once	During operational phase. During operational phase.
Damage or destruction of sites with archaeological	Sites of archaeological and cultural importance.	Ensure that the operational activities do not have	The drilling operations will be undertaken in compliance with the	The drilling sites will be away from any identified grave site or heritage sites. A hundred-meter buffer will be created	Appointed contractor.	The site will be monitored for any prospecting	ECO monthly.	Throughout the operational phase.

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions and Interventions	Responsibility for Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
and cultural significance.		detrimental impacts on the heritage sites.	requirements of the National Heritage Resources Act, 1999 (Act 25 of 1999) and recommendations from the specialist.	between the sites and the proposed camp and drilling sites.		related damages on a regular basis.		
Safety, intrusion and livelihood impacts on the landowners and occupiers.	Socio-economic aspects.	Ensure that the drilling operation does not significantly disrupt the daily living and movements of the land owners and occupiers.	The mine will ensure that all safety standards are met and that access to landowners and occupiers are not detrimentally affected.	Announce any road closures and other disruptions and maintain roads used for the operation in good order. Keep communication with land owners and land occupiers open during the operational phase of the area. Ensure that negotiations on compensation are undertaken before the drilling programme can commence. This will include any other conditions that the landowner may deem necessary for the prospecting operation. Ensure that safety measures are implemented to prevent impacts on land owners and occupiers.	Appointed contractor and site manager. Applicant and site manager. Site manager.	Liaison with affected parties. Meetings with the landowners. Minutes of any meeting held with landowners and agreements will be recorded and filed. Regular checks and inspections.	Site manager as and when necessary. Site manager as and when meetings are held. Site manager.	Throughout the operational phase. Throughout the operational phase. Throughout the operational phase.
DECOMMISSIONING AND CLOSURE PHASE								
Removal of infrastructure and final rehabilitation of disturbed areas								
Compaction and contamination of soils within the rehabilitation site.	Soils.	Ensure that the soils in the vicinity of the rehabilitation site is not detrimentally impacted.	Rehabilitated areas will be maintained to comply with the closure objectives.	All vehicles and machinery used at the rehabilitation site will be kept in good working order. No repairs of vehicles or machinery will be conducted at the rehabilitation site unless it is emergency repairs, which will be conducted on protected ground.	Appointed contractor. Appointed contractor.	Vehicles and machinery will be inspected regularly and any oil incidences will be reported. All incidents of emergency repairs will be inspected and occurrence recorded.	Site manager will conduct the inspections monthly. Site manager.	Throughout the decommissioning and closure phases. Throughout the decommissioning and closure phases.

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions and Interventions	Responsibility for Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
				Movement of mine vehicles and machinery will be limited to demarcated routes, which will be rehabilitated when no longer in use.	Appointed contractor.	Rehabilitation site will be inspected to monitor areas with compaction or hydrocarbon contamination.	ECO will conduct the inspections monthly.	Throughout the decommissioning and closure phases.
Re-instatement of soil productivity, land capability, land use and topographical patterns.	Soils, Land Capability, Land Use and Topography.	Ensure that the rehabilitation of the sites re-instate the soil productivity, land capability, land use and topographical patterns	Rehabilitated areas will be maintained to comply with the closure objectives.	All infrastructure will be removed from the site in accordance to the rehabilitation plan.	Appointed contractor.	Removal of the infrastructure will be inspected.	Site manager will conduct the inspections.	During decommissioning phase.
Pollution of surface water environment.	Surface Water.	Ensure that the rehabilitation of the site does not have detrimental impacts on the surface water environment.	The surface water leaving the rehabilitation site will comply with the DWS target water quality parameters.	The site area will be rehabilitated to be free draining. Erosion protection measures such as the use of contour berms and repair of gullies will be undertaken until such time that the rehabilitated surfaces can be shown to be sustainable. Existing roads should be used where possible and new disturbed areas should be minimised.	Appointed contractor. Appointed contractor. Rehabilitation officer.	Progress of rehabilitation will be monitored. Areas where grass has not yet been established will be monitored for excessive erosion. Rehabilitation site will be inspected for misuse.	ECO will conduct monitoring of the rehabilitation annually.	Throughout the decommissioning and closure phases.
Air pollution from rehabilitation site.	Air quality.	Ensure that rehabilitation do not have detrimental impacts on air quality.	Decommissioning and rehabilitation of the site will be conducted in such a manner that the ambient air quality does not exceed the air quality standards.	Where necessary, wet suppression will be conducted at areas with excessive dust emissions. Vehicles and machinery will be well maintained. The traffic volumes and speed within the rehabilitation site will be controlled.	Appointed contractor. Site manager and appointed contractor.	Visual inspections of areas with possible dust emissions will be conducted. Site inspections will be conducted.	ECO will conduct inspections monthly. Site manager will conduct inspections monthly.	Throughout the decommissioning phase. Throughout the decommissioning phase.
Generated noise from the rehabilitation site.	Noise.	Ensure that the rehabilitation activities does not have detrimental impacts on people.	Ensure that the noise from the rehabilitation activities do not exceed the SANS 10103 Rating Level.	Smaller or less noisy equipment should where possible be used when working near receptors. Equipment will be well maintained and fitted with the correct and appropriate noise abatement measures.	Appointed contractor and site manager. Site manager and appointed contractor.	Regular site check. Regular site check.	Site manager. Site manager.	Throughout the decommissioning phase.

Impact Activity Reference	Environmental Attribute	Impact Management Objectives	Targets (Impact Management Outcomes)	Management Actions and Interventions	Responsibility for Actions/Intervention	Monitoring Action	Responsibility and Frequency For Monitoring	Time period for Management Action
Damage or destruction of sites with archaeological and cultural significance.	Sites of archaeological and cultural importance.	Ensure that the rehabilitation does not have detrimental impacts on heritage sites.	Should heritage sites be identified, rehabilitation in close proximity to the sites will not be damaged or destroyed by the rehabilitation activities.	A hundred-meter buffer will be maintained between any site and the rehabilitation site.	Appointed contractor and the site manager.	The sites will be monitored for any rehabilitation related damages.	ECO will monitor the site monthly.	Throughout the decommissioning phase.

12. FINANCIAL PROVISION

Section 24 P of NEMA requires an applicant applying for an environmental authorisation related to mining to comply with the prescribed financial provision for the rehabilitation, closure and ongoing post decommissioning management of negative environmental impacts before the Minister responsible for mineral resources issues the environmental authorisation. The above-mentioned financial provision may be in the form of an insurance, bank guarantee, trust fund or cash.

Regulations pertaining to the financial provision for prospecting, exploration, mining or production operations (GNR 1147) were promulgated on the 20th of November 2015. National Treasure Minerals (Pty) Ltd has undertaken the financial provision determination in line with the requirements of section 11 of the Regulations pertaining to the Financial Provision for Prospecting, Exploration, Mining or Production Operations (GNR 1147). The financial provision determination for the proposed area is submitted to the Department of Mineral Resources and Energy for their consideration.

12.1 Description of Closure Objectives and Extent to which they have been aligned to the described Baseline Environment

The closure objectives for the proposed area as detailed under section 4.1 of the EMPR, were determined in consideration of physical (infrastructure), biophysical (environmental) and socio-economic measures as well as alignment to the closure components provided by the Department of Mineral Resources and Energy (DMRE). See section 4.1 for the closure objectives.

12.2 Confirmation that the Environmental Objectives in relation to Closure have been Consulted with Landowners and Interested and Affected Parties

The draft BAR and EMPR is made available to the interested and affected parties during the public participation process for the proposed area. Note that the consultation of interested and affected parties included the owners of the properties directly affected by the proposed area and owners of land immediately adjacent the proposed area.

The above confirms that the land owners and interested and affected parties were consulted regarding the environmental objectives in relation to the closure of the proposed area.

12.3 Rehabilitation Plan for the Proposed Area

In terms of Regulation 23 of NEMA EIA Regulations, 2014, an EMPR must address the requirements as determined in the regulations, pertaining to the financial provision for the rehabilitation, closure and post closure of the proposed operations. In view of the above, a rehabilitation plan must be provided to the DMRE in support of the financial provision determined for the proposed operations. Since no disturbance has results on site due to the proposed area no annual rehabilitation plan was compiled.

12.4 Compatibility of the Rehabilitation Plan with the Closure Objectives

The rehabilitation plan has been drafted to be compatible with the closure objectives.

12.5 Determination of the Quantum of the Financial Provision Required to Manage and Rehabilitate the Environment

The financial pecuniary provision for Klipbanksfontein prospecting project will be determined based on the requirements of Chapter 2.4.1 of the Guideline document for the evaluation of the quantum of closure-related financial provision provided by a Mine, revision 1.6, September 2004, DMRE.

12.6 Method of Providing for the Financial Provision

According to Regulation 8 of the Regulations pertaining to the pertaining to the financial provision for prospecting, exploration, mining or production operations (GNR 1147), an applicant or holder of a right or permit must make financial provision by one or a combination of the following:

- financial guarantee from a bank registered in terms of the Banks Act, 1990 (Act No. 94 of 1990) or from a financial institution registered by the Financial Services Board as an insurer or underwriter;
- deposit into an account administered by the Minister responsible for mineral resources; *or*;
- contribution to a trust fund established in terms of applicable legislation.

National Treasure Minerals (Pty) Ltd has opted to use a financial guarantee to provide for the determined quantum for financial provision.

13. MECHANISM FOR MONITORING COMPLIANCE WITH AND PERFOMAMCE ASSESSMENT AGAINST THE ENVIRONMENTAL MANAGEMENT PROGRAMME AND REPORTING THEREOF

13.1 INSPECTIONS AND MONITORING

During the impact assessment, potential impacts on the environment were identified. Mitigation measures were also specified for prevention and management of the impact so as to minimise their effect on the environment. This section will describe how the mine intends to ensure that the mitigation measures are being undertaken and that their effectiveness is proven.

A monitoring programme has been developed for the identified impacts and their mitigation measures. This monitoring programme will be undertaken and results thereof used to determine the effectiveness of the mitigation measures. The ECO will have an overall responsibility for ensuring that all monitoring is conducted according to the approved EMPR.

13.2 MONITORING COMPLIANCE WITH AND PERFORMANCE ASSESSMENT AGAINST THE ENVIRONMENTAL MANAGEMENT PROGRAMME AND REPORTING THEREOF

As part of the general terms and conditions for an environmental authorisation and in order to ensure compliance with the EMPR and to assess the continued appropriateness and adequacy of the EMPR, National Treasure Minerals (Pty) Ltd will:

- Conduct monitoring on a continuous basis (see EMPR).
- Conduct performance assessments of the environmental management programme once in every two years.
- Compile and submit a performance assessment report to the minister in which compliance with the approved Environmental Management Programme is demonstrated.

The performance assessment report will as a minimum contain the following:

- Information regarding the period applicable to the performance assessment
- The scope of the assessment.
- The procedure used for the assessment.
- The interpreted information gained from monitoring the approved environmental management programme.
- The evaluation criteria used during the assessment.
- The results of the assessment.
- Recommendations on how and when non-compliance and deficiencies will be rectified.

13.3 PROCEDURE FOR ENVIRONMENTAL RELATED EMERGENCIES AND REMEDIATION

An environmental emergency is an unplanned event, which has the potential to result in a significant adverse environmental impact and/or could result in legal liability to **National Treasure Minerals (Pty) Limited** in terms of environmental legislation requirements. The following define most likely potential environmental emergencies:

- Hydrocarbon spills or leaks
- Surface fires, including veld fires
- Transportation accident

National Treasure Minerals (Pty) Limited has developed procedures for environmental related emergencies for the Klipbanksfontein prospecting project, which is explained in more detail below.

Introduction

This procedure describes the process to be followed to report and deal with emergencies, which may occur on the prospecting site. An effective, comprehensive, well-considered and tested environmental emergency preparedness and response plan has the potential to save lives, prevent unnecessary damage to company and other property and to manage environmental risk.

This standard procedure aims is to identify potential for and respond to accidents and emergency situations, and for preventing and mitigating the environmental impacts that may be associated with them. Below are the objectives of the above-mentioned procedure:

- To ensure quick and controlled response to environmental emergencies through the use of correct personnel and equipment.
- To prevent incidents from becoming more extensive through the timeouts contact and arrival of trained personnel on site.
- To establish a management mechanism from which a range of safety, environmental and health issues can be dealt with should they arise.

Purpose of the procedure

To provide guidance to all drilling crew in the event of an environmental emergency at Klipbanksfontein prospecting project or related to its activities. This procedure is developed so as to provide guidance to ensure that:

- Danger to the environment, personnel, contractors and non-employees are minimized.
- Legal liability is managed and minimised.
- Public relations are effectively managed during and following an emergency.
- Reporting is effective and corrective/follow-up actions are implemented.

This procedure contains information relevant to all drilling crew of the prospecting site. It is the responsibility of all employees to familiarize themselves with the contents of this procedure. Furthermore, site manager should ensure that all contractors have access to this procedure and the requirements contained herein.

Legal requirements

The following below listed legislations were identified for the emergency response activities in the mining industry. The legislation requires that governmental department be kept informed of incidents and accidents:

- Regulation 51 of Regulations under the Minerals and Petroleum Resources Development Act, 2002 (Act 28 of 2002) – PROCEDURE FOR ENVIRONMENTAL RELATED EMERGENCY AND REMEDIATION
- Mine Health & Safety Act 29 of 1996 – MANNER OF REPORTING AND KEEPING OF INFORMATION REGARDING INCIDENTS & EMERGENCIES
- Occupational Health & Safety Act 85 of 1993 – EMPLOYEE REQUIREMENTS TO REPORT INCIDENTS WHERE ACTIVITY HAS OCCURRED

Responsibilities

Site Manager

National Treasure Minerals (Pty) Limited is responsible for the safety and well-being of employees working at Klipbanksfontein prospecting project as well as the protection of the environment from unnecessary negative impact. The Site Manager has a responsibility to initiate a warning process should an emergency occur or should something at the prospecting site deteriorate in an uncontrolled manner presenting a risk to employees, the public or the environment.
Site Manager

It is the responsibility of the Site Manager to appoint a person or persons to review and audit the activities as covered by the scope of this Procedure. The Site Manager or his appointed representative shall ensure that the audits are being conducted systematically and at regular defined intervals. The Site Manager shall further ensure that the person nominated to perform audits of the emergency system, are given all the necessary assistance and facilities to conduct the task effectively.

Local Government

Local governments have the responsibility to warn residents of a hazardous situation, these warnings must be based on information provided by the site manager.

All employees, contractors and other relevant parties

All employees, contractors and other relevant parties should ensure that they are familiar with this procedure.

Description of Possible Emergencies and Remedial actions.

The following define most likely potential environmental emergencies. The Site Manager will be contacted in all emergencies. In all the cases the surrounding area must be cordoned off in a safe and efficient way. Emergency equipment for direct incidents must be available on the prospecting site at all times.

Hydrocarbon spills,

These are typically spillages or leaks of hydrocarbon liquids from containers and pipelines. The hydrocarbon liquids involved in these emergencies are diesel, new and used oils and paint. The spillages of hydrocarbon liquids may potentially contaminate the groundwater regime, surface water

and soils over the affected areas. These, if not remediated properly, may have permanent detrimental effects environmental components.

All hydrocarbons will be stored in well enclosed containers. Emergency telephone numbers with contact persons will be placed near the containers. Credible company will be called, if a carbon spill occurs, they will assess the situation and take the necessary steps.

Transportation accident,

The drilling crew uses various machinery and vehicles such as drill rig and light vehicles for the transportation of material around the prospecting site. During an accident, while transporting these materials, both the material and the liquids within the vehicles may cause detrimental damage to the environment. Liquids will include diesels, petrol and oils from the vehicles.

Speed limits will be place around the prospecting site. The employees will be made aware of the speed limits and the reasons for having them. The following procedure will be implemented.

- Spillages will be rectified as soon as possible.
- Type of spillage must be identified.
- Clean-up will be done by credible company.
- If outside the prospecting site, the traffic department will be notified.

Surface fires, including veld fires.

These include any fires within the Klipbanksfontein prospecting right project. These fires may emanate either from the prospecting site or outside the prospecting site. The fires are considered emergency situations since they put lives of employees at risk and result in the destruction of environmental components such as natural vegetation (grasses, trees), animal life (wild and domestic livestock) and air quality. It is for this reason that fires have been identified as a potential emergency situation.

- Firefighting equipment will always be kept at the prospecting site ready, in a good working condition and at an accessible location. Correct fire extinguishers will be used to extinguish the fire. Note that no water on electrical and liquid based fires will be used. The employees will be trained on dealing with fire situation. First aid equipment will be made available at all times. Site Manager will assemble the fire team and combat the fire.
- If the fire seems to go out of control, the Fire Brigade from the nearby town will be contacted. Klipbanksfontein prospecting project will establish a working agreement with the Fire Brigade from the nearby town to make themselves available at any time in a case fires are out of control.
- All affected farmers will be contacted.

At any prospecting site and at any works:

a) No person shall place, throw or leave, or cause or permit to be placed, thrown or left, any naked light or flame or any burning lighting torch, match, cigarette, tobacco, paper or other burning material on or near any combustible material or inflammable substance where this may cause danger from fire or explosion;

b) No waste material of a combustible nature shall be stored anywhere in quantity sufficient to create a fire hazard;

b) no welding, flame-cutting or flame-heating shall take place unless adequate means are immediately available for extinguishing any fire which may result from such operation;

c) on completion of any welding, flame-cutting or flame-heating, an examination shall be carried out by a competent person to ensure that no fire will result from such operation;

d) all machinery shall be so constructed, installed, operated and maintained as to prevent as far as practical, dangerous heating.

Notification process

There are six main steps in managing an emergency, from the identification of the situation to final close off. They are as follows:

- -Find and identify
- Ensure human safety
- Reporting
- Containment and clean-up
- Corrective action
- Monitoring

Emergency equipment and supplies

There will be a directory of emergency equipment and other supplies on site as well as person/s responsible for the equipment.

Communication systems

Communication is critical during an emergency on site so that efforts to manage the situation are coordinated to produce the desired results. The communication channels that will be available on site will include:

- Internal phone line system
- Hand held radios
- Cellular phone

Training

The site manager will ensure that employees are trained on emergencies that might occur at Klipbanksfontein prospecting project.

Method of emergency activity identification

During the prospecting operation at the said site, the site manager will ensure that measures are put in place to ensure that other possible environmental emergency activities are identified.

Review and revision

During the course of the prospecting operation a number of emergency response drills will be carried out and recorded (minimum of one per every year). Emergency response drills will normally be carried out during operational hours to best evaluate the response and involve the highest number of employees. These are at the discretion of the Site Manager and may involve one or more of the

emergency activities listed in this standard procedure. Emergency response drills should not be of the same type unless significant problems were experienced with the previous drill.
Regular auditing and questioning of the key personnel involved in emergency response will also be conducted. This will take the form of planned task observations (PTO). It is the responsibility of the Site Manager to undertake these PTO's on a regular basis and record the response.
Information from PTO's and drills will be collated and assessed. Alterations and modifications to the Emergency Response Procedure will also be conducted after the response drill evaluation. This task will be performed in co-ordination with the Site Manager to which the drill applies.

ENVIRONMENTAL AWARENESS PLAN

In terms of section 39(3)(c) of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002), Klipbanksfontein prospecting area must compile and implement an environmental awareness plan. The above-mentioned environmental awareness plan must describe the manner in which the site manager (in this case Klipbanksfontein prospecting area) will inform their employees of any environmental risk which may result from their work and the manner in which the environmental risks will be addressed to avoid pollution or/and degradation of the environment. This document, therefore concerns the details of the environmental awareness plan for Klipbanksfontein prospecting area as required by the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002).

In view of the above, Klipbanksfontein prospecting area has developed an environmental awareness plan for the proposed Klipbanksfontein prospecting area, which is explained in more detail below.

Note that the responsible person will revise these environmental awareness procedures from time to time. The date of commencement of the revised procedure will always be indicated to prevent confusion, in this case after the issuing of prospecting right to Klipbanksfontein prospecting area.

This Environmental Awareness (Standard Training Procedure) sets out the training objectives regarding to environmental awareness. It is a stand-alone procedure, which serves to improve awareness, training and competency in the environmental field. It contains no detail on the actual training initiatives but rather serves to ensure that a responsible person is appointed to deal with and increase environmental awareness on the prospecting site.

Scope

This Environmental Training Standard Procedure sets out the prospecting site's training objectives regarding environmental awareness. It is a stand-alone procedure, which serves to improve awareness, training and competency in the environmental field. It contains no detail on the actual training initiatives but rather serves to ensure that a responsible person is appointed to deal with and increase environmental awareness on the prospecting site.

Objectives

The following are the objectives set for this standard procedure:

- To explain and aid the personnel involved in training with regards Environmental Management System (EMS);
- To clarify the EMS training and ensure that all employees are correctly instructed with regards to the environment.

Safety risks associated with activity

There were no hazards identified in applying this standard procedure.

Responsibilities

In the case where there is no training department on site, a responsible person should be identified (Site manager, Environmental Officer or Consultant) to ensure that the objective of this procedure is met.

Legal requirements

The following legislation and standards apply to this Standard Procedure:

* Employment Equity Act 55 of 1998 – AREAS WHERE EMPLOYMENT EQUITY ARE DEFINED, INCLUDING TRAINING & DEVELOPMENT.
* National Environmental Management Act 77 of 1998 – RECOMMENDATIONS FOR INSTITUTIONAL CO-OPERATION.
* Minerals and Petroleum Resources Act, 2002 (Act 28 of 2002) – DEVELOPMENT OF AN ENVIRONMENTAL AWARENESS PLAN.

Induction Programme

An Induction Programme, which will include environmental awareness programme will be established for Klipbanksfontein prospecting project. During the training sessions various topics will be discussed such as, but not limited to: Water Pollution Prevention, Good Environmental Housekeeping, etc. Through the Induction Programme, the site manager, or any other responsible appointed person shall ensure that all staff receives training in:

Administrative requirements and procedures, which will include the Environmental Emergency.

Procedures

Resource conservation and environmental reporting and general environmental awareness for prospecting site related environmental issues.

All employees (including contractor employees) will undergo induction. Klipbanksfontein prospecting project induction includes training and awareness on environmental issues on the drilling site and is compulsory for all new employees. The induction programmes will as mentioned above, have an environmental management component. On an annual basis the environmental section of the induction gets updated to ensure that it is up to date. Consideration should be given to:

- Significant environmental impacts as identified in the EMP.
- Procedures: environmental awareness and emergency procedures.
- Trends in incidents.
- Trends in audit findings.

Trainee needs

The identification of environmental training and environmental awareness needs are derived from an analysis of the type of role different categories of employees play at Klipbanksfontein prospecting project. The following categories are considered, viz:

- Site Management.

- Supervisors.
- Operators.
- Visitors and contractors.

Each of these categories has different responsibilities and therefore has different knowledge requirements and environmental awareness training needs to obtain that knowledge.

Training Planning

Identified and agreed training needs shall be included in budgets. Course attendance (other than at the internal induction courses) shall be scheduled on the basis of the importance of task contribution to the maintenance, effectiveness and improvement of the objectives.

General environmental awareness training

General awareness training will be offered to operators, processors during the safety toolbox talks. This will be conducted on rotational basis. New environmental awareness topics are determined and new topics are introduced after all the shifts have received training/awareness on the current topic. The following will be undertaken to ensure that the above awareness training is conducted:

- A monthly environmental awareness topic for discussion will be distributed to the prospecting site. These topics will be discussed at the safety toolbox talks, by SHE (Safety, Health and Environmental) site manager /Environmental officers if available.
- The topics will also be displayed on the notice boards of the prospecting site.
- Ad hoc environmental awareness sessions to the prospecting site will be conducted on request. The presentations will focus on the environmental issues relevant to individual tasks.

Job specific environmental awareness training

Job specific training will be developed to address urgent training needs as identified /required. The training material will focus on the following:

- Waste prevention and control (implementation of the waste management procedure).
- Hydrocarbon and chemical spill reporting and clean up.
- Storing and handling of chemicals.
- Rehabilitation.

Supervisory staff within specific drilling site will be equipped with the necessary knowledge and information to guide their employees on environmental aspects applicable in performing a specific task.

Competency training

Site manager (training official/environmental officer if available) is responsible for the environmental competency and awareness training of middle management and supervisors. This training will be conducted on both a one to one basis and through workshops. If required, external organizations may be requested to provide training to selected employees (e.g. EMP auditing).

Competence and the effectiveness of training and development initiatives will be determined through the following:

- Trend analysis and reporting

- Analysis of work areas during visits and audits
- Trend analysis of monthly incidents (or zero tolerance if available) as recorded per prospecting site.

Certification

Photocopies of certificates issued after completion of a training course shall be maintained in the staff member's file and Training Department's records.

Records

Environmental awareness and training records will be kept at a safe and accessible place on site.

13.4 UNDERTAKING TO COMPLY

I, ..., the undersigned and duly authorised thereto by **National Treasure Minerals (Pty) Ltd** have studied and understand the contents of this document in its entirety and hereby duly undertake to adhere to the conditions as set out therein including the amendment(s) agreed to by the Regional Manager.

Signed at .....……..... this.....day of…….....20.....

.....

Signature of applicant Designation

APPROVAL

Approved in terms of Section 39(4) of the Mineral and Petroleum Resources Development Act, 2002 (Act 29 of 2002)

Signed at…….this.....day of…….....20.....

.....……..

REGIONAL MANAGER

REGION:……

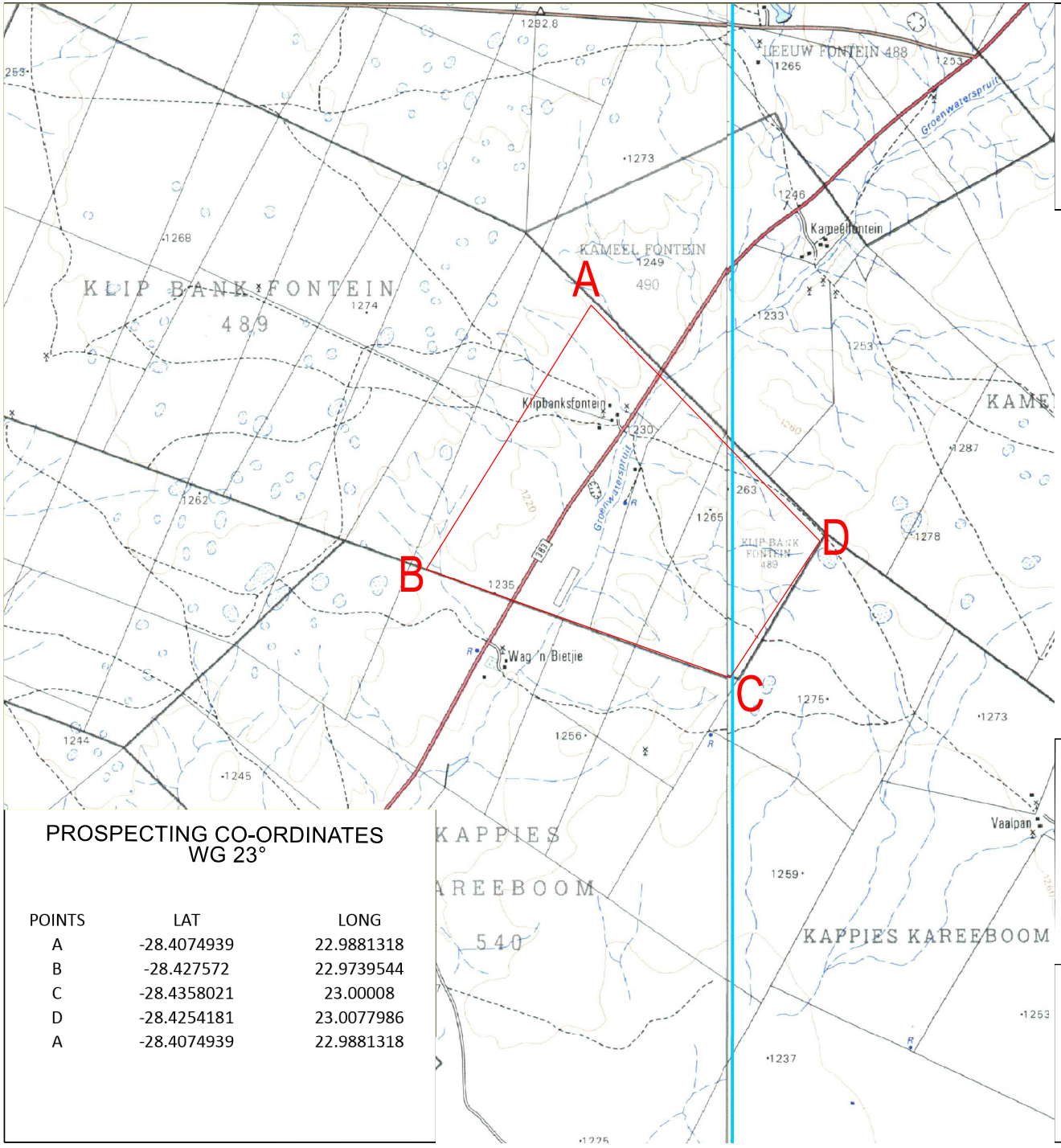
APPENDIX A
REGULATION 2(2) PLAN

NATIONAL TREASURE MINERALS (PTY) LTD
REG NO: 2016/265134/07

APPLICATION FOR PROSPECTING RIGHT

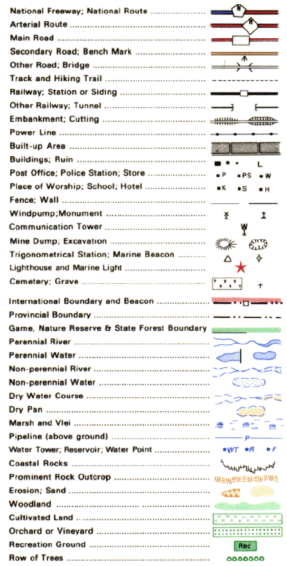
Plan compiled in accordance with
Regulation 2(2) of the Mineral & Petroleum
Resources Development Act 2002
(ACT 28 of 2002)

Scale 1 : 1 300



LEGEND

PROSPECTING RIGHT AREA



PROSPECTING CO-ORDINATES
WG 23°

POINTS	LAT	LONG
A	-28.4074939	22.9881318
B	-28.427572	22.9739544
C	-28.4358021	23.00008
D	-28.4254181	23.0077986
A	-28.4074939	22.9881318

The figure lettered A-D AND A represent a Prospecting Right area in extent of approximately 534.10ha, comprising of a portion of remaining extent of the farm KLIPBANKFONTEIN 607, Located 11.19km South West of the town POSTMASBURG, In the Magisterial district of POSTMASBURG for which NTM (PTY) LTD REG NO. 2016/265134/07 has applied for a prospecting right in terms of Section 16 of the Mineral and Petroleum Resources Development Act, 2002, (Act 28 of 2002), but subject to Regulation 17 of the Mine Health and Safety Act, 1996 (Act 29 of1996), excluding any area within 100 meters of any public road, railway, cemetery, residential area or public area.

SIGNED: .....
REGIONAL MANAGER
NORTHERN CAPE PROVINCE

SIGNED: .....
NTM (PTY) LTD
Reg No: 2016/265134/07

XAKWA TECHNICAL SERVICES

Contact : 012 472 0328
Email : info@xakwa.com
tiisetso@xakwa.com

Address : 175 Corobay
Waterkloof Glen
0010